

**THE AUSTRAL BRICK CO. PTY LIMITED**  
**NEW BERRIMA CLAY/SHALE QUARRY – PA 08-0212**  
**RESPONSE TO ADDITIONAL INFORMATION AS REQUESTED BY DP&I –**  
**FEBRUARY 2012**

1. Please justify why the local roads (and corresponding intersections) namely, Cavendish Street, Old Bowral Road, Lyle Avenue, Kirkham Road, Oxley Hills Road and Kiama Street have not been modelled as part of the traffic impact assessment. Justification provided in the EA (sections 5.1.2.3 and 5.1.3.3) is inadequate. You may also wish to refer to Council's submission for further info.

**Response**

*Mr Craig Hazell of Traffic Solutions responded to this request as follows.*

*Information included in **Table 1** has been sourced from Council and includes both traffic counts and existing and proposed heavy vehicle percentages. Kiama Street serves an industrial area, hence the higher percentage of heavy vehicles. It should be noted that neither the Roads and Maritime Services (RMS) nor AUSTROADS nominate a limit on heavy vehicles on roads.*

**Table 1**  
**Existing Conditions**

Road	Location	Survey Date	Existing		With Proposal*	
			Volume	% heavies	Volume	% heavies
Cavendish Street, Mittagong	100m south of Old Hume Hwy	2009	3346 per day (approx. 335 per hr)	9%	3478 (approx. 348 per hr)	12.50%
Old Bowral Road	not available					
Lyle Avenue, Bowral	West of Mittagong Road	30/04/2010	178 per hour (PM)	5.10%	191	12.40%
Kirkham Road, Bowral	North of Wingecarribee Street	30/04/2010	387 per hour (PM)	4.90%	400	8%
	South of Wingecarribee Street	30/04/2010	459 per hour (PM)	3.70%	462	6.50%
Oxley Hills Road, Bowral	East of Kiama Street	30/04/2010	212 per hour (PM)	3.80%	225	9.30%
Kiama Street, Bowral	South of Oxley Hills Road	30/04/2010	36 per hour (PM)	16.70%	49	38.80%

\* At maximum transport level.

*Guidelines shown in **Table 2** stipulate the urban road peak flows as designated by the RTA (now RMS). All of the roads requiring justification currently operate at a very good level of service 'A' with the additional 13 vehicles per hour associated with the Project not expected to worsen the current situation.*

**Table 2**  
**Urban Road Peak Flows**

<b>Level of Service</b>	<b>One Lane (veh/hr)</b>	<b>Two Lanes (veh/hr)</b>
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

*Generally, the limiting factor relating to the capacity of a road network is governed by intersections. Observations along the route did not reveal any intersections with capacity concerns and Frank Iacano from Council has noted that there is no concern regarding congestion of capacity issues along the route.*

*Consequently, it is again concluded there would be is no detrimental impact by the addition of 13 heavy vehicles associated with the Project along the proposed transport route.*

- Please provide additional justification as to how the project's water demand of 8.05ML/yr will be satisfied from the harvestable right of 4.59ML (i.e. confidence in rainfall).

**Response**

*Mr Mark Passfield of Strategic Environmental and Engineering Consultants (SEEC) responded to this request as follows.*

*“SEEC used an in-house water balance spreadsheet known as RATES which uses historical rainfall data for a period of 100 years from the Moss Vale BOM rainfall Station. Various losses are applied in the model. The first 5mm of rain is ignored and then only 60 percent of the rainfall above that is assumed to be captured. The surfaces from which rainwater is harvested are assumed to be disturbed (the quarry extraction area) and, therefore, mostly impervious (hence the 60 percent).*

*Table 3 (attached) displays the spreadsheet and associated outputs with ‘A’ being the Project’s wash down requirements and ‘B’ being the Project’s dust suppression requirements. Both the maximum permissible amount (4.59ML) and 2.9ML are used with the 2.9ML sufficient to permit a 99.9% supply confidence.”*

- Please confirm the AHD for the low flow of the river.

**Response**

*The AHD level for the low flow of the Wingecarribee River has been determined by the top of the Cement Works Dam, currently acting as a weir, located approximately 1.6km downstream from the Project Site (see EA Figure 2.1) at a height of 640mAHD. This level is 5m lower than the proposed lowest level of clay/shale extraction.*

**Table 3 RATES Surface Water Supply Confidence****SEEC RATES IV Results**

Site: New Berrima

Rain station: Moss Vale 68045

Total years: 99.33	Avg annual rainfall (mm): 954.57
Total days: 36278	Max daily rainfall (mm): 422
Total no of days when rain fell: 11614	Longest dry spell (days): 57
Avg days per year when rain fell: 116.9233867	Days when rain > S1 initial loss: 4380
Avg wet day rainfall (mm): 8.16	Avg days/yr rain > S1 initial loss: 44.09544

<b>Input statistics:</b>	<b>Model 1 (4.59ML storage)</b>		<b>Model 2 (2.9ML storage)</b>	
Capacity (L):	4590000		2900000	
Startup % full:	10		10	
Catchment area (sqm):	195000		195000	
Initial loss per day (mm):	5		5	
Runoff percentage:	60		60	
Apply use A on wet days (Y/N):	Y		Y	
Apply use B on wet days (Y/N):	N		N	
Revert to mains at threshold (Y/N):	N		N	
Mains reversion threshold (% full):	0		0	
Overflows into Storage 2 (Y/N):	N		N/A	
<b>USAGE stats (L/day):</b>	<b>Storage 1</b>		<b>Storage 2</b>	
Usage type:	<b>A</b>	<b>B</b>	<b>A</b>	<b>B</b>
January	2000	33400	2000	33400
February	2000	33400	2000	33400
March	2000	33400	2000	33400
April	2000	8350	2000	8350
May	2000	8350	2000	8350
June	2000	8350	2000	8350
July	2000	8350	2000	8350
August	2000	8350	2000	8350
September	2000	33400	2000	33400
October	2000	33400	2000	33400
November	2000	33400	2000	33400
December	2000	33400	2000	33400
<b>Results:</b>	<b>Storage 1</b>		<b>Storage 2</b>	
% of time demand met:	100		99.9	
% of demand supplied from mains:	0		0	
Longest time storage ran dry (days):	0		18	
Avg annual mains demand (L):	0		0	
Avg wet day overflow (L):	536466.24		536704.44	
Avg no of overflow events annually:	35.46763314		35.4978355	
Avg annual supply from rain in (L):	8048410		8032321	
Max daily overflow (L):	48755950		48755950	
Annual demand (L):	8048409.846		8048409.846	