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Our Ref: 293217.2012
Contact: Graham Matthews 9821 9156

21 December 2012

Mr C Preshaw
Major Project Assessment – Mining
NSW Department of Planning & Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Mr Preshaw

Re: Camden Gas Project – Northern Expansion (Stage 3)
Application Number MP 09-0150

I refer to the recent exhibition of the above-described proposal.

Please be advised that Council considered the matter at its meeting held on 19 December 2012 and resolved the following:

That Council:

1. Opposes the proposed Camden Gas Project Northern Expansion for the reasons outlined in this report.
2. Makes a submission to the public exhibition of the proposed development by the Department of Planning and Infrastructure opposing the proposed Camden Gas Project Northern Expansion for the reasons outlined in this report.

Council has serious concerns regarding the potential environmental impact of the proposed expansion of the Camden Gas Project and considers that its concerns have not been adequately addressed by the applicant. The attached submission outlines in detail the basis for Council's objection to the project proceeding.

Should you require any further information on this matter, please do not hesitate to contact Graham Matthews, Strategic Planner, on 9821 9156.

Yours sincerely

Milan Marecic
Director City Planning

Liverpool City Council submission on proposed Camden Gas Project Northern Expansion

Introduction

The Camden Gas Project (CGP) developed by AGL Ltd has operated on land within the Camden, Wollondilly Shire and Campbelltown City local government areas since 2001. The project currently operates 86 producing Coal Seam Gas wells. An expansion of the project to the south, the Spring Farm and Menangle Park Project, was approved by the then Minister for Planning in September 2008.

The proposed Stage 3 Northern Expansion of the of the CGP (the "proposed development") consists of the development of an additional 11 drill sites, each with up to six well heads, in an area running from Blairmont in the south to Denham Court in the north. While the proposed development is to be located within the local government areas of Wollondilly Shire, Campbelltown City and Camden, two of the drill sites, RA09 and RA03, are to be located within approximately 250m and 1 kilometre respectively of the Liverpool City Council LGA boundary.

Coal seam gas mining is a very new industry in Australia, having a history of only around 11 years. The medium to long term impacts of the industry are therefore largely unknown. The impact of the CSG industry on the Australian environment therefore remains largely uncertain. However, the environmental risks of the CSG mining have been well established.

Council's objection

Liverpool City Council is deeply concerned about the potential impacts of the CGP Stage 3 Northern Expansion. Council formally objects to the proposal and requests that the Planning Assessment Commission issue a refusal for the application described as MP09_0150. Council believes that the environmental and social risks of the proposal, particularly considering its close proximity to existing and planned residential areas, are too high to permit the project to proceed safely.

Proximity to Urban Areas

Taking into account the acknowledged environmental risks associated with coal seam gas mining, along with the uncertainty of the long-term environmental impacts of the industry, Council believes that it is inappropriate for the CGP to be expanded in such close proximity to existing and planned residential areas. Council notes the fact that coal seam gas mining in Queensland is constrained by the Mineral Resources Act 1989, which prevents the development of coal seam gas wells within 2 kilometres of urban areas.

As noted above, two of the drill sites associated with the proposed development would be located within one kilometre of residential land at Denham Court in the Liverpool City local government area. Council wishes to stress that were a similar development to be proposed in Queensland in such close proximity to residential properties that it would be impermissible and would be refused. Council wishes to express its implacable opposition to the proposed development proceeding so close to residential properties in the Liverpool City LGA.

Surface Water

Council notes that the proposed development poses a serious pollution risk to surface water, both within and adjacent to the project area, in a number of different ways. Council believes that safeguards proposed by the proponent to prevent contamination of surface water as outlined in the Environmental Assessment (EA) submitted to the NSW Department of Planning in October 2010 are inadequate. Council also believes that responses provided by the proponent to Agency Submissions made during the initial exhibition of the proposed development in December 2010 which highlighted the risk of surface water contamination also fail to fully deal with the issue.

Council notes that the proposed development is to be located within the catchment of the Nepean and Georges Rivers. Numerous tributaries of both rivers (many of them ephemeral watercourses) run through the project area and are therefore at risk of pollution from the proposed development. Council also notes that the proposed development area is bisected by the Northern Canal, which transfers water from the Upper Nepean Dams to the Prospect water filtration plant, a key asset of Sydney's urban water supply.

The process of coal seam gas mining requires the extraction of highly saline water from the coal seam in order to liberate the coal seam gas (i.e. methane) for extraction. The process of removing the so-called 'produced water' under pressure, its storage, transportation and disposal all pose a risk of introducing highly saline water into the natural environment.

Council is particularly concerned with the proposed storage of produced water at the drill sites in lined but open pits and the consequent risk of overflow polluting surface waters, particularly following significant rain events. The environmental impact of a significant spill event into either the Northern Canal or tributaries of existing river systems would be catastrophic.

Council also notes that, while no part of the proposed development is to be constructed within the Liverpool LGA that council boundaries offer no protection in regard to pollution events. The risks of surface water contamination from the operation of the proposed development therefore apply to Liverpool City LGA in addition to Wollondilly, Campbelltown and Camden LGAs.

Council also notes that the hydraulic fracturing ('fracking') process used in coal seam gas mining requires the stockpiling of particularly corrosive chemicals, such as hydrochloric acid, in large quantities. The spillage of 5000 litres of hydrochloric acid associated with fracking activities in south east Queensland was noted by Campbelltown City Council in its 2010 submission. Other incidents of toxic spills of fracking chemicals associated with coal seam gas mining have also been reported in the media during 2012.

While it is acknowledged that the proponent has agreed to take precautions to minimise the environmental impact of fracking chemical spills, Council is concerned that the environmental impact of a serious chemical spill would be disastrous. The environmental risk posed by the storage and use of large quantities of corrosive chemicals in sensitive environments is unacceptable.

Groundwater

Council has serious concerns regarding the level of risk to groundwater reserves posed by the proposed development. Coal seam gas mining has the potential to seriously impact groundwater reserves both through the introduction of highly saline water to otherwise productive aquifers as a result of the installation and operation of gas wells, and through the introduction of highly toxic chemicals to the water table through the fracing process.

Council notes the concern raised by Campbelltown City Council in its 2010 submission on the proposed development regarding the potential for aquifer interference as a result of the installation and operation of coal seam gas wells, which may lead to the salination of shallow groundwater reserves.

Council notes the proponent's response detailed in their *Camden Gas Project Northern Expansion Submissions Report*, wherein they rely on "the presence of extensive and thick claystone formations in the stratigraphic sequence [which] would hydraulically isolate, and prevent contamination of, shallow aquifers and, therefore, also soils from underlying Illawarra Coal Measures. Accordingly, the limited interconnectivity between surface and groundwater aquifers is unlikely to increase salinity levels in overlying aquifers as a result of the extraction of gas." Council further notes that the proponent has not provided longitudinal evidence to verify the claim that aquifer interference would be "unlikely to increase salinity levels in overlying aquifers as a result of the extraction of gas".

Council is concerned that the medium-to-long term impacts of the extraction of highly saline water from coal seams (as part of the coal seam gas mining process) have not been fully considered owing to the very short timeframe in which the industry has operated commercially. As a result Council believes that it would be reckless to grant approval the proposed development which may have a serious and irreversible impact on groundwater aquifers.

The second source of potential contamination of groundwater is through the introduction of toxic chemicals into the water table as part of the fracing process. Council notes the concern raised by Campbelltown City Council in its submission regarding the project in December 2010. In particular, Council emphasises the concern that "the EA was not considered to have provided sufficient justification for the conclusion that the use of chemicals 'will not result in the degradation of water quality'" (emphasis in the original). The Campbelltown City Council submission also noted that "impacts on groundwaters have been documented in relation to the conducting of coal seam gas extraction activities in Southern Queensland as well as part of the United States."

In the context of the reported environmental impacts of 'fracing fluids' on the natural environment, the proponent's response to concerns raised is considered inadequate. In the *Submissions Report*, the proponent fails to address concerns, apart from emphasising management methods which it claims will recover 100% of the fracing fluid from the coal seam at the completion of the fracing process.

No evidence is provided to verify the proponent's assertion that the use of fracing chemicals "will not result in the degradation of water quality". In the absence of such

evidence, Council must assume that a real threat of degradation of water quality is posed and urges the Planning Assessment Commission to refuse the application for the proposed development.

Gas migration

Council notes the "Peer Review of Groundwater Component of EA" prepared by Worley Parsons and submitted by Campbelltown City Council as an appendix to their submission on the proposed development in December 2010. Council particularly notes the following statement:

Depressurisation of coal seams by groundwater extraction allows the gas adsorbed to the coal cleats to desorb and migrate to the production well for extraction both in the dissolved phase and as free gas. However, at some distance from the edge of the gas field, where the effects of depressurisation are less, the force of buoyancy will overcome that of the pressure gradient. Consequently, these gases may migrate to shallower intervals and potentially discharge to the surface, either through wellbores or via natural geological pathways to surface seeps. Gas migration and seepage to the surface has the potential to affect vegetation die-back, human health and safety risks if gas builds up in concentration.

Council further notes, that while the potential for gas migration for the proposed development was considered to be low by Worley Parsons, that the proponent has not considered the potential impacts, particularly on land "at some distance from the edge of the gas field", which would potentially include residential land in the Denham Court area of Liverpool City LGA.

Council also notes the findings of a recent study conducted by Southern Cross University on the coal seam gas emissions at the Tara gas field, near Condamine on Queensland's Western Downs, which suggests that gas leakage may be far higher than acknowledged by the industry. The researchers involved in the study have indicated that depressurisation of coal seams during gas extraction, combined with the release of gases on account of the changes in the soil structure account for the increased emissions, according to the November 14 *Sydney Morning Herald*.

Council further notes the growing awareness among health practitioners regarding the potentially deleterious effects on residents living in close proximity to coal seam gas mines. Council notes with concern the statement by NSW Health published in the November 17 *Sydney Morning Herald*, which says that "NSW Health is not aware of public health effects that have been caused or exacerbated by coal seam gas drilling in Australia at the present time but *there is insufficient information at this time to be completely satisfied that there is no potential for public health effects caused or exacerbated by coal seam gas drilling,*" (emphasis added).

Council submits that, inasmuch as the potentially serious health impacts on residents living in close proximity to coal seam gas wells are insufficiently understood, that the proposed development should be refused until such time as there is sufficient evidence to demonstrate that there will be no detrimental health impacts of the project on Liverpool LGA residents living near the proposed development.

Greenhouse Gas Emissions

Council notes the proponent's assessment in the EA that fugitive emissions of coal seam gas would account for only 7 tonnes of CO₂ equivalent over the life of the project, and comprise less than 1% of total Green House Gas (GHG) emissions of the total project. A recent study by Southern Cross University researchers at the Tara gas field, as noted above, raises significant questions regarding the veracity of this estimate. Council notes that the Australian Department of Climate Change is currently reviewing the methodology by which it calculates GHG emissions from coal seam gas projects and that it may be that fugitive gas emissions are far higher than predicted – possibly up to 4% of the total gas by volume, as noted by the November 19 *Sydney Morning Herald*.

Subsidence

Council notes that the EA prepared by the proponent for the proposed development has stated that the risk of subsidence as a result of coal seam gas mining in the area is negligible. Council also notes that in its submission on the proposal from December 2010, that Campbelltown City Council indicated that it was unsatisfied with the proponent's analysis, stating, "There is also considered potential for the fracturing to result in subsidence related impacts to extend to the surface as has been documented in regard to longwall mining operations." The proponent failed to make a detailed response to the Campbelltown City Council submission, simply restating their position that the risks of subsidence were negligible.

Ecologically Sustainable Development

Ecologically sustainable development is defined by five principles articulated by the United Nations Report of the World Commission on Environment and Development: Our Common Future, published in 1987 (the "Brundtland Report"). Central to the five principles is the Precautionary principle, which has been defined by The Hon. Justice Brian J Preston, Chief Judge of the Land and Environment Court as follows: "If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation."

In the context of the proposed development, Council believes that the precautionary principle dictates that the assessing authority must not allow the relative lack of scientific certainty of the environmental threats posed by coal seam gas mining to mitigate concern about its potential environmental impact. Sufficient evidence is available to indicate that coal seam gas mining may pose a serious environmental and social risk to the community. Council considers the risks to the natural and social environment of Liverpool posed by the proposed development to be high and the preventative measures advanced by the proponent totally inadequate. On this basis, Council submits that the proposed development should be refused.

Conclusion

Evidence presented by Council creates a strong case against the proposed Camden Gas Project Northern Expansion being granted approval by the Planning and Assessment Commission. The very real environmental risks posed by coal seam gas mining combine with the lack of understanding of the medium to long term impacts of the industry, to make the proposed development an unacceptable risk. Liverpool City Council objects in the strongest possible terms to the Camden Gas Project Stage 3

Northern Expansion proceeding, and recommends that the Planning Assessment Commission refuse the application for the numerous reasons expounded above.