



the federation for a sustainable environment

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GENERAL COMMENTS ON THE INTEGRATED REPORTING FRAMEWORK

PRELIMINARY COMMENTS

We have read the Integrated Reporting Framework with great pleasure. We laud this noble initiative.

We submit our comments with diffidence and deference.

BACKGROUND

The FSE is a true multi-stakeholder facilitator in the co-operation and engagement between the public, civil society organizations, leading national and international non-government organizations, government and leading national and international experts in the field.

The FSE works intensively with academics, the national and international news media, decision makers and interested and affected parties in reviewing scoping and environmental impact reports, integrated water use licence applications, waste water management plans, environmental management programme reports and plans, national, provincial and local strategic management frameworks; in conducting research; and in consulting with leading representatives from the South African Government, the mining industry, the legal fraternity, national and international academic institutions as well as representatives from all spheres of the public sector.

It has collected the perceptions and suggestions of these stakeholders to serve as a basis for a framework for responsible mineral development, integrated mine water management, proactive management of surface and underground mines, water reuse and reclamation, impact prediction pertaining to prospecting, mine feasibility, the mine operating phase and the mine closure phase¹. Without the actions of the FSE, the extent of the problem of mining waste and acid mine drainage would not have been highlighted and constantly brought to public attention. Not only has the FSE been a public advocate of the need for solutions, but the FSE has kept the media and affected communities informed, mobilising resources to draw attention to the problem in new and creative ways. Most serious news reports and academic papers will contain comment by the FSE. The FSE has appeared before a number of parliamentary committees, informed ministers and worked with some of the key players to ensure that the problem becomes closer to resolution. The FSE's approach has also been to make the science intelligible to ordinary people, and to that end the FSE has worked alongside academic and scientific experts, with its directors'

¹ The FSE's Annual Narrative Report, 2010; "Acid mine drainage on the Witwatersrand: reluctant regulation, scavenger capitalism and the assault on health and the environment" by Dr. David Fig, New South African Review 2011; the peer reviewed academic paper, entitled "Proactive environmental activism to promote the remediation of mined land and acid mine drainage: a success story from the South African goldfields" by Mariette Liefferink et al, which was presented, on invitation, at the International Mine Water Association's Symposium in September, 2010 in Canada; *Protagonist and proactive environmental activism towards addressing acid mine drainage and remediation needs in some Gauteng goldfields*, by Prof. Elize S. Van Eeden, 2011; *Environmental Lobbying in South Africa: The case of Acid Mine Drainage activism in Johannesburg*, N. Funke et al. CSIR. 2010.

expertise being recognised through awards, appointments to national Steering Committees and Boards of Governmental institutions, and an honorary associateship from Northwest University. It is clear from the record that the actions of the FSE has been extremely important in raising public awareness of the acid mine drainage problem².

INTRODUCTION

In view of the aforesaid our comments will focus on the integrated reporting framework pertaining to the mining industry, particularly the gold and coal mining industry in South Africa.

The history and environmental legacies of the gold mining industry in South Africa deserves attention:

As early as 1987, the US Environmental Protection Agency recognised that “.....*problems related to mining waste may be rated as second only to global warming and stratospheric ozone depletion in terms of ecological risk. The release to the environment of mining waste can result in profound, generally irreversible destruction of ecosystems.*”³”

The potential volume of AMD for the Witwatersrand Goldfield alone amounts to an estimated 350ML/day (1ML = 1000m³). This represents 10% of the potable water supplied daily by Rand Water to municipal authorities for urban distribution in Gauteng province and surrounding areas, at a cost of R3000/ML.

² Christie, Sean. 2010. ‘Water Warriors, *Mail & Guardian*, 17-23 September; Johannesburg empoisonnee par des eaux toxiques, Le sous-sol de la région, transformé en gruyère, a été exploité pendant plus d’un siècle pour extraire de l’or, *Le Monde*, Jeudi 24 février 2011; *ZDF German Television; Deutsche Welle*, Zuid-Afrika vreest zijn oude goudmijnen, Vervuild water uit verlaten goudmijnen dreigt grote schade te veroorzaken in Zuid-Afrika, *Handelsblad*, 14 January, 2011; *Canada, The Globe and Mail*, Geoffrey York, Sep. 20, 2010; *Washington Post*, Lucrative mining leaves toxic legacy for South Africa: dirty water endangers people, wildlife, by Associated Press, Saturday, March 26, 2011; *Die Welt*, <http://www.welt.de/vermischtes/weltgeschehen/article12669188/Radioaktivster-See-der-Welt-liegt-bei-Johannesburg.html> etc.

³ European Environmental Bureau (EEB). 2000. *The environmental performance of the mining industry and the action necessary to strengthen European legislation in the wake of the Tisza-Danube pollution.* EEB Document no 2000/016. 32 p

The gold mining industry in South Africa (principally the Witwatersrand Goldfield) is in decline, but the post-closure decant of AMD is an enormous threat, and this could become worse if remedial activities are delayed or not implemented⁴.

The Witwatersrand⁵ has been mined for more than a century. It is the world's largest gold and uranium mining basin with the extraction, from more than 120 mines, of 43 500 tons of gold in one century and 73 000 tons of uranium between 1953 and 1995. The basin covers an area of 1600 km², and led to a legacy of some 400 km² of mine tailings dams and 6 billion tons of pyrite tailings containing low-grade uranium.

Waste from gold mines constitutes the largest single source of waste and pollution in South Africa and there is wide acceptance that Acid Mine Drainage (AMD) is responsible for the most costly environmental and socio-economic impacts.

As at 1997, South Africa produced an estimated 468 million tons of mineral waste per annum.⁶ Gold mining waste was estimated to account for 221 million tons or 47 % of all mineral waste produced in South Africa, making it the largest, single source of waste and pollution⁷.

There are more than 270 tailings dams in the Witwatersrand Basin, covering approximately 400 km² in surface area⁸. These dams are mostly unlined and many are not vegetated, providing a source of extensive dust, as well as soil and water (surface and groundwater) pollution.⁹

Production of AMD may continue for many years after mines are closed and tailings dams decommissioned. AMD is not only associated with surface and groundwater pollution,

⁴ CSIR. *Briefing Note August 2009. Acid Mine Drainage in South Africa. Dr. Pat Manders. Director, Natural Resources and the Environment.*

⁵ The Witwatersrand Mining Basin is composed of the Far East Basin, Central Rand Basin, Western Basin, Far Western Basin, KOSH and the Free State gold mines.

⁶ Department of Water Affairs and Forestry, 2001.

⁷ Ibid

⁸ AngloGold Ashanti, 2004.

⁹ Ibid

degradation of soil quality, for harming aquatic sediments and fauna, and for allowing heavy metals to seep into the environment but long-term exposure to AMD polluted drinking water may lead to increased rates of cancer, decreased cognitive function and appearance of skin lesions. Heavy metals in drinking water could compromise the neural development of the fetus which can result in mental retardation¹⁰.

INTEGRATED SUSTAINABILITY REPORTING NEEDS TO INCLUDE FEEDBACK ON LEGACIES AND POST CLOSURE IMPACTS, WHICH SHOULD BE TRANSLATED INTO ECONOMIC TERMS

Not grounded on notions of sustainability, the early gold economy was simply an extractive industry with little consideration given to possibly adverse long term effects. Mine owners took advantage of weak governmental regulation or currently, failure on the part of the South African government to enforce policy¹¹, by externalizing costs. Adverse socio-economic and environmental effects have been deflected onto third parties. Called negative externalities, these deflects costs are imposed on stakeholders other than the mining company itself; they are not internalized by the company as it makes production decisions¹².

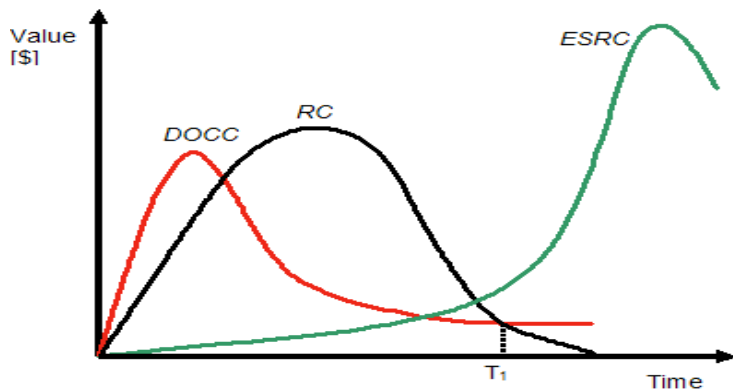
Negative externalities associated with mining are often delayed and accumulate for decades after mineral extraction. For this reason, the social costs associated with mining are difficult to predict and are not reported. Meanwhile, in the short term, these delayed – and hence less “visible” – costs make the total social cost appear deceptively low.

¹⁰ *“The pollution and destruction threat of gold mining waste on the Witwatersrand - A West Rand case study,”*
By S.H.H. Oelofse, et al. CSIR, Natural Resources and the Environment.

¹¹ Annexure “A”

¹² “Water, mining, and waste: an historical and economic perspective on conflict management in South Africa.
Rebecca A. Adler et al. The Economics of Peace and Security Journal, ISSN 1749-852X. www.epsjournal.org.uk –
Vol 2, No 2 (2007)

Theoretical representation of the externalization of costs by the goldmining industry in South Africa



The Development and Operational Cost Curve is in red, the Revenue Curve is in black, and the Environmental and Social Remediation Curve is in green. Following mine closure (T1), the ESRC costs continue to accrue.

Figure 1 represents costs and benefits associated with gold mining. The vertical axis expresses value in monetary terms (i.e. US\$ or local monetary equivalent), and the horizontal axis represents time. The Development and Operational Cost Curve (DOCC) refers to the cost of developing and operating a specific mine. This includes costs of prospecting, sinking of mine shafts, pumping of ground water, cooling of shafts, along with developing and employing water treatment facilities and complying with other environmental regulations. The Revenue Curve (RC) represents the revenue generated by the mine. The area under the curves thus equals cumulative development and operational costs and cumulative operational revenues. The difference between the two lines at any one point in time equals profit earned by the mine at that instance. The difference between the total areas under DOCC and RC reflects lifetime profitability of the mining operation.

The financial success of a mine has historically been represented by the cost of development and operation (DOCC) and the revenues generated (RC). These are balance sheet items reported to shareholders. Mine closure occurred when revenue streams dropped below the cost of operation the mine (to the right of T1).

The third curve in Figure 2, the Environmental and Social Remediation Curve (ESRC), represents the costs associated with rehabilitation of mining operations after decommissioning, including the cost to human and environmental health and the social legacy of people employed, supported and attracted to the mine and its surrounding areas. Importantly, this factors in impacts on affected populations that live off-mine, something that is never brought onto any balance sheet. This curve is slow to gain amplitude because the environmental impacts of mining are cumulative and typically require several decades to take effect. By the time environmental and socio-economic consequences become noticeable, the mines have typically closed or become insolvent and thus cannot be compelled anymore to contribute to remediation either financially or through other actions¹³.

In view of the aforesaid, we say, without hesitation, that it is impossible to acquit mining companies for the aforesaid historical pollution and environmental infractions. Integrated reports ought to disclose historical non-internalised negative externalities that have resulted in current environmental crises and significant financial costs, and which will have to be accounted for in terms of the retrospective application of the polluter pays principle¹⁴.

Integrated reports furthermore ought to include not merely the life-cycle costs of the mining operations but the life-cycle costs of the impacts in order for shareholders to ripen their judgment regarding the sustainability or not of a mining company.

Mining companies have very dexterously contrived to conceal from their shareholders the true costs of addressing environmental legacies and the future long term post closure environmental and social impacts with associated financial implications, particularly Acid Mine Drainage and uraniferous mining waste. By making concessions apparently candid and ample in their Reports regarding the current address of AMD and environmental impacts, they elude the great issues, inter alia the pumping and treatment of AMD for **centuries**, the remediation of sterile river systems and eco-systems, the address of the diffuse sources of AMD such as the 270 tailings dams containing 6 billion tons of iron pyrite tailings and 450 000 tons of uranium, the “making

¹³ Ibid

¹⁴ National Environmental Management Act, No 107 of 1998. Section 28.

safe” of large amounts of highly toxic and radioactive substances which remain an incalculable danger to the whole of creation for historical or even geological ages¹⁵.

Even though a large number of the rivers within the Witwatersrand goldfields are significantly contaminated by heavy metals released from present day and historic mining operations, relatively little is known about the effects on communities that live beside and rely on these rivers for food and livelihood. One of the complications is that the toxicity of many metals is a function of such conditions as redox, pH and water hardness.

Elevated salts and metals can also negatively affect the health of animals and humans in many different ways, depending on the species, age, sensitivity, general health and diet of the consumer, among other factors. Some metals, when consumed in excess, can affect organs and the central nervous system, cause reproductive failure or birth defects, and act as cofactors in many other diseases.

Certain receptors may be more sensitive than others, depending upon species, age, sex, season, body mass, metabolic rate, general health, diet, behaviour, etc, with younger animals and children being generally more at risk than adults under the same conditions of exposure (WHO). The potential for trans-generational (genetic) impacts of bioaccumulated metals and NORMs (Naturally Occurring Radiactive Materials) on biota exposed above certain thresh-holds.

The probability that such latent impacts will only be identified and assessed over the next 100 to 500 years ought to be disclosed to shareholders in the companies’ reports¹⁶.

INTEGRATED REPORTING NEEDS TO REPORT ON REGIONAL IMPACTS

The Witwatersrand Basin forms, by far, the largest gold metallogenic district in the world.

¹⁵ E.F. Schumacher

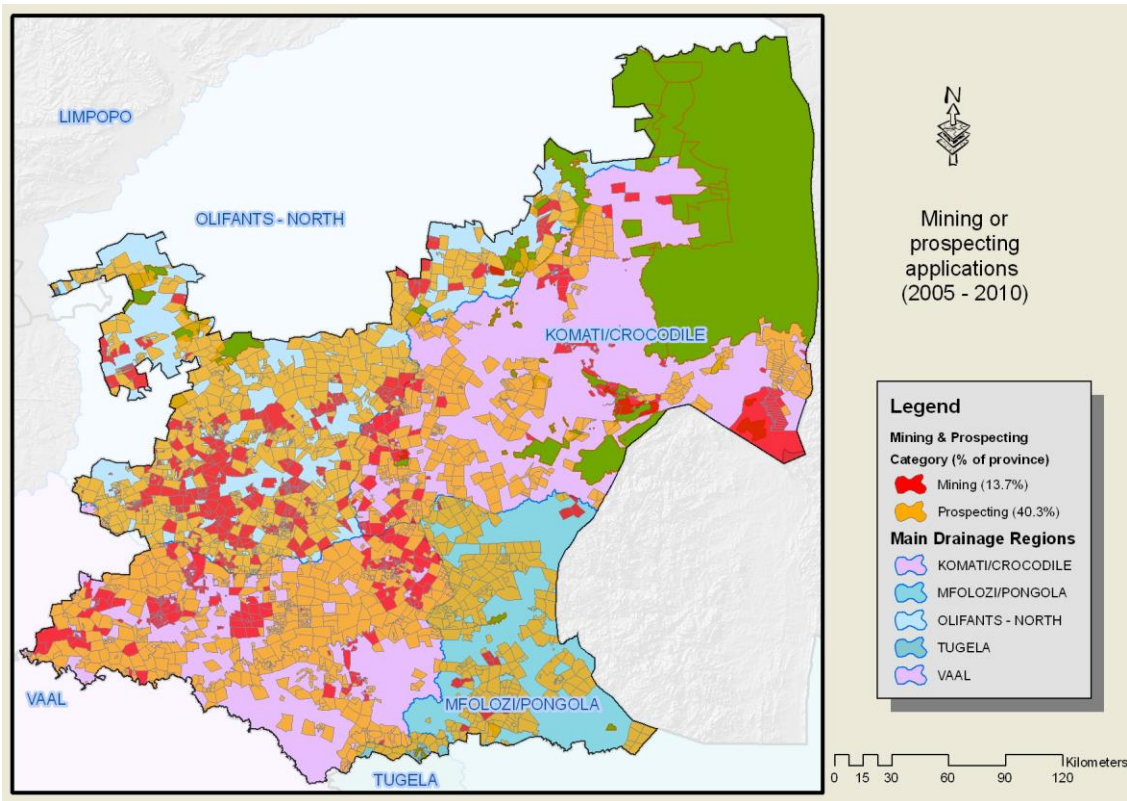
¹⁶ AngloGold Ashanti Draft EIA/EMP Report: West Wits Operations. 2009

Owing to the large-scale interconnection of underground mine workings within the Witwatersrand goldfields, changes in the water management regime within the underground workings of one mine will have a profound impact on the adjacent mines. In particular, the closure of one mine in a regional closure area and the cessation of pumping will impact on the other mines, potentially leading to their premature closure¹⁷.

Integrated reporting can therefore not focus on an individual mine's impacts alone. In the Witwatersrand gold mining area the regional cumulative impacts deserve serious consideration in corporate reports because of interconnected underground mine voids, where water may flow from one mine to another.

With reference to the coal mining industry, coal mining companies need to report on the accumulative impacts of coal mining in the region on ground and surface water and land. Figure 2 shows the mining and prospecting applications within the Mpumalanga coalfields.

¹⁷ Draft Regional Mine Closure Strategies for the Witwatersrand Goldfield. Department of Mineral Resources. 2008.



INTEGRATED REPORTING NEEDS TO REPORT HONESTLY ON CORPORATE SOCIAL AND ENVIRONMENTAL INITIATIVES AND ITS RELEVANCY TO ITS ACTIVITIES

The corporate focus on feel-good community and biodiversity enhancement projects often represents attempts to create positive corporate images while diverting shareholders and the public away from the fundamental question of how to ensure that there is at least corporate environmental compliance with existing national norms and standards e.g. pollution and waste management.

Until this is resolved satisfactorily, corporate reporting will remain in the realm of:

- public relations
- greenwash
- business as usual
- narrow self interest
- an inability to redress the unjust environmental legacy of the apartheid past

Unless social and environmental initiatives and investment are cause related and focused, it is conceived as hypocritical, commercial opportunism rather than genuine commitment.

To exemplify: A mining company operational within the West Rand goldfield sponsors, as part of its corporate social and environmental initiatives, a selective number of learners to attend Parliamentary sessions while failing to address the significant impacts upon local mining communities. These impacts include toxic and radioactive dust fallout, AMD, contaminated soil and unrehabilitated footprints of re-mined tailings dams, and exposing local communities to elevated levels of toxic and radioactive heavy metals.

An industry that hides its health impacts on local communities, even as it educates children about politics, is simply trying to sustain itself and ‘business as usual.’

Historically and currently companies are able to justify in their reporting all kinds of unethical practices in the name of profits, or job creation, while causing wholesale destruction of the natural environment and long term pollution of scarce ground and surface water resources. It is a widely held belief that economic growth and job creation is always good and should be continuously strived for. It is a myth that wealth that is generated by mining supposedly ‘trickles down’ through the society and the general standard of living is raised. For this reason, growth in gross domestic product (GDP) has come to be regarded as indicative of a country’s level of development and quality of life.

The evidence, however, is challenging this myth. The United Nations’ Human Development Index concludes that ‘the link between economic prosperity and human development is neither automatic nor obvious.’ Similarly, the World Economic Forum’s Pilot Environmental Sustainability Index concludes that ‘there is no clear relationship between a country’s observed economic growth rate and its environmental sustainability’¹⁸.

¹⁸ *An Environmental Perspective – Unmasking the myths of the predatory lion economy*. Guest Essay by Wayne Visser – KPMG.. Enviropedia. 2006 – 2008

The mineral sector has the greatest potential of any sector in South Africa to contribute to the development and poverty alleviation but signs of such positive impacts are rare. On the contrary, the impacts – health, social and environmental – that mining generates are usually borne by local communities, already poor. For communities, especially rural communities, the opportunity for social, economic and infrastructure development is usually unique, but often not realised. Mining communities frequently end up poorer at closure than they were before mining commenced.

Many mining activities are justified because of job creation, gobble up arable land, water and the diversity of life, and spew out pollution, sick people and degraded places. These unintended outcomes worsen poverty and create new health risks¹⁹.

Integrated reporting needs to report on the realities, not the myths.

NGO AND CIVIL SOCIETY INVOLVEMENT

For corporate reporting to have credibility, the views and comments of NGOs, civil society groups, communities, including the marginalised and disempowered communities, must be solicited, facilitated and incorporated - unadulterated - into companies' reports. Grassroots level perceptions and community experiences of corporations' social and environmental performance are significantly anomalous to what is reported upon in corporations' annual reports²⁰.

The aforesaid recommendation is grounded upon the spirit and letter of the National Environmental Management Act (107 of 1998), whereby it is stated: *“the participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and*

¹⁹ *Maintaining profits or sustaining people and planet?* Guest Essay by Dr eureka Rosenberg. Enviropaedia. 2006 – 2008.

²⁰ Annexure “B”

disadvantaged persons must be ensured” and “decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge²¹.”

SUBMITTED BY:

Mariette Liefferink.

CEO: FEDERATION FOR A SUSTAINABLE ENVIRONMENT.

22nd April, 2011.

²¹ Section 4(f) and (g), National Environmental Management Act, No 107 of 1998.

Table 2: Site inspection findings in terms of Government Notice 704

Reg's	Condition/Requirement	Comments from site inspection		
		Mahim water course	Blue Gum water course	External drainage
4	Restriction on locality			
4 (a)	Location of any residue deposit, dam, reservoir within: <ul style="list-style-type: none"> • 1:100 year flood-line or • a horizontal distance of 100 m of a watercourse or borehole (excluding boreholes drilled to monitor) 	Not compliant - Water course highly impacted on both criteria. The 1:100 flood line has been manipulated by berms to separate clean and dirty water runoff	Not compliant - The three water courses are all highly impacted, especially 7 where water from the stockpile area and 8 from previous mined area drains towards the evaporation pond	Comply
4 (b)	No opencast mining, prospecting or other operation or activity within <ul style="list-style-type: none"> • or under the 1:50 year flood-line or • a horizontal distance of 100 m from a watercourse 	Comply - no activity within the criteria	Comply - No activity within the criteria	Comply - no current activity
4 (c)	No placement/disposal of any residue/substance which causes or is likely to cause pollution of a water resource.	Not compliant - clean water course polluted by decant water from Block C. The berms that were place on both sides of the river not sufficient to prevent pollution towards the dam (does not comply)	Not compliant - coal stockpile wash water drains towards evaporation dam in catchment 7	Not compliant - surface water from the mining properties draining towards sub-catchment 5
4 (d)	Any sanitary convenience, fuel depots, reservoir or depots for any substance which causes or is likely to cause pollution not within the 1:50 year flood line of any watercourse	Comply	Comply	Comply
5	Restrictions on the use of material			
	May not use any residue/substance which causes or is likely to cause pollution of water resource for the construction of any dam, embankment, road or for any purpose which is likely to cause pollution of a water resource	Comply	Comply	Comply
6	Capacity requirements of clean and dirty water systems			
6 (a)	Unpolluted water must be confined to a clean water system, away from any dirty	Not compliant - unsuccessful attempt utilizing	Not compliant - polluted water (from plant area),	Not compliant - sub-catchment 5 has unsuccessful

Reg's	Condition/Requirement	Comments from site inspection		
		Mahim water course	Blue Gum water course	External drainage
	area	earth berms to divert decant water, mitigation will require diverting clean water from sub-catchments 6, 2 & 1.	potential to separate clean and dirty systems	placement of cut-off berm/channel (Channel needs to be reshaped)
6 (b)	Clean water systems must be designed, constructed, maintained and operated - not likely to spill into any dirty water system more than once in 50 years	Comply	Comply	N/a
6 (c)	Water arising within a dirty area including water seeping (decanting) from mining operations must be collected into a dirty water system	Not compliant - significant dirty water seepage collected into voids	Not compliant - Gllsa evaporation pond fulfils the role of collector	Not compliant - sub-catchment 5 - mine premises water must be retained (in a lined containment on the premises for re-use.
6 (d)	Dirty water systems must be designed, constructed, maintained and operated so that it is not likely to spill into any clean water system more than once in 50 years	Not compliant - dirty water from Block C, Block B and also Ptn 24 likely to spill in the clean water system	Not compliant - dirty wash water from wash plant spills into this pond - flows need to be improved (decant water from North Block is likely to spill in the system)	Not compliant - sub-catchment 5 - slope of channels and berm need to be improved to isolate flows from small retention pond)
6 (e)	Dirty water system dams/tailings storages to be designed, constructed, maintained and operated with a minimum freeboard of 0.8 m above full supply level (unless otherwise agreed with OWA)	Not compliant - virtually no freeboard on the dirty water retention pond on Block B	No detail to confirm	Not applicable (N/a)
6 (f)	Water systems shall be designed, constructed & maintained to guarantee the serviceability of such conveyances for flows up to the 1 in 50 year flood.	Not compliant - Mahim Dam and dirty water ponds not designed as required (important mitigation measure to be proposed)	Comply	N/a
7	Protection of water resources			
7 (a)	Prevent water containing waste or a substance which causes or is likely to cause pollution of water resource from entering any water resource, (natural	Not compliant - keep dirty and clean water streams separate	Not compliant - system to be improved to separate clean and dirty water systems	N/a

Reg's	Condition/Requirement	Comments from site inspection		
		Mahim water course	Blue Gum water course	External drainage
	flow or seepage) and retain / collect such water for use, reuse, evaporation, purification and disposal			
7 (b)	Design, modify, locate, construct and maintain all water systems, including residue deposits, so as to prevent the pollution of any water resource through the operation or use thereof	Not compliant - To be improved	Not compliant - To be improved	N/a
7 (c)	Cause effective measures to be taken to minimise the flow of any surface water/ floodwater into mine workings	Not compliant - To be improved	Comply	N/a
7 (d)	Design, modify, construct, maintain and use any dam, residue deposit or stockpile used for the disposal or storage of mineral slimes, so that the water or waste therein will not result in the failure thereof or impair its stability	Comply	Comply	N/a
7 (e)	Prevent the erosion or leaching of materials from any residue deposit or stockpile and contain material or substances so eroded or leached in by providing suitable barrier dams, evaporation dams or any other effective measures to prevent this material or substance from entering and polluting any water resources	Comply	Not compliant - leaching water from the coal wash area to be diverted or seeping water to be collected into a retention pond	Not compliant - Berm and channel along the eastern boundary to be improved in catchment 5
7 (f)	Ensure that water used in any process at the mine is recycled as far as practicable, and any facility, sump, pumping installation, catchment dam or other impoundment used for recycling water is of adequate design and capacity to prevent the spillage, seepage or release of water containing waste at any time	Comply during current operations - dirty water used for coal wash and dust control	Comply however signs of leaching water under the damwall need to be addressed. Water could also be re-used	Comply - water can also be re-used
7 (g)	Keep any water system free from any matter or obstruction which may affect the efficiency thereof	Comply - however culverts under roads should be maintained to keep flow paths open, especially in the dirty water systems	Comply	Comply
7 (h)	Cause all domestic waste which	N/a	Comply	N/a

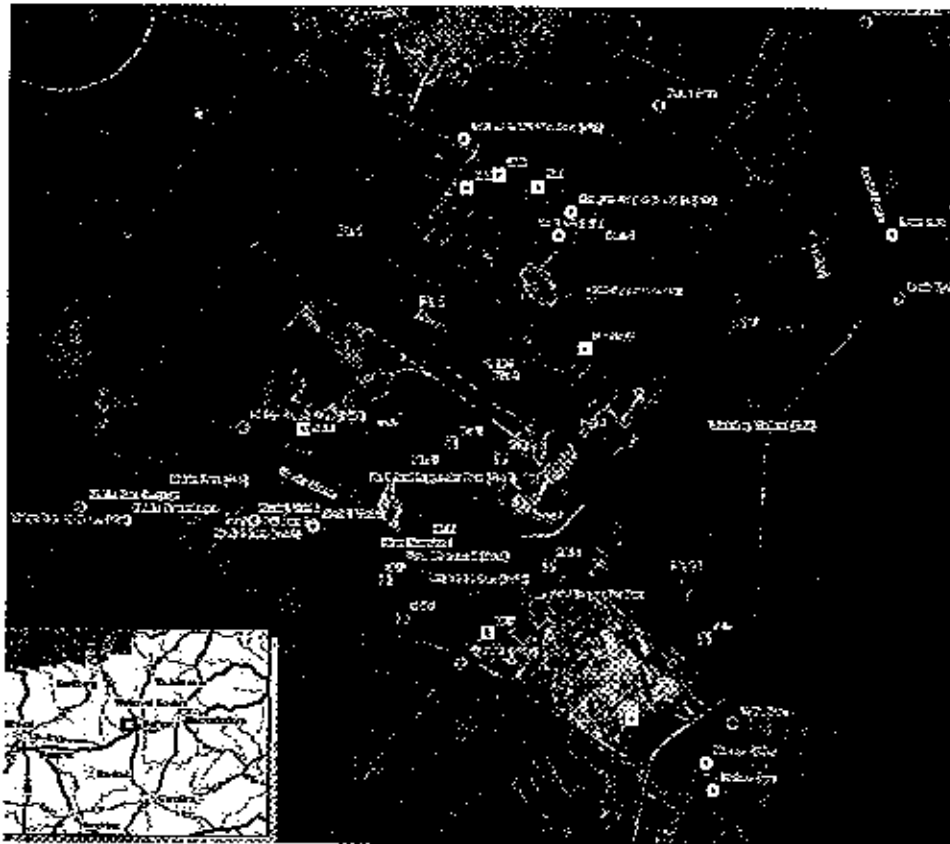
Reg's	Condition/Requirement	Comments from site inspection		
		Mahlín water course	Blue Gum water course	External drainage
	cannot be disposed of in a municipal system to be disposed of in terms of the Act.			
8	Security and additional measures			
8 (a)	Any impoundment or dam containing any poisonous, toxic or injurious substance must be effectively fenced-off to restrict access thereto, and must have warning notice boards at prominent locations to warn persons of the hazardous contents thereof	Comply (N/a)	Comply (N/a)	N/a
8 (b)	Access control in any area used for stockpiling or disposal of any residue or substance which causes, has caused or is likely to cause pollution of water resource is required to protect any measures taken in terms of this regulation	Comply	Comply	N/a
8 (c)	The mine shall not allow the area contemplated in 8 a) and b) above to be used for any other purpose, if such use causes or is likely to cause pollution of a water resource	Comply	Comply	N/a
8 (d)	The mine must protect any existing pollution control measures or replace any measures deleteriously affected, damaged or destroyed by the removing or reclaiming of materials from any residue deposit or stockpile, and must establish additional measures for the prevention of pollution of a water resource which might occur as a result of such operations	N/a	Not compliant - channels and berms directing seeping water from the wash stockpiles to be re-instated - see mitigation	N/a
9	On decommissioning, to ensure remediation of the affected water resource due to the mining activity	See mitigation proposals	See mitigation proposals	See mitigation proposals
10	Winning sand and alluvial minerals from a watercourse	This regulation does not comply to the activities of Glisa Mine		
11	Add regulations for coal residue deposits			
11 (a)	To ensure all coal residue deposits are compacted to prevent spontaneous combustion and minimise infiltration of water	Not compliant - mine need to improve on the closing of mined areas in terms of compaction and shaping of final surface to minimise infiltration		
11 (b)	To ensure rehabilitation of coal	Not compliant - however indications are		

Reg's	Condition/Requirement	Comments from site inspection		
		Mahim water course	Blue Gum water course	External drainage
	residue deposits concurrent with mining	that mine is busy attending to this aspect		

3 SUMMARY OF IMPACTS

From the analyses and the GN 704 inspection, the following problem areas have been identified.

Figure 1: Summary of all monitored locations



Exxaro – Escarpment (North Block Complex – Glisa Colliery, Eerstelingsfontein and Strathrae Colliery), Mooifontein and Grootpan Collieries

North Block Complex

Glisa Colliery

Exxaro is applying for a mining rights conversion, NEMA listed activity authorisations and a water use license for Glisa Colliery. Glisa consist of two mines –

- Portions 1-5 which is an old mine dating back to the 1950's. It had an underground component and an opencast component. Mining ceased in the early 2000's and a new mine was opened – portion 24
- Portion 24 commenced operations about 2003 and consisted of an opencast area only.

There has been a lot of problems from the local community as to dust, noise, damage to graves and blast damage from Glisa Colliery. Nothing has ever been done to alleviate these issues.

It has now become apparent, during the applications lodged, that there are many illegal and criminal activities happening at Glisa.

The following is taken from the expert studies.

- There is no water use license for the operations on portion 24 and it is only now being applied for, although operations have ceased.
- There is no water use license for the new activities on portion 1-5.
- In fact it is clear that the mining of the previous underground areas by means of opencast mining methods now is not permitted in terms of the approved EMPR or mining license in terms of the 1991 Minerals Act. (see appended map that shows the areas..
- GN 704, the regulations in terms of the National Water Act that regulates water use on mines are being transgressed on 14 different areas. (see appended document.)
- Many of the NEMA listed activities being applied for now,, has already been constructed. They are the following:
 - New coal washing facility

- Roads
 - Additional weigh bridge
 - Wash bay with oil separator – the current one is not operational and the sludge from the washing and wash bay is pumped in to the opencast sections.
- Graves have been damaged

The Heritage report states:

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

The report continues:

This is the remains of a graveyard very close to the mining activities in the central area (Figure 7-9). It consist of more or less 32 graves, mostly marked by stone dressing. Some have cement, bricks or granite markers and headstone. The graves are mostly older than 60 years or of an unknown date and are therefore considered to be heritage graves.

GPS: 25°42'21,5"S

30°00'07,1"E

Due to the sensitivity of this issue, graves are always regarded as having a **high** cultural significance. Graves with an unknown date are always handled as if older than 60 years. Graves older as 60 years are regarded as heritage graves.

The mining activities are extremely close to the graves (less than 10 metres) and it seems to have already impacted negatively on the stones. Some have cracked and others have fallen over. Therefore there is a direct impact thereon.....

The graves have not deteriorated to such an extent that it can no longer be left as it is. Therefore urgent discussion with the community is needed

Attached are letters from the community as well as some pictures taken by the community of the graves. The community did not want the graves to be disturbed and did not ask for compensation as is being said in the report. The letters make it very clear.

Eertelingsfontein

Exxaro started operations without a water use license and without even applying for NEMA listed activity authorisation. They have since ceased operations and the water use license that was issued is being appealed on, inter alia, the grounds that they are not prepared to mitigate the post operational decant by any other means than evaporation of the water they can collect, even though this will leave the water users lower down without sufficient water and is not allowed in terms of the Best Practice Guidelines of DWA.

Strathrae Colliery

New pits were opened at this underground mine in the wetlands. From the documentation we were able to see at the DMR it is clear that the license was issued 2 weeks prior to the submission of the EMPR. When we made inquiries to the Minister about this, the Deputy regional Manager, who had issued the license, resigned

Mooifontein

The mine is operating without a water use license or NEMA listed activity authorisations. It also mined out a wetland although it was not part of the approved mine plan. They have now stopped mining the wetland and is in the process of applying for a water use license.

Grootpan

This is a small mine next to a very sensitive pan. It was opened without a broad consultative process and closed without even an application for a water use license. According to a report from an adjacent mine's geohydrological study, this mine will decant high sulphate levels into the pan that is classified as irreplaceable in the Mpumalanga Conservation plan. They are refusing to consult with the community on the mine and its closure.

