

ABN 182 467 92704

Address all Correspondence to:  
GRCCC C/- Hurstville City Council  
PO Box 205, Hurstville BC NSW 1481

Ph: 9330 6228.  
E: [info@georgesriver.org.au](mailto:info@georgesriver.org.au)  
W: [www.georgesriver.org.au](http://www.georgesriver.org.au)

26 October 2012

The Manager  
Illawarra, Environment Protection Authority,  
PO Box 513,  
Wollongong, NSW 2520

Dear Sir / Madam,

The GRCCC seeks to make a submission regarding BHP Endeavour Coal's application to vary environment protection license No.2504 for their West Cliff mine.

It should also be noted that the GRCCC supports the independent submissions, on the same issue, being lodged by two of its member councils, namely Campbelltown City Council and Wollondilly Shire Council. Having reviewed the application the GRCCC wishes to make the following general comments regarding the application:

- The GRCCC welcomes the strengthening and tightening of this licence and agrees that this is necessary to reduce pollutant loads entering the Georges River from Brennan's Creek Dam.
- The GRCCC supports the inclusion of pollutants (aluminum, nickel, zinc, copper, arsenic, lead and Salinity) in to the monitoring suite. The limits should however reflect the local regional guidelines recommended by the GRCCC or as an alternative the ANZECC Guidelines.
- The GRCCC recommends the following analytes also be considered for testing at this location; Magnesium, Total Kjeldahl Nitrogen (TKN), Ammonia, phosphates, hydrogen cyanide and sulphates and sulphide and Ethoxylates. This has been suggested as these pollutants can indicate alkaline results and may contribute to the "carbonate" issue as identified in the report supplied by EcoEngineers. Ammonia has the potential to be highly ecotoxic.
- The GRCCC would like to see BHP's Environment Protection Licenses reviewed and further refined at the 5, 7 and 10 year timeframes as per Condition 16 – BSO Surface Water Management Plan.
- The Georges River Catchment includes several clean waterways which qualify as near pristine based on River Health Program reference conditions and research, some of which include O'Hares Creek, Madden's Creek, Stokes Creek, Illuka Creek and other areas of the Upper Georges River into which Brennan's Creek flows and their protection from human activity is a constant challenge and vitally important.

- The above mentioned streams and waterways have very high conservation significance, particularly given their close proximity to such a large urban development.
- The network of near pristine streams, creeks and upland swamps of the Dharawal National Park and adjacent areas form the head waters of the Georges River System and as such need to be protected. The condition of the headwaters of the Georges River is of great importance and value to a passionate and large community body within Georges River Catchment. The community expects that the headwaters of the Georges River will be protected.
- The GRCCC has attached its data from the River Health Program for the Wollondilly and Campbelltown Areas which includes Brennan's creek and the results of our most recent testing in autumn 2012 to support our position.
- The GRCCC has also attached its paper (Tippler, et.al 2012) on the development of localised water quality guidelines for the Georges River Catchment as recommended by ANZECC. It is our hope that these guidelines will in time be the standard for monitoring in the upper catchment.
- The GRCCC is pleased that the new license will be enforceable and that the EPA will have a role to play in ensuring compliance.

In relation to specific items within the report:

- In section 4.1 BHP have incorrectly stated that ANZECC guidelines for pH are 6.5 to 9.0. The ANZECC guidelines state that pH should be within the range of 6.5 to 8.0 for a lowland river and 6.5 to 7.5 for an upland river. We question why these figures have been used in the license application.
- The GRCCC recommends the following analytes also be considered for testing at this location; Magnesium, Total Kjeldahl Nitrogen (TKN), Ammonia, phosphates, hydrogen cyanide and sulphates and sulphide and Ethoxylates. This has been suggested as these pollutants can indicate alkaline results and may contribute to the "carbonate" issue as identified in the report supplied by EcoEngineers. Ammonia has the potential to be highly ecotoxic.
- The study conducted by BHP in 2006 on macroinvertebrates in Brennan's creek is now 6 years old and therefore very outdated. Our studies over the last 4 years sampled in Spring and Autumn each year have consistently shown reduced species richness in macroinvertebrate communities at our Brennan's Creek site (site location shown in Figure 2 of the Wollondilly Council technical report – Autumn 2011) and macroinvertebrate data shown in Appendix 1 of the Wollondilly Council Technical report produced for council by the GRCCC and in our data set provided in this submission.
- In relation to section 8.1, the GRCCC would like to know what method was used to sample macroinvertebrates and what taxonomic level was used in relation to the claims of sensitive freshwater taxa such as Mayfly larvae surviving at 2000 - 3000 uS/cm because the taxonomic level has a bearing on tolerance levels. If the AUSRIVAS method was used which models were used?
- The GRCCC would like to know the specific locations and methods used in relation to the gathering of data used as reference site and those that Ecoengineers have referred to in their statements relating to the salinity levels near springs or steams draining Wianamatta Shale without any discharges from the mine.

- Within the Ecoengineers report (Sept 2012) there are many previous studies quoted in the report but not a lot of information about the details of those studies, how long ago and what methods were used. This makes it difficult for the GRCCC to provide an informed comment without any supporting materials.
- The suggestion that the Upland River ANZECC guideline is only arbitrary in relation to EC and that a regionalized approach whereby the whole of the Georges River is classed as a lowland river is flawed. This can not only applied for EC to suit the conditions commonly found on testing, as all parameters would need to be assessed under the same guideline. Obviously this is not an appropriate approach and the GRCCC disagrees with this recommendation.
- The statement in Section 4 that bicarbonate is not a recognizable stressor on the aquatic ecosystems of the Georges River because there is no field evidence to suggest this, does not mean that this is true. A lack of evidence is not a convincing argument. There needs to be evidence that it is not a stressor before this can be proven.
- The GRCCC's testing has shown reduced water quality and macroinvertebrate richness at Brennans Creek compared to our other Wollondilly Sites as shown in the GRCCC's Wollondilly Technical Report (2011). Elevated EC's are detected as far downstream as the Woolwash in the Campbelltown LGA, however due to the dilution caused by inflows from O'Hares and Punchbowl Creeks, elevated EC levels are not detected any further downstream than the Woolwash site. Therefore we do not agree with the assertion that water quality is only compromised to 50 metres down stream of Brennan's Creek dam.
- Due to the naturally acidic conditions of waterways in the upper catchment often with low levels of dissolved oxygen the GRCCC has developed a regional water quality guideline specific to the conditions of the Georges River Catchment. Therefore the GRCCC recommends the guidelines contained in Table 1 of the paper attached by Tippler, Wright and Hanlon (2012), *Development of regional water quality and catchment guidelines for the conservation of aquatic ecosystems: a case study from the Georges River catchment*.
- In summary, as there is a lack of evidence and data available long term, frequent (more regular than monthly - we recommend weekly) on site monitoring into the effects of the pollutants entering Brennans Creek and their potential effects on the ecosystem, we request a rigorous 12 month monitoring program be established which tests for all pollutants listed in the license with results being made publically available via the EPA website. Following the 12 months the GRCCC requests that the data be analysed by the EPA and the licence be revised accordingly. This will also test the Ecoengineers Pty Ltd hypothesis on the toxic effects of bicarbonates and ammonia.

The GRCCC would be happy to discuss any of these comments future and welcomes the opportunity to be consulted as part of this process.

Yours sincerely,



**Alison Hanlon**  
GRCCC Programs Manager.