



Lithgow Environment Group

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Preserving the Balance of Nature

Mr Ken Matthews AO
National Water Commission
95 Northbourne Ave
Canberra ACT 2601

19 February 2009

Dear Mr Matthews

RE: SUBMISSION TO 2009 ASSESSMENT OF NATIONAL WATER INITIATIVE

Thank you for this opportunity to provide input into this assessment of the National Water Initiative. Our submission focuses mainly on the upper Coxs River catchment, which forms an integral part of the drinking water supply for Australia's largest city - the Sydney basin.

Our activities also encompass other parts of the Hawkesbury-Nepean Catchment which impact upon the Greater Blue Mountains World Heritage Area (GBMWA) - including the Capertee River, Colo River, Grose River, Wolgan River, and Wollangambe Rivers.

And our activities encompass parts of the upper Macquarie River system (Murray-Darling Catchment) - including parts of the Fish River and headwaters of the upper Turon River.

Since September 2006 our group has undertaken comprehensive Streamwatch water quality monitoring program at 30 sites in the upper Coxs River catchment for Temperature, DO, pH, EC, Available Phosphate and Turbidity. By comparing these results with neighbouring catchments we have gained a good understanding of the current state of local catchments.

1. CUMULATIVE IMPACTS OF MINING AND POWER GENERATION ON GROUNDWATER AND SURFACE WATER RESOURCES

This issue covers numerous aspects of this assessment, including:

- ground and surface water quality/quantity, and the science that underpins it,
- groundwater and surface water connectivity,
- quality and quantity of environmental flows,
- water supply for major urban centers and competition from other water users,
- land-use planning and environmental impact assessment (EIA) requirements,
- water accounting, measurement and regulatory compliance,
- Conflicts of interest within authorities/agencies, and lack of a 'lead' agency.

Any honest assessment of the upper Coxs/Capertee/Colo/Grose/Wolgan/Wollangambe Turon River catchments must take into account the cumulative impacts that coal mining and power generation have on ground and surface water resources in the Lithgow region. And yet existing catchment management plans and blueprints either don't mention, or seriously downplay, the very existence of the coal mining and power generation industries within these catchments?

Underground coal mining has irrefutably disrupted groundwater and surface water flows within the catchment.

Baal Bone Colliery longwall panels straddle the Great Dividing Range, affecting groundwater flows to Jews Creek (Macquarie/Murray-Darling Catchment), the Coxs River (Sydney Catchment), and the Wolgan River (Hawkesbury-Nepean Catchment). Invincible and Ivanhoe Colliery's also affect both the Murray-Darling and Sydney Catchment.

Angus Place, Springvale and Clarence Colliery's have undermined so much of Newnes Plateau, the catchment of Lithgow's drinking water supply, that plans are afoot to transfer minewater currently flowing east into the Wollangambe and Colo River system, to the west into Farmer's Creek (Sydney Catchment). This minewater water is heavily contaminated with Nickel, Zinc, Cobalt and Manganese which can't be removed by Lithgow's basic water treatment plant.

Lithgow residents have some local sayings including "Who took the 'spring' out of Springvale Creek?", and "Who took the 'brook' out of Fernbrook Creek?" These most definitely do refer to underground mining operations of Springvale Colliery and the old Fernbrook Colliery. More recently Springvale Colliery long wall panel 411 has cracked the bed of the Wolgan River.

Offsite discharges from coal mines and power stations have indisputably polluted surface waters in the catchment with excessive salts and metals.

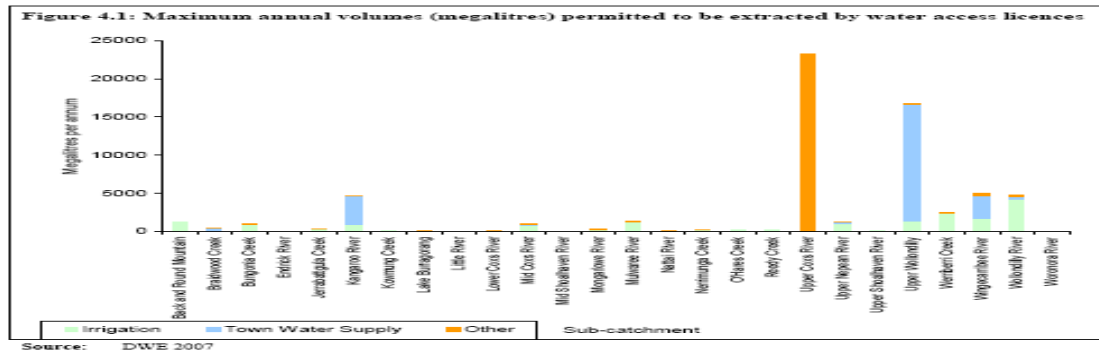
At its birth in Ben Bullen State Forest the Coxs River has a salinity level of 30 $\mu\text{S}/\text{cm}$. Within 15 km downstream at Lake Wallace the salinity has reached 1200 $\mu\text{S}/\text{cm}$, and below Lake Wallace 2500 $\mu\text{S}/\text{cm}$ due to discharges from Wallerawang power station. Meanwhile -

- Invincible Colliery has a licence to discharge 4ML/day into the Coxs R with salinity ranging from 1600 - 1750 $\mu\text{S}/\text{cm}$ during 2007;
- Angus Place Colliery discharges average 1000 $\mu\text{S}/\text{cm}$ into Kangaroo Ck;
- Springvale Colliery discharges average >1000 $\mu\text{S}/\text{cm}$ into the Wolgan River and ultimately the Wollemi National park and the GBMWHA;
- Baal Bone Colliery discharges into Jews Creek are >1000 $\mu\text{S}/\text{cm}$;
- Lambert's Gully Mine discharges into Nuebecks Creek average 1200 $\mu\text{S}/\text{cm}$;
- Pine Dale Mine dumps its saline minewater into old underground mine workings;
- Clarence Colliery dumps minewater with high levels of Ni, Zn and Mn into the Wollangambe River, Wollemi National Park and GBMWHA;
- Canyon Colliery is leaking high levels of Zn and Ni into the Grose R and GBMWHA;
- Mt Piper Power Station generates 16 ML/year of brine at 115,000 $\mu\text{S}/\text{cm}$, or three times saltier than seawater, which must be disposed of in the catchment;
- Wallerawang Power Station discharges high volumes of cooling tower blowdown water with a salinity >2000EC into the Coxs River below Lake Wallace;
- Kerosene Vale Fly-ash Dam discharges water at 1000 $\mu\text{S}/\text{cm}$ into Sawyers Swamp Ck;
- Both Mt Piper and Kerosene Vale Fly-ash Dumps are unlined and are known to be contaminating groundwater aquifers with high levels of Boron, Fluoride and more.
- Lithgow, Wallerawang & Portland STP effluent, and other industrial discharges.

Whilst local long wall mines have Subsidence Management Plans (SMP's), water quality is not an issue that is considered? Other mines have Community Consultative Committees (CCC's), but community representatives are discouraged from raising cumulative water quality issues about individual mines, or other mines operated by the same company?

The insatiable cooling water demands of Wallerawang (1000MW) and Mt Piper (1400 MW) Power Station's place huge demands on water entitlements for Sydney's drinking water supply. In fact these two power stations hold the single biggest Water Extraction Licence of any water user in the entire Sydney catchment.

The orange spike on the graph below (from the *Sydney Catchment Audit 2007*) represents Delta's annual Water Extraction Licence from the Coxs River, currently 23,000 ML/year.



In addition Delta Electricity takes a further 8000 ML/year from the Fish River and Murray-Darling Catchment. The capacity of Oberon Dam is currently at 17%. Delta's insatiable water demand is placing the timber industry in Oberon at risk of running out of water.

And many millions of litres of minewater are being extracted at unsustainable rates from groundwater aquifers beneath Newnes Plateau to further prop up Delta Electricity's insatiable cooling water demand, threatening to dry up and kill groundwater-dependent Endangered Ecological Communities of Blue Mountains sedge and shrub swamps.

Planning laws in NSW do not take cumulative groundwater or surface water impacts into consideration before approving new developments, or Extending and Modifying existing developments. 15 Major Projects have been approved in the upper Coxs River catchment in the last 5 years (see below), including but not limited to -

- Extension Invincible Open Cut Mine (P 07_0127) to 1.2 Mtpa - 4 December 2008
- Extension Kerosene Vale Fly-ash Repository (07_0005) - 26 November 2008
- Modification Lamberts Gully Coal Mine (06_0017_MOD 1) - 3 September 2008
- Extension Mt Piper Ash & Brine Disposal (DA MOD-77-9-2007-i) - 23 March 2008
- Modification Pine Dale Mine (461-04MOD) 75% increase in production -17 March 2008
- Extension Invincible Colliery Auger mining (05_0065 MOD 2) - 6 December 2007
- Centennial Ivanhoe North open-cut mine (MP 05_0103) - 11 April 2007
- Lithgow City Council Solid Waste Landfill (DA No. 388/05) - 5 December 2006
- Centennial Extension Angus Place Colliery (MP 06_0021) - 13 September 2006
- Invincible Open Cut Coal Mine Extension Project (MP 05_0065) - 7 September 2006
- Modification of Mount Piper Power Station (MOD-1-1-2006-1) - 3 June 2006
- Centennial Lamberts Gully Coal Mine Extension (MP 06_0017_) - 12 May 2006
- Pine Dale Mine open-cut mine (DA 461-04) - 14 November 2005
- Extension of Clarence Colliery - 2006
- Sydney Construction Materials Sand Mine - 2006

NSW Planning continues to assume that natural flows and rainfall will dilute any quantity of salts and metals that are dumped into the upper Coxs River. And this despite 12 years of drought, and the fact more and more mining continues to disrupt natural river flows?

2. WATER MANAGEMENT AND PLANNING, OR LACK OF IT.

The Coxs R. catchment is supposedly protected by 2 catchment authorities – Sydney Catchment Authority (SCA) and Hawkesbury-Nepean Catchment Management Authority (HNCMA).

Groundwater and surface water is also variously managed by DPI, DEWR, and a range of other authorities and agencies who only care about the quantity, not the quality of water.

Council's also have some involvement, but Lithgow Council's case it is not part of the solution to water quality problems – it is the problem! It will approve any development regardless of the impact on water quality, and the effluent it dumps from the woefully inadequate Lithgow, Wallerawang and Portland STP's is some of the worst in the Sydney catchment.

DECC appears to be the only agency which has some say over water quality, but appears to have its hands increasingly tied by the demands of political mates and vested interests.

No single authority or agency seems to have overall responsibility for water quality or quantity in the Coxs River catchment?

We believe that the NWC must heed the lessons from Professor Barry Hart's *"Review of the Fitzroy River Water Quality Issues"* after the Ensham minewater disaster in Qld. Some key recommendations which are probably equally relevant to NSW are:

- That Government consider appointing a 'lead agency' to be the responsible 'caretaker' of river health, to develop a 'catchment management plan', and a coordinated catchment-wide monitoring and assessment program.
- That EPA introduce a process of random audits of the laboratories being used by mining companies for their ability to adequately sample, process and analyse water quality samples for heavy metals at trace concentrations.
- That EPA undertake a review of the procedures used to develop "emergency minewater releases" and publish a new set of guidelines on the EPA web site. This review should consider the need for (a) criteria for prioritising the importance of such releases, (b) undertake a risk assessment to assist in developing "emergency minewater releases", (c) a checklist that ensures that all beneficial uses of the receiving waterbody are explicitly considered, (d) a better process for identifying and including key stakeholders in the "emergency minewater release" process, (e) better processes for ensuring the quality of the "emergency minewater releases" developed (e.g. documenting the reasons for various decisions or judgements), and (f) a process for informing the community of the situation associated with potentially controversial "emergency minewater releases".
- That Government develop a set of Emergency Response Principles relevant to the mining industry to be applied in future situations.
- That surveys be undertaken to ensure that the effects of the flushing of higher salinity water on fish (and particularly Fitzroy Golden Perch) spawning and recruitment are measured and the implications for future years published.

3. INADEQUATE MONITORING AND RESEARCH

The situation in the Coxs River catchment is again best summed up in the words of Prof Hart when he said – *"There is insufficient information available to make an assessment of potential adverse effects on other biota such as frogs, platypus and turtles. **The response of relevant Government agencies to assessing the possible impacts of the mine-affected water on the riverine biota has been tardy to say the least.**"*

4. CONTAMINATION OF DRINKING WATER SUPPLIES

Lithgow residents were shocked to read a NSW Health report (see attached) about Nickel contamination of drinking water in a fictitious town called "Sampleton", when they saw the References included 19. *Lithgow City Council Drought Management Strategy*.

This 4 year study clearly relates to the proposed Clarence Colliery Minewater Transfer into Lithgow's drinking water supply, and raises some very serious concerns.

Firstly, when Lithgow Council wanted to add Fluoride to our drinking water in 2007 they asked the people first. So how can they add Nickel to our drinking water and use people as lab rats for 4 years without asking them first, in the full knowledge Nickel levels were exceeding WHO and ADWG upper limits, and in 2004 massively exceeded those limits?

Secondly, that they could base such a study on a totally false premise - that Lithgow was short of drinking water due to drought - which is patently untrue - only the local coal-fired power stations were running short of cooling water.

Thirdly, that a supposedly credible health study would only look at Nickel contamination, and not the cumulative health effects of a cocktail of metals and other contaminants also likely to occur in this mine water, including Zinc, Manganese, Aluminium, Iron etc, oils, and salinity in the order of 12 - 15 X higher than the currently available drinking water.

And lastly, the study proved that older style water treatment plants such as Lithgow's can't safely remove heavy metals like Nickel. So what other contaminants can't it remove?

Lithgow residents currently have some of the purest drinking water in Australia from Farmers Creek Dam and Oberon Dam. Why should we have to drink nickel-contaminated industrial water just because local coal-fired power stations have poorly managed their cooling water supplies?

Meanwhile millions of litres of minewater which should be used by local power stations continues to flow from Springvale Colliery 'emergency discharge' points LDP 4 and 5 into the Wolgan River, the Wollemi National Park, and the GBMWA???

High quality drinking water is an increasingly rare commodity, and must be protected and used as drinking water, not industrial purposes. Recycled and minewater should be used by industry.

5. INADEQUATE LICENCE LIMITS, REGULATION AND ENFORCEMENT

Since September 2006 the Lithgow Environment Group has been monitoring water quality at some thirty sites in the upper Cox's River catchment. Volunteers have identified some alarming water quality issues in various waterways, including:

- **Salinity** levels 80 times higher than natural background levels;
- **Phosphate** levels 500 times higher than natural background levels;
- **pH** levels 1000 times higher than natural background levels;
- **Turbidity** levels 400 times higher than natural background levels;
- **Water Temperature** in industrial discharges 15^o C higher than background levels
- **Dissolved Oxygen** levels as low as 5%, which is lethal for aquatic life.

These results have been reported to and verified by the relevant government agencies, but to date no action has been taken to address the issues.

Breaches of ANZECC (2000) Drinking Water Quality and Ecosystem Protection Guideline upper limits for metals including Zinc, Boron, Nickel, Cadmium, Copper, Manganese and Iron in various waterways in the Upper Cox's River catchment have also been reported.

We are concerned that the degraded water quality may be impacting upon aquatic life, platypus, fish communities and other fauna in the Upper Cox's catchment. LEG has subsequently engaged an independent consultant to undertake further water testing, whose results were consistent with the water testing results obtained by our group.

Our group could not possibly have done more to make the responsible government agencies aware if these water pollution issues, and yet no action has been taken?

We are at the point where legal action seems to be the only option. But why should a small community group have to go to such extraordinary measures to get government to and industry to act in an environmentally responsible manner?

Below is a table showing the number of Incidents of POEO Licence non-compliance for Mining and Power Generation companies in the Lithgow region since 2000. In the last 8 years there have been 1005 licence breaches, the highest for any coal mining area in NSW.

INCIDENTS OF POEO LICENCE NON COMPLIANCE - COAL MINING/POWER GENERATION - LITHGOW REGION: 2000 - 2007

LICENCED PREMISES	POEO LIC. NO.	NUMBER OF INCIDENTS OF LICENCE NON COMPLIANCE								
		2000	2001	2002	2003	2004	2005	2006	2007	Total
Angus Place Colliery	467	2	3	3	2	1	5	7	23	46
Baal Bone Colliery	765	1	2	2	1	1	3	8	3	21
Canyon Colliery	558	1	-	-	-	-	-	-	-	1
Charbon Colliery	528	1	1	-	1	1	2	0	2	8
Clarence Colliery	726	2	3	1	3	13	-	3	13	38
Enhance Place Mine	6312	-	-	1	3	10	-	-	-	14
Invincible Colliery	1095	2	1	1	1	4	1	-	-	10
Pine Dale Mine	4911	1	2	1	1	9	-	17	-	31
Springvale Colliery & Lamberts Gully mine	3607	3	0	1	4	38	394	363	12	815
Cullen Valley Mine	10341	4	1	6	-	-	-	-	-	11
Delta Electricity	766	-	-	-	-	2	3	1	4	10
TOTAL		17	13	16	16	79	408	399	57	1005

These 1005 licence breaches resulted in just 2 prosecutions, and they were for dust and not water pollution. Yet the highest number of breaches (after 'failing to monitor or report as required by the licence' type incidents) related to water pollution?

Of concern is that there are no licence limits for Salinity in the Coks River. Yet the Hunter Valley has a Salinity Trading Scheme which limits salinity discharges to 600 μ S/cm in the upper catchment, and 900 μ S/cm in the mid catchment. Ulan Coal Mine near Mudgee has an 800 μ S/cm discharge limit, as do some coal mines in the Southern Coalfields.

What is required are national standards for the quality of minewater discharges, more accountability, more monitoring, stricter licence standards, licence limits for salinity and other pollutants, more independent monitoring, and more EPA field staff.

LEG could continue, but unfortunately time has beaten us. On closing we believe there is adequate water available for industry, Sydney water users, and the environment - so long as it does not continue to be polluted at present rates.

Yours faithfully

Chris Jonkers on behalf of
Lithgow Environment Group
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