BOGGABRI FARMING AND COMMUNITY GROUP

The Boggabri Farming and Community Group (BFCG) was formed in July, 2016 as a group of local landowners and community members to form a unified voice to identify means through which a co-existence between agriculture and mining could be formed for the benefit of the whole community. Our member base is a mix of farmers, miners, business people and retirees.

The Boggabri Region has a long history in mining dating back to the 1980's and in recent years we have seen a rapid expansion of mining in the area with 4 large coal mines already in production producing around 22 million tonnes of coal per annum. Despite this Boggabri is yet to see the benefits from the recent local mining boom and still relies heavily on its agricultural base. Further, due to the rapid expansion in mining we have lost a lot of this farming base and these are the people who have traditionally supported businesses in Boggabri.

It must be noted that we have had very limited time to fully investigate and understand the project with a 42 days exhibition period. Giving that our application for an extension was denied, we may have additional concerns that arise post submission deadline which should be equally considered.

BFCG are unanimous in the opinion that the Vickery Extension is a tipping point for the region and will push mining to unsustainable levels locally, particularly in terms of impacts to agriculture and the environment. This submission will identify why we as a group **object** to this project.

1.Water

a) Groundwater

Many within our group are groundwater irrigators on the Upper Namoi Alluvium system and have grave concerns about:

Depressurisation of the Upper Namoi Alluvium

It is important to note that this project is bordered on three sides by the high quality and highly productive Upper Namoi Alluvium. Open cut mining will result in increased vertical leakage from the Namoi alluvium to the underlying consolidated material of the Maules Creek Formation. This creates a depressurising effect on the upper Namoi alluvium.
The models in the original Vickery EIS have quantified these losses at approximately 96 ML/annum (Vickery Coal Project EIS section 4 pg 31), however for the expanded mine they are only estimated at an average of 2.55 ML/annum during mining, increasing to 36.5 ML/annum by 2073. (Vickery Expansion Project EIS Appendix A section 5.5.2).

Why does the smaller mine with the smaller footprint have significantly greater leakage from the Upper Namoi Alluvium than the Expanded mine?

How can the modelling be so inconsistent?

The "interpreted" boundary of the Namoi alluvium

Figure 18 of Appendix A illustrates where the proponent has redefined the boundaries of the Upper Namoi Alluvium. The EIS contains insufficient evidence for the realignment of the existing accepted maps. Most of their reasoning appears to be based on a shallow borefield in the Southeastern corner of the project and 7 bores in an area to the west of the project. These are combined with a very shallow (i.e. <3m) TEM survey conducted over the same areas. It appears that they are making the incorrect assumption that the alluvial aquifers only occur under the alluvial topsoil.

This small survey area and inadequate sampling methods provide insufficient data to interpolate a boundary that covers approximately 30 km around 3 sides of the project, and to determine connectivity with the Namoi river which joins approximately 4 kms of the project.

BFCG recommends that a deeper EM survey(i.e. 100m+) be conducted over the whole project and surrounding aquifer boundaries, that then needs to be ground-truthed with deeper bores, allowing accurate interpolation of groundwater boundaries.

From these surveys the proponent has also made the following assumptions (Appendix A. pg.12)

1. Mine-related drawdown would not affect the highly productive groundwater zones of the Upper Namoi Alluvium, because the proposed mine open cut would not intersect saturated alluvium.
2. There may be some seepage loss of groundwater from the alluvium to the coal measures as a result of mining-induced depressurisation of the coal measures. However, that loss is likely to be very minor compared to irrigation use and rainfall recharge due to the low hydraulic conductivity of the coal measures through which the seepage would occur.
3. Similarly, induced seepage loss from the Namoi River is likely to be very minor compared to the total river flow.

These assumptions should be disregarded along with any modelling that is based on them.

In additional regard to point 3 above;

Given that total Namoi River flow is 696 Gigalitres annually (696,000,000,000 L), one would hope that the seepage loss <u>is</u> very minor in comparison!

Reduced licensing requirements for the expanded mine.

Compared to the smaller approved mine, all groundwater licensing requirements have been drastically reduced. NSW Murray Darling Porous rock Groundwater Sources has fallen from a maximum during mining of 700 ML/annum to 517 ML/annum, and Upper and Lower Namoi Groundwater Sources has fallen from a maximum during mining of 78ML/annum to just 5ML/annum.

Why with a larger mine has the water licensing requirements fallen so dramatically?

How can neighbouring landowners have any faith in the modelling when it is so inconsistent?

Proposed Bore Field

Many of the BFCG are industry leading irrigators with decades of experience dealing with high volume groundwater bores. We find it difficult to understand the proponents reasoning behind proposing a group of 10 bores in series. Given that most commercial bores in the surrounding area have a capacity of 5-8 ML/d it can only be assumed that the bore yield in

the given location is expected to be very low. If this is the case, a series of 10 bores will create a “hotspot” and is likely to have a much larger effect than predicted in the EIS. In all likelihood it will drop the aquifer to a point where pumping is no longer possible.

b) Surface water and River

The Namoi River is the backbone of the Namoi valley, stretching from its headwaters at the western slopes of the Great Dividing Range through to its confluence with the Barwon River at Walgett. It is part of the Barwon catchment of the Murray-Darling. The Namoi river is integral to the survival of the towns and rural communities of Gunnedah, Boggabri, Narrabri, Wee Waa and Walgett.

Sediment Water Discharges

The EIS states that water will overflow from sediment dams in the event of rainfall that exceeds 38.4mm over five days (appendix B 10.5). This water will be untested. This discharge will affect river water quality. According to The Bureau of Meteorology data from Boggabri post office, Boggabri has recorded more than 40mm over five days every year for the past 39 years at an average of 17.2 times per year. This means uncontrolled releases of sediment water could be released into the surrounding creeks and Namoi river more than 17 times a year or more than 425 times over the life of the mine. This is outrageous and simply unacceptable.

It is stated that runoff or infiltration from overburden, interburden and coal reject material would be captured in sediment dams. It also says that these materials can be high in Sulfur, Saline, Potentially Acid Forming (PAF) and have concentrations of Arsenic, Molybdenum and Selenium. The CHPP and the western embankment where the coal rejects and overburden will be is placed is adjacent to the Namoi River. The runoff from the western embankment with the above mentioned contaminated material is the same water that will be allowed to leave the site untested if the sediment dams exceed capacity. This is not acceptable and no water that is even slightly contaminated should leave the mine site.

We don’t feel this is alarmist as it has happened already by the proponent who has been found to breach their environmental licence for polluting waterways, and it can be extreme as seen 2015 at the Wollangambe River by Centennial Coal which discharged mine waste into the river after a dam wall burst. Over 200 tonnes of coal fines had to be removed from the river affecting a 10 km stretch and taking 12 months to clean up. See photo.

Connectivity Between the River and Aquifers

The EIS states there will be increased leakage of, or reduced base flow to, the Namoi River due to depressurisation of aquifers. Appendix A section 5.6 attempts to quantify these losses, predicting a long term leakage of 75,000L per day from the Namoi river. We do not see this as insignificant. With the effects of blasting this figure could be extremely understated. The connectivity of the river and aquifers is delicate, and any interference could have exponential consequences.

It should also be noted that the above figure is contradicted in Appendix A 6.4.2.2, where it quotes the average daily leakage of the Namoi River at 18.7ML during the mining period. This equates to 6825.5 ML/year!

c) Rail Line and Flooding

We object to the proposed rail line transecting the Namoi floodplain. Any structure built in this floodplain will concentrate and divert the flow increasing velocity and depth of water. The degree to which this will occur is the big question, made even more uncertain by the lack of detail about the structure in the EIS. It is inconceivable that the proponent would even consider submitting a development application for a rail crossing such as this to the Department of Planning and Environment without detailed design.

That design must include;

- Location of where the rail line is raised with aqueducts, and where it is on earthen embankments.
- The height of both earthen banks and raised line across the whole line.
- The capacity of flows beneath raised sections.
- The spacing between structures.
- The depth of pylons and method of installation. i.e. to ascertain impacts on alluvial aquifers

This raises the question. How can the proponent put forward a detailed model of the impacts of the structure on flooding if they have not designed the structure?

Section 6.2.2 of appendix C states “For the purpose of modelling impacts, it has been assumed that bridges will cross the Namoi River, Stratford Creek and Deadmans Gully”. It goes on to say that a range of openings (bridges and culverts) with embankments will be used, before stating that “The final vertical alignment of the rail and sizing of the openings (bridges and culverts) will be determined during the detailed design stage. These assumptions are simply not good enough for a study into the structure’s effects on flooding with potentially life-threatening impacts. Hence, the flood models referring to the rail line cannot be relied upon and should be disregarded.

The location of the rail line is ill-considered. It was <u>not</u> designed by the proponent to be the area of least impact both to the environment and neighbours, rather it is the location where access through private property could be obtained at least cost to the proponent. This is evident by the “doglegs” in the rail line as it follows property boundaries. The figure below overlays the rail line over an aerial picture of the 1998 flood. It illustrates that it will pass through the point where natural constrictions in the floodplain converge with open free flowing flood country. These “necks” where constrictions occur carry deeper water, and any

further impedance of flood flow in these areas will have an exponential effect on the surrounding floodplain. It must be noted that 1998 was only a moderate flood historically.

Why are the districts of Gulligal and Emerald Hill expected to wear the burden of a 15 km rail line across the floodplain, when the proponents already have a rail crossing over the Namoi River to the North of Boggabri and an established road route to an existing Coal Handling Plant at Gunnedah?

There has been no study into the rail line pylons effect on groundwater aquifers. The initial driving of the piers into the ground could intersect aquifers causing compaction and subsidence. Also, the regular vibrations of the trains travelling the line will affect pore structure in aquifers. There is nothing in the EIS to address aquifer recharge implications, particularly in aquifer compaction and land subsidence.

The flood assessment fails to consider build up of debris in bridges/culverts on the rail line. This must be factored into any modelling used to predict flood impacts.

In 2012 a fully laden coal train derailed from a bridge 800 metres from Boggabri (see photo 2). In the Rail Safety Investigation Report, The Office of Transport and Safety Investigations states the environmental conditions of the rail line involved in this accident as “The

Gunnedah Basin is an area well known for its rich black soil which provides the formation on which the track is constructed. A significant characteristic of black soil is its swelling and shrinking in response to changes in moisture content. In February of 2012 the area experienced a record wet period. This was followed immediately by a significantly dry period which continued beyond November. The consequent extremes of swelling and shrinking would have had a detrimental effect on the track geometry in the area over time."

A rail line transecting a flood plain on the same soil types but under extremely more pressure from flood waters will also have a detrimental effect on track geometry. A derailment of a train over a river and a highway would be catastrophic. Has the risk of track instability and possible derailments due to soil type and flood impacts been considered?

Photo 2: Train Derailment at Boggabri (2012)

The proponent has continually referred to the draft Floodplain Management Plan (draft FMP) in assessing this project. This is an unfinalised plan, yet to be implemented and tested. The correct flood policy to which the project should be assessed is the Water Management Act 2000.

Extreme flooding events, more severe than have been modelled, should also be considered. It is noted that a 3 times 1% AEP was modelled, but this is not enough to determine the Probable Maximum Flood or equivalent extreme event? We have limited flood records of this area and it should not be discounted that we could get worse flooding in the future, especially due to climate change. Extreme flood events are happening all too regularly here and around the world, sometimes with lives lost.

Section 5.2.4 of Appendix C, assumes that due to differences in sizes of relative catchments the Namoi River flood peak will not coincide with peaks from the tributaries (i.e Collygra Creek and Stratford Creek). This assumption is ill-considered and has been proven wrong by past flooding events (eg 1998). Emergency flood releases from Keepit Dam can also delay and exacerbate flood peaks resulting in it coinciding with the tributaries. Coxs Creek is also a major influence on flooding in the project area when its peak arrives ahead of the Namoi it backs up the river increasing flood heights. We suggest the modelling relying on these incorrect assumptions be disregarded and new models with input from locals who have witnessed flooding in the area over many decades should be undertaken.

The proponent is proposing the construction of flood contours to protect the development site. It is noted that these works will have an impact on flood characteristics in the area. The

impacts of increased flood heights and velocities on the properties on the floodplain (crops, livestock, earthworks, infrastructure and houses) will be significantly affected with even a small rise in depth and velocity of floodwater. A rise as small as 10cm could overtop levy banks protecting our houses and wipe out valuable crops/livestock and destroy farm earthworks. It could mean the difference between a farm losing their crop and livestock and expensive damage to farm irrigation earthworks.

It is noted on page 9 of Appendix C that the project does not require a flood work approval under section 90 of the Water Management Act 2000 as it is a State Significant Development. Does this mean that after approval it will be exempt from regulation under the statutory flood management plans prepared under the Water Act 1912 and the Water Management Act 2000?

2. Agricultural Impacts

Section 4.2.1 of appendix R states that "the project is not likely to impact on local farming livelihoods". This statement could not be further from the truth. This submission identifies impacts on groundwater, surface water and flooding, as well as health impacts from particulate matter, blast fumes and noise. All of which individually impact on the livelihoods of local farming families and when combined will have irreversible and everlasting impacts on individuals, agricultural businesses and the whole community.

This project will increase the area of agricultural land lost in perpetuity by an additional 775.8 ha over the existing approved mine. When considering the project as a whole, including offsets, 3,643Ha (9000 acres) of Agricultural land will be lost in perpetuity. This land is not just lost to the farmers that once owned it, it is lost farming families to Boggabri, and lost agricultural production to the region and the state forever.

There have already been more than 70 farms bought by coal mining companies in our region, mainly by the proponent Whitehaven Coal. This land is then mined, used for mine related purposes or leased for agricultural uses. The agricultural productivity of these leased lands are reduced and many of the farming families leave the area and sometimes the industry.

The EIS does not take into consideration the impacts dust from the project will have on surrounding crops, in particular cotton. Cotton is graded post ginning based on a number of criteria, one of which is whiteness. It is highly probable that cotton grown near the project and rail spur will be subject to black particulate matter which will stain the cotton lint resulting in heavy price discounts to the grower.

3.Noise

Again, the EIS for the Vickery Extension has modelling which predicts lower impacts on surrounding private dwellings than the smaller already approved mine. Given that the mine will now include more heavy machinery, a CHPP with associated infrastructure and a rail line and loader we cannot see how this is possible. The majority of this infrastructure is located in the southwest corner of the project boundary, closest to neighbouring residences, yet noise levels at these receivers has apparently reduced. It also appears to fail to consider noise from lighting plants and water pumps, including the borefield and river pump. Other questionable assumptions are included in the modelling such as that half of the dozers are parked up at any given time, whilst a third of all trucks are also stationary.

Once again inconsistencies and questionable assumptions lead us to have no faith in the modelling.

The noise originating from the mine can be of annoyance levels up to 7kms away which has been experienced by previous and current Maules Creek residents. We are concerned how the noise levels are monitored and checked by the EPA. The noise averaging provides no protection for the affected residents rather an escape clause for Whitehaven to comply with regulations.

Boggabri Coal Mine Environmental Assessment states that sleep disturbance levels are 15dBA above background noise level. As our background noise level is 30, why is our sleep distance level given as 52dBA not 45dBA?

Train sound levels are 126dBA when travelling at 50km/hour (Boggabri Coal Environmental Assessment). Measurements for noise at 450m from a railway track show levels of 71dBAs, projected levels through properties are 40dBA. This is lower because the reading is for LAeq 9Hr, or average noise over 9 hours. We do not accept this methodology. If approved we expect to have between five and six train movements a night causing sleep deprivation making the hard, physical day to day activities particularly difficult.

The topography and acoustic attributes of the Namoi Valley must be considered when assessing noise impacts from the Vickery Extension. Acoustics travel up and down the river, especially under inversion conditions.

4.Blasting and Particulate Matter.

We request that as a condition of any approval, the mine is subject to a blast free zone. This would be enforced when winds occur from the NE, E, or SE directions and under inversion conditions. This would help protect most of the neighbouring residences and also the township of Boggabri from fumes.

It must be noted that the extension of the mine to the South will make the township of Boggabri directly downwind of the prevailing SE wind direction. The EIS often refers to Boggabri as being to the west of the project, this is incorrect. It is directly NE from the southern pit and CHPP.

In reference to particulate matter, the EIS predicts no exceedance from the project on private dwellings despite some residences being less than 2km from the project. Yet in the approval for the nearby Maules creek mine the proponent in that case models predicted exceedance at residences over 8 km from the pit with the prevailing wind in the opposite direction. (MCCM Project Approval, properties 279-280) How can the two scenarios be so vastly different? We also have concerns about the vibrations from blasting interfering with aquifers and the river structure, and aquatic habitat.

5. Visual

The waste rock emplacement will be large and visually be an eyesore in an otherwise picturesque rural landscape. The EIS states that coal mines are of “low scenic quality”. This mine is going to be very visible from the Kamilaroi Highway, an arterial highway, travelled

by many tourists and people living further to the west and north. It will bring coal mining in the area to the public, whereas the other mines have been less visible to the public due to being off the highway or underground. This changes the people's perception, landscape and the Boggabri area in a negative way.

The lighting has been identified as a concern for neighbouring farms. We can see the lights from existing mines from much further away and view these as obtrusive. We enjoy the dark skies and star vistas that come with a peaceful rural setting, another attribute that will be lost if this extension is approved.

6. Social / Community

Throughout the Social Impact Assessment it is made evident that there are very low levels of trust and respect for the proponent in the Boggabri community. This is very evident when talking with community members and most businesses people in the area. Comments are often made in respect to:

- Being deliberately mislead or lied to by the company.
- No transparency about projects, even through CCC's
- The poor attitude the company has toward its neighbours.
- The poor environmental record of the company.
- The cutting of corners at its operations resulting in an unsafe workplace.
- Not encouraging the workforce to reside in Boggabri.
- Having company propaganda forced down people throats.
- Not sticking to community commitments made for existing mine approvals.
- The relocation of its offices from Boggabri to Gunnedah and
- The lack of support for local businesses.

The general consensus is that this company no longer has a social licence to operate in this region.

Appendix R, table 3.3 identities relevant Narrabri Shire plans and Approvals. It however fails to recognise the Narrabri Shire Councils Extractive Industry Policy, which amongst other things, identifies a responsibility to:

- Adopt a position requiring that mining proposals are designed to have no final void
- Demand a 'Nil' effect position in regard to the quality of surface water, domestic, stock and irrigation aquifers used by our community.
- Demand a 'Nil' net effect on above ground environmental assets.

7. Heritage/Cultural

The Kurumbede property is going to be partially mined with one outbuilding being demolished and the homestead subject to blasting damage. This property was home to the family of Dorothea Mackellar who wrote poems inspired by this very farm and its surroundings. Dorothea is the author of "My Country" a poem that is now a part of Australia's identity. It was known by generations of her time and is still learnt by children today. Why put at risk a farm and its buildings which has such significant heritage values?

The proponent should not mine Kurumbede, but if it is to be mined then strict measures should be put in place to protect this State Significant Heritage building and the proponent should allow greater access to the public of the significant Kurumbede homestead.

At least 47 Aboriginal heritage sites identified in the project area and immediate surrounds will be disturbed by the Vickery Extension Project. The top and bottom rocks on the river is of great significance to the local Aborigines even today. It is obvious that the river and its rich, abundant wildlife attracted and kept Aborigines in this area and it was a significant and vital area for their people. It has been suggested locally that Aboriginal artefacts have been removed from the mine site and several are at the WHC office in Gunnedah. We feel that this should be advertised so people are aware that this was a significant Aboriginal location and this information made public. The BFCG acknowledges and respects Aboriginal people, their culture and heritage and believe that the proponent should be making more of an effort to bring the importance of this site to the public and do everything they can to protect the land where these important sites and artefacts are found and not remove them.

8. Biodiversity

The large open expanse of the River immediately downstream of the mine site is known locally as "Broadwater". This stretch of water has been labelled by staff from the local department of fisheries as being "one of the most biodiverse sections of the entire Namoi River" and we have concerns for the species of fish, birds and wildlife found here. It is also a Key Koala Habitat. Rivers and riparian areas are a haven for all native animals. Local anecdotes would indicate that many of the sampling studies are extremely inaccurate, the fish study for instance, states that only one Murray Cod was identified in the aquatic survey. Locals who fish regularly on the river near the project area can sometimes catch up to 8 Murray Cod in a 1 km stretch area in a couple of hours. Likewise Koala numbers appear to have been severely understated.

The river near the mine is a naturally deep section of the river, always having significant water even in a severe drought. These sections are drought refuges for fish and wildlife when most of the river is low or dry. The aquatic study is not representative of the fish in this section of the Namoi River. We suggest a more representative study be undertaken prior to any development decision.

Also, the cumulative effect of coal mining in this region will mean that native species will no longer find alternative habitats. The biodiversity offsets do not help biodiversity loss in the vicinity of the project.

9. Proponent (Whitehaven Coal)

In Section 6.1.2. The Secretaries Environment Assessment Requirements (SEARs) requires that the Environmental record of the applicant be provided. The proponent states here that the applicant is Vickery Coal Pty Ltd, despite referring to Whitehaven coal throughout the rest of the document. Further adding that that "no proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources have been taken against Vickery Coal Pty Ltd." This company has only been in operation according to ASIC for 4 months.

Whitehaven Coal is the 100% stakeholder in the project, it is the company that will own and operate the Vickery Mine and it's extension and Whitehaven Coal's environment record **must** be disclosed here.

10. Land Devaluation

One of the unfortunate consequences of living in the vicinity of a coal mine the size of the Vickery Extension is that property values will certainly decrease. The majority of people don't want to live near a coal mine. The effects of this for farmers is compounded as their properties are usually their only assets, their superannuation plan and their legacy and inheritance for their children. Property devaluation effects the ability of farmers to borrow in times of drought and to expand their businesses.
Just as the effects of dust and noise from coal mines are considered and mitigated under VLAMP, so too should land devaluation. Policy must be developed prior to any development consent to ensure that landowners are duly compensated for reduction in land values on what is to be regarded as "mine affected land."

11. Monitoring and Enforcement of EPLs

Numerous times throughout this submission we have pointed to inconsistencies in modelling and poor assumptions for models that have led to understated impacts on the environment and surrounding landowners. We fear that if approved on the basis of incorrect modelling we will be left to suffer the consequences. We have witnessed with existing mining in the area that the regulatory bodies do not have the resources or the power to take effective steps to enforce compliance. Before any approval can be granted we must see rigorous policy and framework that is capable of guaranteeing compliance of EPLs and planning consents.

12. Management Plans

The EIS states that there are several management plans that have yet to be completed. The BFCG requests that these Management Plans be completed and placed on public exhibition prior to any hearings by the planning assessment hearing. These include Management Plans for:

- Noise
- Dust
- Blasting
- Water

13. Independent Planing Commission (IPC) Hearing

BFCG request that the IPC meet with the group members who are nearby landholders and community members before the public hearings to familise them with the area and people. This will hopefully allow them to make more informed decisions.

14. The bigger picture

The latest IPCC report, authored by more than 90 leading climate scientists, has identified that if the world is to limit temperature increases due to climate change to 2%, coal usage worldwide needs to drop to between 2 and 0% of current levels by 2050.

This would indicate a forecast for a decline in worldwide coal demand over the coming decades. The Vickery Extension economic justification however, seems to be based on an increasing global demand into the foreseeable future.

Conclusion

The BFCG is of the opinion that the Vickery Extension Project is too big and too risky for the environmentally sensitive location it is proposed. The proponent has an approved mine which is further from the river, will have less impact on the environment and will be more sustainable for Boggabri in terms of jobs and impacts on the local community.

The proposed rail spur across the floodplain is likely to have devastating impacts on locals during times of floods. The assessments for Groundwater, Surface water, Flooding, Noise and Blasting , Air Quality and Aquatic Ecology contain inconsistencies and such poor assumptions that we can have no faith in their conclusions and recommendations. It is for these reasons that we object to the Vickery Extension Project.