Hanson Proposal to Expand Operations at Brandy Hill Quarry NSW

I live at 13 Giles road on the western boundary of the Brandy Hill quarry (BHQ), I am currently employed as a high school Science teacher, but I believe my previous employment as professional officer for the Marsupial Cooperative Research Centre at the University of Newcastle, where I worked on reproductive biology of marsupials, is pertinent to my knowledge of the Biodiversity Assessment Report. In particular I have worked with populations of free-ranging koalas and kangaroos, and therefore have first-hand knowledge of the trapping, handling and behaviour of many marsupial species.

I wish to lodge an objection to the proposed expansion of Brandy Hill Quarry (BHQ) on the following grounds

Inadequacy of the Biodiversity Assessment Report prepared by Biosis

Biosis claims that they did not find evidence of *Phascogale tapoatafa* on the site to be cleared. However, Biosis baited their Elliot Traps with rolled oats, honey and peanut butter, but neglected the common addition of sardines to attract animals such as Phascogales, which are carnivores. Phascogales feed almost exclusively in trees not on the ground. Biosis do not make mention of the where the Elliott Traps were placed, but this is typically at ground level. Also the use of Elliott traps, has been shown by many to be generally unsuccessful for catching Phascogales, with cage traps being more successful, especially when compared to small Elliott Traps (Marlow et al 2015). Biosis also used cameras and chicken carcasses to try and find evidence of Phascogales, however, although these animals have been known to eat small live chickens they are also known to avoid carrion (Nowak, 1999). Having lived in the area for 16 years, and taking an interest in the native wildlife, professionally and privately, I can confirm that Phascogales are present on our neighboring property, having observed them feeding in the trees near our house. The lack of success by Biosis in finding Phascogales on the BHQ property was to more likely due to the inappropriate methods and small number of trapping nights than to do with the lack of Phascogales on the BHQ site.

Biosis, seems unable to say if they found koalas present on the BHQ site (Justification column page 46, Appendix 7), but rightly assumes that they are present. Again, I have much first-hand experience in working with koalas (Kitchener etal. 2009) and know that they can be very cryptic and hard to locate, even when wearing a radio collar. Having not actually locating koalas (?), Biosis then assumes that they are not a breeding population as they did not see any mothers with young. It is impossible to understand how they can make this claim. Their success in identifying koalas was no doubt in part due to the time of year that they were making their surveys, four days in August and two in November. They may have had more success if they had used recording equipment in November, but even then from personal experience our local koalas are most obvious in December and January, when the males bellowing is a common occurrence. It has been shown that the bellow vocalisations of males are an indication of breeding activity (Ellis et al, 2011). I have also personally witnessed pre-mating behaviour of koalas within 20m of my house, with a male following a female koala, who was making the typical squawking as she was approached.

Having admitted to the presence of Koalas, they then suggest that koalas found during tree removal be handed over to wild-life carers or an ecologist. In essence they should be relocated. Relocation of this vulnerable species should always be a last resort (Lunney and Matthews, 1997) as Koalas have very specific dietary requirements selecting different species to eat in different areas, even when similar species are present, and even showing preference for particular tress of the same species. There has been a long history of koala relocation in Australia, and while the species has been able to be translocated the outcomes for individuals is not good with 40% of animals dying after such translocations (Short, 2009).

Another vulnerable species not mentioned in the Biosis survey is the Squirrel Glider. I know that they are present in the area, having rescued one from barbed wire on one of BHQ fences that runs along Croft Road. This was then taken to the veterinary surgeons in Raymond Terrace.

How, having not found good evidence of these species for themselves, Biosis can then end by saying that one was present, although not a breeding colony based on no evidence, and the other was absent smacks of ineptitude.

Noise

In a sense of fairness, my husband and I allowed the Hanson consultant to install sensors for noise and vibration measurement at our property, site R09. However, it should be noted that during the week in September 2014 when the sensors were in place, the operations at BHQ appeared to be unusually quiet compared to normal. This also when the predominant direction of wind is from the west, which means the noise is less noticeable. Processing occurs during the night presently, and while not intrusive while the TV or music is playing, when in a silent house, ie when trying to sleep at night, the noise can be quite intrusive. This is made worse in summer when windows are open to cool the house. Our property is located the western boundary of Brandy Hill Quarry, and over the last 16 years we have noticed that the noise is loudest when the wind is blowing from the east which is approximately 60% of the time in January and February, our hottest months (based on wind rose data from the Bureau of Meteorology). Furthermore, closed windows and air-conditioning are not possible as our house is powered by a remote area solar power system, which is not connected to the grid and does not generate enough power for high use appliances such as air-conditioning, and it would be prohibitively expensive to connect to the mains power.

The flowering gums in the area are also frequented by Grey-Headed Flying Foxes. They are present whenever there are flowers present. It would be a shame to see this vulnerable species lose more feed trees in an area distant from more densely inhabited areas when they are already being forced into closer and closer conflict with humans due to the removal of suitable habitat.

Blast

During blast events our entire house shakes and the windows rattle. It disturbs the animals we keep on the property and no doubt local wildlife as well. During the first ten years we

lived on this property, blast events were less frequent and I believe Hanson under-reports the number blasts currently carried out. In the last 6 years, blasting has become almost a weekly event as demand for gravel has increased, and the apparent strength of blast forces has increased to the point where we have seen damage to brickwork, tiles and plaster not seen in the preceding 10 years. If they are to increase the output of the BHQ this will no doubt mean an increased frequency of blasting at the same level of as Hanson try to stay below the dB and wave propagation levels cited in their document. This will no doubt mean further damage to our house. The figures quoted by Hanson of peak particle velocity below 5mm/s were not measured during the time that the equipment was on our property during 2014 , as my husband was home that week and no blasting of the nature currently taking place was carried out during that time.

In conclusion, I wish that the proposal to expand BHQ be denied as Hanson have been dishonest and manipulative in the extreme, not carrying out operations at normal levels during the period when they had commissioned testing for noise and blast vibrations. They also engaged a company to carry out their Biodiversity assessment report based that was not up to the task, cost was probably their main concern in choosing a company. It should be self-evident that the cheaper the Biodiversity Assessment, the less effort and experience will be placed in carrying out the survey. This is favourable for companies wishing to destroy habitat based on a lack of evidence of vulnerable and endangered species that should have their habitat protected. The lack of ability of Biosis to find evidence of species known to be present by locals, is evidence of the poor survey methods used.

1. Ellis, W., Bercovitch, F., Fitzgibbon, S., Roe, P. Wimmer, J. Melzer, A., Wilson, R. (2011) Koala bellows and their association with the spatial dynamics of free-ranging koalas. Behavioral Ecology 22(2): 372-377 Oxford University Press.
4. Nowak, R. (1999). *Walker's Mammals of the World, 6th Edition*. Baltimore.: Johns Hopkins University Press.

5. Short, J. (2009) The characteristics and success of vertebrate translocations within Australia:
   A final report to Department of Agriculture, Fisheries and Forestry
   http://www.wildliferesearchmanagement.com.au/Final%20Report_0609.pdf

6. Kitchener, A.L., Kay, D.J., Walters, B., Menkhorst, P., McCartney, A., Buist, J.A., Mate, K.E., Rodger, J.C. (2009) The immune response and fertility of koalas (*Phascolarctos cinereus*) immunised with porcine zonae pellucidae or recombinant brushtail possum ZP3 protein. Journal of Reproductive Immunology 82(1) : 40–47.