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The Department of Planning  
Attention: Alison O'Reilly

SUBMISSION RE APPLICATION 07\_0103 APEX ENERGY  
EXPLORATION PROJECT

I wish to comment on this Application. I have a well-established interest in the impacts of underground coal mining in the area, having made submissions to the Department in connection with the Inquiry into the Southern Coalfield and the expansion of Metropolitan Colliery. I am a member of the Dendrobium Community Consultative Committee.

In my comments on the Application, page numbers mentioned are those in the Environmental Assessment Report by Olsen Consulting dated March 2009.

**Comments**

p 2. Although the drill sites are mainly near or on existing tracks, and the total area to be cleared is not large, this does not mean that environmental impacts are negligible. As the Google images on pp 20-26 show clearly, only A114, A116 and A118 are on wooded ridges. All other sites are beside upland swamps, and a 50-60m radius of disturbance as indicated on p31 would encroach into the swamps. This means that there would be a significant increase in the existing disturbance, and the additional impacts of compaction and channelled runoff across the surface. Also, while many of the sites lie beside existing fire trails, these trails are not heavy duty access roads. To give the drill rigs and other large vehicles access along them is likely to cause significant widening and disturbance, especially for the work-over rigs (p40). This project will NOT simply operate without any noticeable change in the local environment. Similarly, the comment that these corridors would be used for subsurface reticulation of any developed wells (p9) glosses over the impacts of the traffic needed to dig trenches, lay pipes etc. And as is shown by Figure 3.5 (p32) and the details of sumps etc on p 56, there will be drains, bunds and levelled areas constructed, not just a small area 'cleared'.

p3. Bland comments about 'topsoil to be stored for rehabilitation' and 'sediment controls implemented' are hardly adequate in a serious environmental assessment. If the 'topsoil' is swamp sediment, then storing it will probably cause it to dehydrate and be useless for rehabilitation. Indeed, given that the sumps are to be dug to 2m (p56), the sediment exposed is likely to be sterile, acidic and extremely difficult to rehabilitate. If 'sediment controls' and 'silt fences' (p40) are the often-used green mesh fences and hay bales, then they are ineffective and may contain seed that should not be introduced to the area. And which areas are to be

rehabilitated, and when? The additional comments on p40 and p85 add no useful information about these matters. However, the idea that a sump can be refilled and covered with 'any remnant vegetation' and all will be as it was before the operation, is a dream, not a rehabilitation plan.

p5. The gas generation is predicted to supply only a 15MW turbine. I understand that landfill sites can generate similar amounts, and that established coal seam generation from Appin and Tower mines is closer to 100MW. Even wind farms such as that near Bungendore generate 50MW. I make this comment not to imply that the project is not worth doing, but to emphasise that the environmental impacts of proving and developing it need to be balanced against other considerations than simply greenhouse gas savings.

p28. It is encouraging to see the comments that aquifers will be protected. This obviously applies to aquifers in hard rock, and not the perched aquifers in the sedimentary surface materials (notably the swamp sediments), and care needs to be taken to ensure that these surface aquifers are not depleted (for example, by diversion of water from them during clearing of sites).

p32. There is too little detail here to judge the impacts of groundwater transfer to the surface. For example, there is no indication of how much groundwater make is expected. This is not a small issue. The groundwater is expected to be contaminated, as detailed on p52. If this is to be removed by tanker, where is it to be sent? If extreme rainfalls cause an overflow, what will the impacts on the nearby environment be? While excess make can be counter-acted by conversion to water-based drilling (p 55), the possibility of overflow from the sump needs to be considered.

p38 Obviously the flaring must be continuous while the gas is flowing. What happens if there is a bushfire emergency during this time? How quickly can such a flare be stopped? No comment is made about this on p41 or p45 where fire precautions are outlined.

p 41. I note that the volume and quality of groundwater is not predictable. I am surprised therefore that there is no provision for analysis of the nature or the volume of groundwater extracted. Given the minimal knowledge we have of the groundwater regime of the area, it would seem logical to analyse the groundwater to establish which geological formations are the aquifers for it, and to be sure that there is no contribution from surface or young water. This is an issue that will become important if - as anticipated - the flow of gas is commercially viable, and monitoring and assessment should begin now if the project is approved. I accept that, as detailed on p53ff, the make is likely to be low but suggest that monitoring and assessment needs to be included in the project aims. And I again query the assertion (p54) that near-surface groundwater associated with the Hawkesbury Sandstone hillslopes will be unaffected, when significant disturbance along ridges and on swamp margins will occur.

It would be important also to know the difference in groundwater nature and volume between the extractions from goafs and from unmined seams.

Presumably extraction of gas and water from a goaf would not cause any more subsidence than has already happened during seam extraction. But it would be important to know where any water that had accumulated in the goaf had come from. If extraction is to take place from unmined seams, is there likelihood of sufficient drawdown of any aquifer to initiate any subsidence at the surface or to connect presently-separated aquifers?

p46 I Note that the SCA and DPI-MR, and also apparently WCC, have monitoring roles in environmental protection. It would be helpful to see a clearly coordinated strategy for this monitoring incorporated into the conditions on any approval.

p48 The brief comments on stakeholder consultation give no indication of just how much consultation has occurred. I would hope that the Department has been given more details, so that the adequacy of those consultations can be assessed.

## **Conclusions**

I ask that any approval of this project include conditions as follows:

- a detailed and workable rehabilitation plan be established for each site
- drilling at a site should not commence before the previous site has been cleaned up, re-shaped where necessary, mulched or otherwise protected from rainfall and wind erosion, and seeded or planted to begin re-vegetation.
- extracted groundwater should be assessed for volume, quality and likely geological stratum source
- the proposed sites be re-assessed to prioritise them in order of likely significance so that if possible, fewer sites will be drilled
- a clear coordinated strategy for environmental monitoring by relevant authorities be imposed on the company, with approval for continuing operation dependent on satisfactory environmental management. Ideally, a community consultative committee to involve other stakeholders should be part of this strategy.

Yours sincerely

Ann Young