FOLLOW UP REVIEW OF KEY MINING ISSUES DRAYTON SOUTH COAL PROJECT

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Report prepared for Godolphin Australia and Coolmore Australia

Michael White
Resources Consultant

Follow Up Review of Key Mining Issues Relating To The Drayton South Coal Project 2016

PREAMBLE

The original 'Review of Key Mining Issues' was prepared by the author in September 2015 and was included as part of the Darley submission (Appendix A4) to the Review PAC in that same month. A copy of the 2015 report is annexed hereto (Appendix B).

This follow up review also involves consideration of the responses to submissions to the Review PAC, the Anglo American Response to Planning Assessment Commission Review Report and the subsequent Department of Planning Project Assessment and recommended conditions September 2016.

THE AUTHOR

Michael White is a Resources Consultant. He holds an honours degree in Mining Engineering and an MBA. He has over 25 years' experience in operational and technical roles working for major mining companies in Australia and internationally. He has 14 years' experience working in the open cut coal industry in New South Wales and Queensland, including eight years in the roles of Operations Manager and General Manager.

Executive summary

Working from Anglo American's own information there cannot be confidence in the economic viability of the project. The likelihood of delivery of the mine plan as described is questionable, and the accuracy and level of detail of the cost information as currently provided is insufficient.

The key issues still unresolved in this follow up review are as follows:

1. Significant risks exist for the project's ability to deliver the saleable tonnes as per the Anglo American Production Schedule Summary in the EIS Appendix B Mine Plan Justification based on the following:
    a. Previous actual significant underperformance (35%) for the period 2008-2014 when compared to previous 2007 EA production schedule for the same period.
    b. The achievability of the annual equipment production assumptions when compared to the 2012 EA assumptions.

2. Omissions and Errors in the Information Provided

    There is no schedule for the 1.4 million ROM (Run of Mine) tonnes from the existing Drayton mine. This quantity of ROM coal tonnes is missing from the Anglo American Production Schedule Summary in the EIS Appendix B Mine Plan Justification.

3. Drayton Mine and Drayton South Project rehabilitation and closure costs.
    a. The existing Drayton Mine Closure Plan is now finalised. There has not been an independent review of accuracy of provision for closure costs.
    b. With regards to the Drayton South Project there does not appear to be any additional cost allowance for Mine Closure of Drayton South mine area infrastructure.

4. Apparent underestimation of the capital expenditure summary forecast over the life of the mine.

5. Drayton South Project strip ratio (SR) is high compared to other Hunter Valley mines, particularly in the first four years of the project. This is a major cost driver for any open cut mine and will be unavoidable for every tonne extracted from the Drayton South reserves as per this plan.

Key Issue 1: Significant Risk in the Delivery of the 2015 EIS Scheduled Saleable Production

Issue 1a: Current and Past Underperformance as an indicator of future performance?

Figure 1. Mine Actual Performance vs 2007 EA Schedule

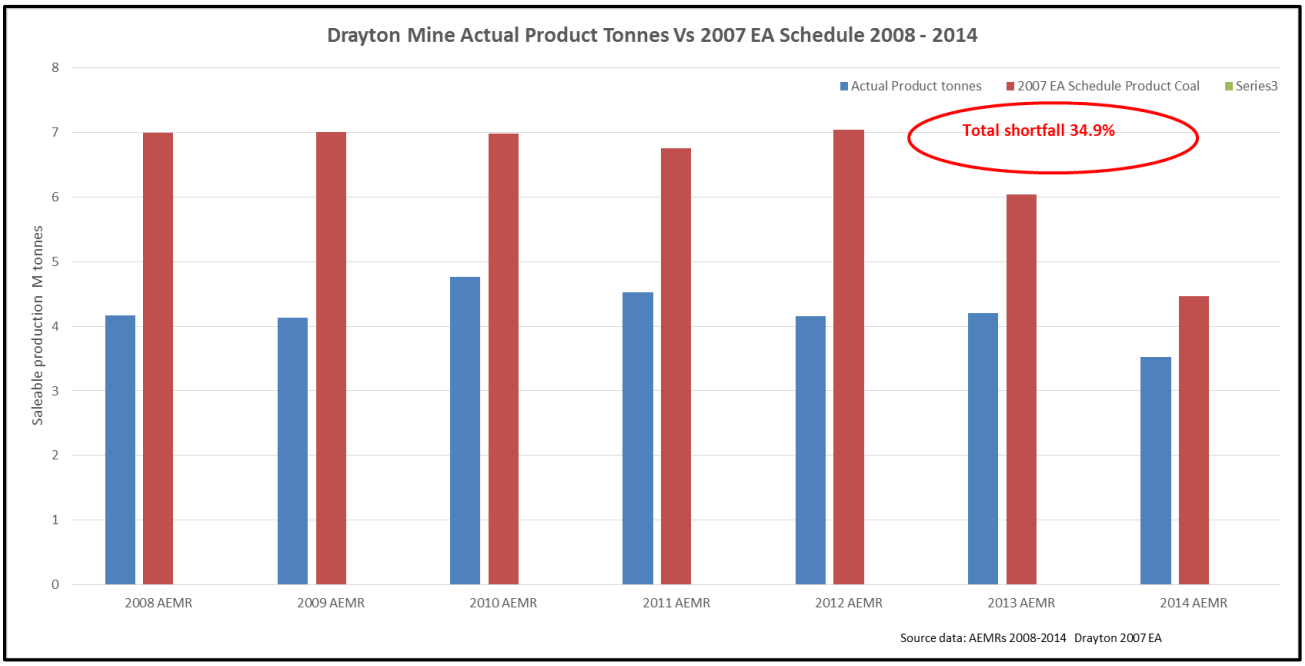
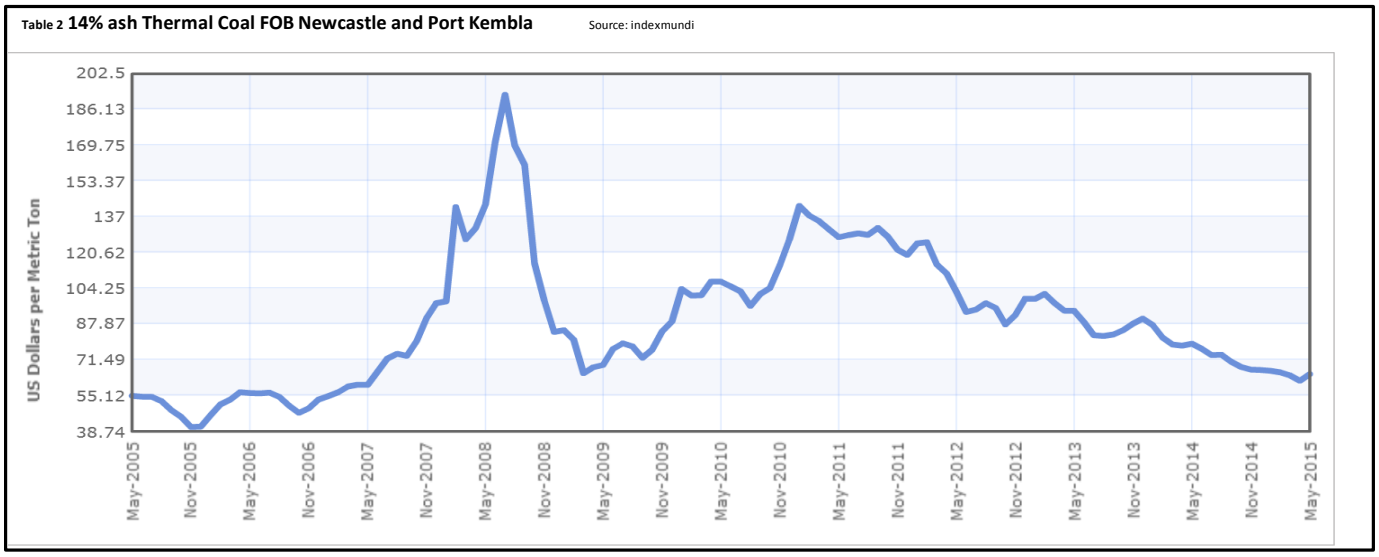


Figure 1 shows that for each year from 2008 to 2014 the actual saleable production was significantly less than the schedule provided in the 2007 EA. The total shortfall in that period was 15.8 million product tonnes or 34.9%. This shortfall occurred during a period of peak and sustained high coal prices when mine operators had strong economic incentive to maximise production levels (see figure 2 below).

The economic analysis for the project should have included a sensitivity analysis for a range of production level outcomes similar to the previous shortfall (35%) identified here. It is understood the current range used for sensitivity analysis was 20%.

Figure 2. Coal prices May 2005 - May 2015.



What happened to the "missing" Drayton coal?

The 2007 EA identified coal reserves at Drayton mine of approximately 52.7 million ROM tonnes. Drayton Mine AEMR information shows that only 35.4 million ROM tonnes were mined in the 2008-2014 period. This would imply that by the end of 2014 there were approximately 17 million ROM tonnes of reserves remaining.

The 2014 AEMR states:

> *As at 31st December 2014 the remaining total JORC resource is 5.961 million tonnes. Of this ~3.5 million tonnes is within the current mine plan with the balance outside the mine plan in the A 173 lease area. Inventory of coal outside of this is subject to economic and mining method assessment. Resources within the mine plan can be mined within the term of the existing MOP.*
>
> *Drayton Mine AEMR 2014 p.9*

Based on the above information 13.5 million ROM tonnes of reserves were "lost" over the period 2007-2014. This represents both a significant loss in asset value for Anglo and the non-realisation of expected royalties for the State of New South Wales from the coal tonnes that were not produced.

The Department of Planning does not seem to be aware of the facts. Note the extract from the current August 2015 DPE Assessment Report Executive Summary below:

> Under the current approval, Anglo is allowed to extract up to 8 million tonnes of run-of-mine (ROM) coal a year until 2017, after which it is required to rehabilitate the mine. However, mining has developed more quickly than expected, and almost all the coal covered by the existing approval has been extracted.

Mining at Drayton mine has in fact been 35% slower than the original 2007 EA schedule. The reason the mine is about to run out of coal ahead of this schedule is because the stated coal reserves have been reduced by about 26% from those stated in 2007.

Issue 1b: Major Equipment Fleet Annual Production Assumptions – are they realistic and achievable?

The EIS identifies the following key equipment to be used in the project:

- One BE 1370 dragline
- Two Hitachi Ex 5500 excavators
- Two smaller (Hitachi Ex 3500 & 3600) excavators for coal and parting removal
- A fleet of dozers
- A fleet of 180 tonne (Cat 789B & C) haul trucks

The productivity of the dragline operation is assisted by cast blasting and dozer push. Both the 2012 EA and the 2015 EIS identified the use of these support methods.

Figure 3. 2015 EIS Production Schedule Summary and Production Profile

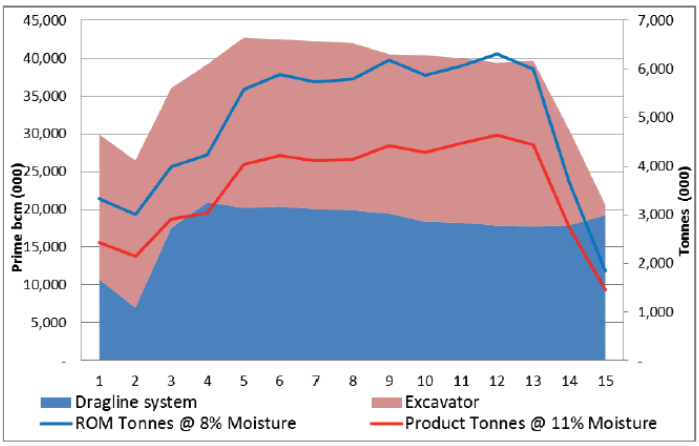


Figure 3 Production Profile

Table 4 Production Schedule Summary

Item	Unit	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Waste																			
Total Excavator System		19,189,293	19,463,461	18,489,023	18,282,915	22,496,182	22,131,752	22,210,278	22,140,561	21,069,137	22,002,975	21,795,782	21,542,513	21,880,704	12,559,839	1,330,867			286,585,282
Total Dragline System		10,744,139	6,994,104	17,563,193	20,923,795	20,209,191	20,391,495	20,036,785	19,854,515	19,447,666	18,382,698	18,209,737	17,857,541	17,757,355	17,912,379	19,218,833			265,503,426
Total Prime Volume	bcm	29,933,433	26,457,565	36,052,216	39,206,710	42,705,373	42,523,246	42,247,063	41,995,076	40,516,803	40,385,673	40,005,519	39,400,055	39,638,059	30,472,218	20,549,700			552,088,708
Rehabilation	Ha			89	75	78	33	85	53	46	94	84	66	84	65	39	49	179	1,119
Coal																			
ROM Tonnes @ 8% Moisture	t	3,336,973	3,000,282	3,986,542	4,230,920	5,574,432	5,891,064	5,729,271	5,787,582	6,183,005	5,871,238	6,058,586	6,309,109	5,993,889	3,641,228	1,851,952			73,446,072
Product Tonnes @ 11% Moisture	t	2,427,292	2,139,498	2,902,513	3,028,508	4,037,260	4,213,496	4,102,818	4,145,766	4,428,418	4,283,330	4,468,643	4,634,008	4,436,258	2,726,983	1,455,436			53,430,227
Yield	%	72.7%	71.3%	72.8%	71.6%	72.4%	71.5%	71.6%	71.6%	71.6%	73.0%	73.8%	73.4%	74.0%	74.9%	78.6%			72.7%

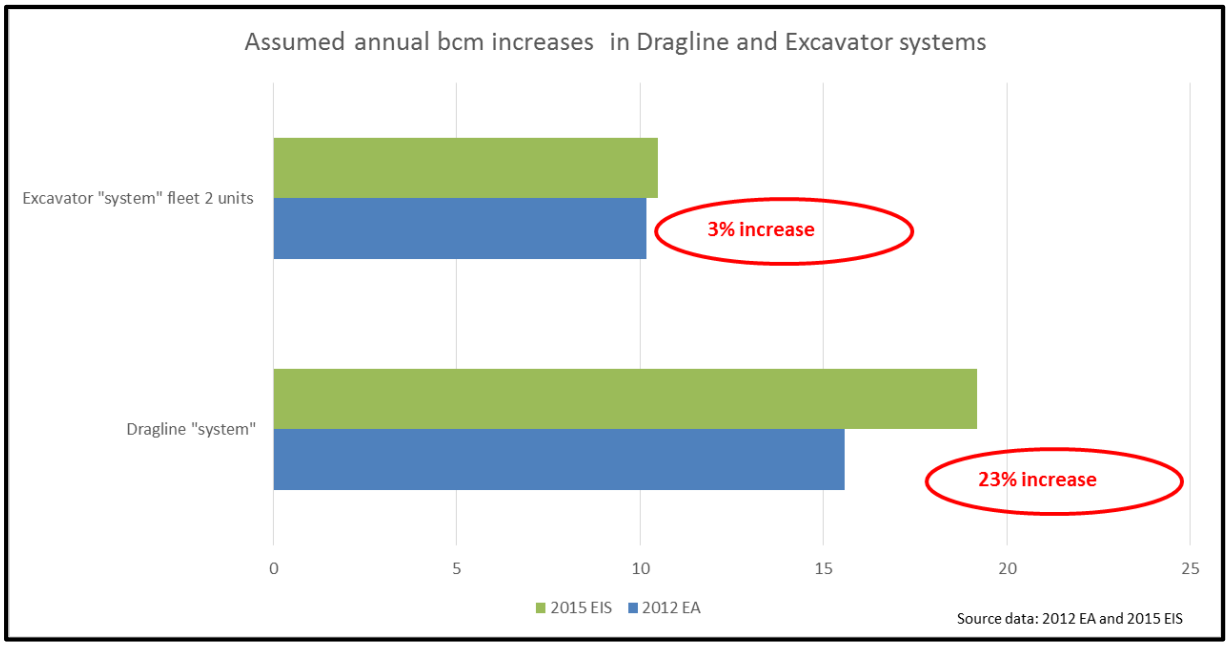
The annual waste movement quantities included in this schedule are labelled as "Total Dragline System" and the "Total Excavator System". It appears that the cast blasting and dozer push quantities have been aggregated with the dragline prime quantities. This may also be the case with excavator quantities being supplemented with smaller quantities by loaders or dozer push.

This aggregated data makes it difficult to compare the assumed annual production by fleet type against industry benchmark information. In order to accurately assess the actual achievability of the fleet assumptions contained in the EIS, more information and greater transparency as to the data and methods used is required.

Comparing aggregated annual production 2015 EIS vs 2012 EA

Another accepted method of benchmarking is internal benchmarking. This compares the performance of the same types of equipment within a mine against itself at different periods of time. Given that cast blasting and dozer push were identified as supplementary methods assisting the dragline in both the 2012 EA and the 2015 EIS, data comparison for the same fleet "systems" in these two Proposals is a valid assessment.

Figure 4. Comparison of waste fleet annual production 2012 EA vs 2015 EIS



This comparison uses data taken from Anglo American's Production Schedule Summary in the 2015 EIS and from the 2012 EA, using five sample years of production data (Appendix F, Table 7-2: Air Quality and Greenhouse Gas Impact Assessment).

An increase of 3% in annual output assumptions for the excavator "system" appears reasonable.

The "dragline system" shows an increase of output assumptions of 23%. This is **remarkable and requires further explanation before it could be accepted at face value.**

Additionally, this increase in output warrants scrutiny in light of statements made in the March 2014 Consequential EIA For Retracted Mine Plan**.** In that EIA it was stated that the loss of Redbank Pit would *negatively* impact dragline productivity for the project. In the current Project Proposal mine plan the Redbank Pit has now been largely removed.

Key Issue 2: Omissions and Errors in the Information Provided

Issue 2: Missing ROM Tonnes in the EIS Production Schedule and Production Profile

The project is described as mining 75 million ROM tonnes. The DPE Project Assessment also concurs with this ROM quantity.

The ROM tonnage scheduled to be mined from the new Drayton South area is approximately 73.5 million tonnes. An additional 1.4Mt of ROM coal is planned to be extracted from the existing Drayton mine area.

It appears that 1.4 million ROM tonnes (equivalent to the Drayton mine ROM tonnage) are missing from the Drayton South Project Production schedule, yet the associated waste volume has been included. This appears to be an inconsistent and incorrect presentation of key information.

The life of mine total ROM coal shown in the Production Schedule Summary is 73.446 M ROM tonnes.[1] This is reproduced as Figure 3 above. The dragline waste volumes shown in Year 1 and Year 2 of the Schedule and Profile must be from Drayton Mine based on the information provided in the EIS that the dragline does not relocate to the new Drayton South area (Whynot Pit) until Year 3.

The 2015 EIS describes continuing mining at the Drayton Mine for a period of 15 years. The 2015 EIS does not provide a schedule for the Drayton Mine tonnes. There does not currently appear to be any binding commitment to the timing of extraction of this coal.

Clearly committing to a production schedule that extracts this Drayton mine coal as quickly as possible should be a compatible goal for all stakeholders. It would maximise product tonnage in the earliest years of the project to help cash flow while also enabling mine rehabilitation to occur as quickly as possible in all areas of Drayton mine not required for ongoing use.

The EIS does currently propose progressive rehabilitation at the Drayton mine over the Year 1-Year 5 period.[2] The 1.4 million ROM tonnes at the existing Drayton Mine appear to be mined in the first 4-5 years from the existing Drayton mine. It is unclear why this is projected to take so long to accomplish. It is noted that some of this activity is mining into old rehabilitated areas and also mining through the site industrial dam (after it is emptied).

[1] EIS Appendix B Mine Plan Justification p. B-15.
[2] EIS Main Report, Section 3 Project Description Figures 3.11-3.13, pp. 77-79.

Key Issue 3: Drayton Mine and Drayton South Project Rehabilitation and Closure Costs

Drayton Mine Closure Costs Have Not Been Independently Verified

In November 2015 the Department of Planning and Environment approved the existing Drayton Mine finalised Mine Closure Plan. Mine closure costs for the existing Drayton mine are identified in the EIS as $66M. The accuracy of this cost provision had not been assessed by DRE as at 30 October 2015:

> The estimated $66 million rehabilitation amount as identified by the Applicant in the EIS for the rehabilitation of the existing Drayton mine has not been provided by the Applicant to DRE for assessment. DRE cannot provide any further comment as to whether this estimated cost is adequate.
>
> DRE response to Review PAC Questions 30 October 2015
> Review PAC Appendix 5 pdf page 14

Deficit of Large Amount of Inert Material for the Management of Spontaneous Combustion

Spontaneous combustion of carbonaceous material related to the Greta coal measures mined by Drayton Mine is an ongoing problem and will continue to be so during mine closure and final rehabilitation. The accepted management method for treating this carbonaceous material is to bury it by covering it with between 2metres and 5 metres of inert material.

The table reproduced below is from the current MOP and shows both the planned production and consumption requirements of inert material

Table 13 Projected Inert Production and Requirements

Year	Additional Rehab Area (Ha)	Inert Mined in Year (BCM)	Inert Required Each Year (BCM)	Comments / Explanation
Start of MOP (Jan 2015)	-	1,620,000		Stockpiled
2015 Dec	108	2,010,000	2,384,800	Excludes 53 Ha already capped as of 30/04/2015.
2016 Dec	86	2,420,000	1,900,800	
2017 Dec	106	7,290,000	2,340,800	All active pit operations finished.
2018 Dec	241		3,186,480	Washplant, ROM and South Pit Rehabbed
2019 Dec	143		129,060	Maintenance Bay, offices, EN and SC rehabbed. All area within lease boundaries rehabbed.
End of MOP	-			
Total Volumes		13,340,000	9,941,940	

Anglo Coal Drayton Mining Operations Plan 2015-2020 p.34

Mining operations ceased in late 2016. Even if one were to assume that the 2016 mining target for inert material had been achieved, there remains a deficit of 3.89 million cubic metres of inert material required for rehabilitation in 2017 and 2018. This will not now be produced as a by-product of coal mining. It must be produced separately and will be at a much higher cost.

The situation should Drayton South be approved

The DPE Assessment Report August 2015 for the Review PAC and the Anglo Response to Submissions included an additional option (Scenario 4) for minimising final voids at the existing Drayton mine that had been developed and it will apparently be required to be adopted if the Drayton South Project is approved.

If the Project proceeds the Mine Closure costs do not appear to change ($66M in real dollar terms) and occur in 2031.This raises two issues:

1. Without independent verification, how is the adequacy and accuracy of the $66 million estimated cost of the existing Drayton Mine Closure Plan proven?

2. If the Drayton South Project proceeds, a significant amount of additional infrastructure will be built. The current Mine Closure Plan does not quantify or account for the further costs involved in closure and removal of this additional Drayton South infrastructure.

Key Issue 4: Underestimation of required Project Capital Expenditure

EIS Appendix E Economic Assessment p. E-24.

Table 4.2 – Summary of Capital Expenditure for the Project

Capital Expenditure	$M
Boxcut	3
Dragline	34
Power Supply	7
Sound Attenuation Equipment	8
CHPP	16
Water Supply	6
Site Communications	1
AGL Macquarie Conveyor Cutting/Connection	1
Plant Control systems/IM	0
On Site Civils (Inc. Haul Road)	22
Fuel and Lubrication Systems	1
Construction Facilities	1
Edderton Road Relocation	12
Land Acquisitions	2
Project Services	0
Contingency (15%)	17
Total	**131**

There has been a significant capital reduction of $354 million in the current Proposal when compared the previous proposal.

The 2015 EIS contains some information as to how this is achieved:

> *"Sustaining capital spend is largely related to fixed infrastructure refurbishment and capital equipment replacement. The shorter mine life resulting from constraining the resource extraction will lead to a reduced sustaining capital spend. In addition, the prevailing market conditions will drive a number of decisions regarding sustaining capital timing and size. In particular, mobile equipment replacements are now assessed not only in terms of extended operating life but also against the very strong, low hour, second hand market."* [3]

[3] EIS 2015, Main Report, pp. 3-18 and 3-19.

New mining equipment does not appear to be accounted for, and the EIS document states that existing mining equipment will be utilised for the Drayton South Project. The bulk of equipment to be used for the Drayton South project is not new, and will require ongoing replacements over the life of the project if it is to operate effectively and efficiently. This would likely be required across a full range of equipment from excavators and trucks, dozers, light trucks and light vehicles right down to minor capital items including pumps, welders, generators and tools.

Key production equipment like excavators and trucks would be expected to accumulate at least 6000 engine hours per year per machine. For a 15 year mine life this makes 90,000 hours required. This exceeds the typical planned life for this type of equipment and this project is not commencing with a new equipment fleet.

The Summary of Capital Expenditure table does not account for equipment replacement capital.

There is an allocation for $34 million for the dragline. It is scheduled for a major rebuild in the first two years of the project and will require further major maintenance within the 15-year period.

There is also $16 million allocated for the existing CHPP (Coal Handling & Prep Plant).

Excavators

It is believed that the existing Hitachi Ex5500 excavator fleet is at least six years old and that at least one of these two machines will need to be replaced during the project life.

A new replacement machine (Hitachi Ex 5600) would cost approximately $12 million.

Trucks

Cat 789 truck replacements will also be required during the life of the project. A new Cat 789 with noise attenuation would cost approximately $4 million per truck. Assuming that only half the Cat 789 fleet required replacement during the project life this would amount to a capital cost of $52 million.

Wheel size increase on Cat 789 trucks

The project intends to fit larger tyres and rims to some of the trucks to enable them to haul coal 13km to the Coal Preparation Plant. Changing the wheel sizes on the Cat 789 trucks would be typically capitalised and this cost for rims and tyres is estimated at approximately

$360,000 per truck. Assuming that at least half of the fleet (13 trucks) would need to be converted this would amount to a capital cost of $4.7 million.

Other annual capital requirements

Minor annual capital is always required, typically for items such as pipelines, in-pit haul road extensions, power line and sub-station moves, smaller equipment replacements and light vehicle replacements. There appears to be no allowance for these items in the EIS. If tightly managed, a conservative estimate for the cost of these items ranges from $1 million to $5 million per year. Assuming that minor capital per year averages $2.5 million and no minor capital is spent in the final two years of the project, then this would amount to $32.5 million (13 x $2.5 million).

Required Additional Capital

Excavators	$12m
Trucks	$52m
Wheel size increases on Cat789 trucks	$4.7m
Other annual capital requirements	$32.5m
Total capital currently excluded	**$101.2m**

The above list is not intended to be exact or complete for the Drayton South Project but it clearly illustrates that the real capital requirement for the project is likely to be significantly greater than the forecast $131 million.

It is acknowledged that purchase of low hour second hand equipment would reduce the capital requirement when compared to new equipment cost. That said it is also believed that the above list is very conservative in its estimate of the additional capital required and not evidently included in the Project Capital estimate.

Anglo Response to this Issue

The responses to the key mining issues raised are contained in section 3.1.4 of the Anglo document *Response to Submissions to Review Planning and Assessment Commission* provided to the Review PAC on 16 October 2015.

4. Project capital costs appear to be understated

The project description and capital required for the project reflects the capital requirement to commence operations and achieve design output. This is the $131m referred to by Mr White in his presentation. The nominated 'project capital' period is about two years and in some respects the project capital is overstated by the inclusion of possible future CHPP upgrade costs. Ongoing stay in business capital beyond the two year project period along with operating costs are not fully disclosed in the EIS as a matter of commercial confidentiality. Costs associated with potential future equipment management and strategies are continually assessed by Anglo American as noted in the response above under response 1c). The decision to hire, buy, or continue to run the existing equipment is one that will be made as the mine progresses based on a range of market and commercial factors at the time.

It is noted as a consequence of the current down turn in the mining industry capital costs for mining development are static or reducing, and are unlikely to rise in the scheduled development time frame as suggested by Mr White.

Drayton South Review PAC Appendix 5 pdf pages 113-117.

The following commentary in the 2015 EIS appears to contradict the two year nominated 'project capital' period in the Anglo response to the Review PAC.

'The incremental capital costs over the life of the mine (including contingencies) are estimated at $131m….' (2015 EIS Appendix E p.E-24)

The Project capital is understated – This Issue Is Unresolved

Anglo has not fully disclosed all "stay in business capital" in the EIS. Further, it is unclear whether or not this undisclosed capital has been included in economic analysis of the project.

Savings in Bulk Earthworks Capital are no longer valid

A large element in the project capital reduction of $354M between times of the 2012 EA and the 2015 EIS was achieved by the use of the Drayton Mine fleet and workforce for bulk earthworks in the construction of the transport corridor and other earthworks.

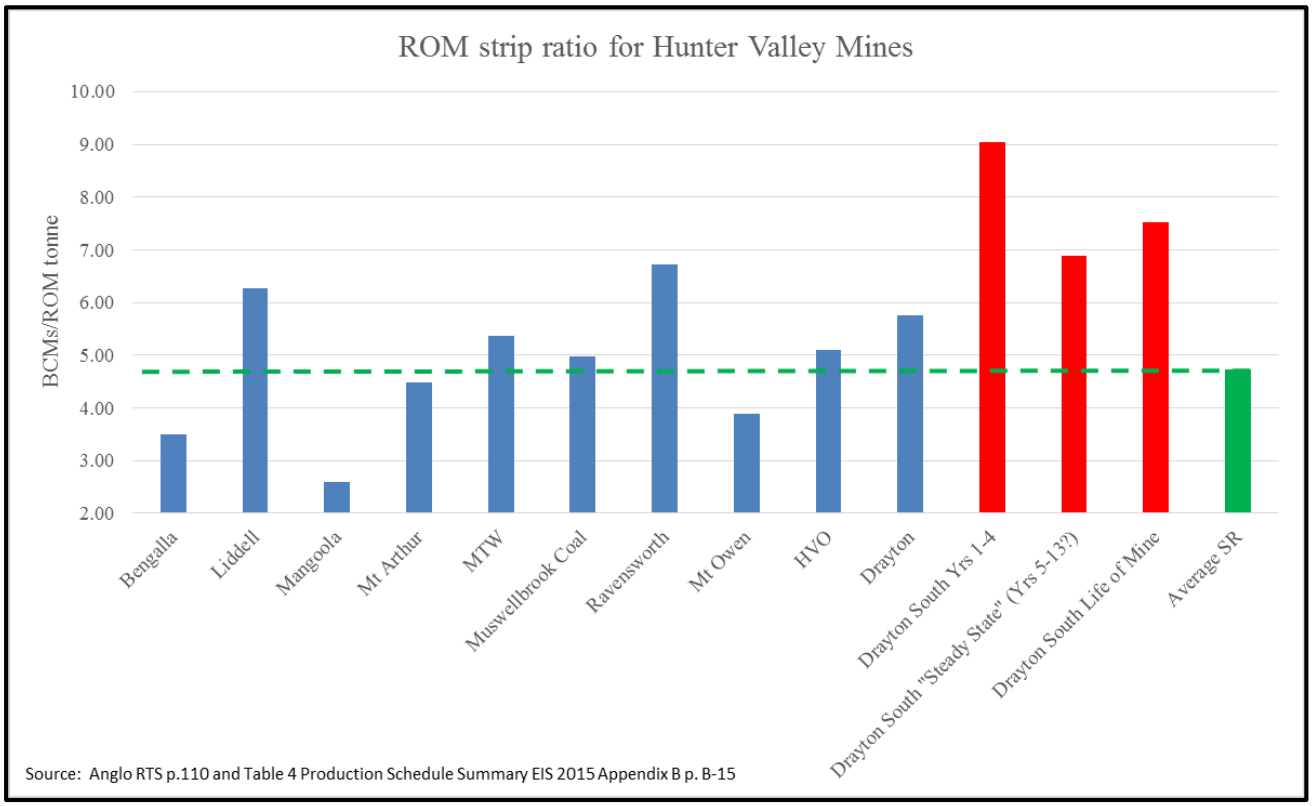
This capital reduction is unlikely to be still valid given the mine has now closed and the workforce has been retrenched.

Key Issue 5: Drayton South Project Strip Ratio (SR) & the Potential Impact on Saleable Coal Cost per Tonne

The EIS expresses the strip ratio as the quantity of bank cubic metres that need to be mined per tonne of ROM coal. Figure 5 below shows the ROM Strip Ratio for Hunter Valley Mines. From this table the following information is clear:

- Years 1-4 of the Project Mine Plan have an average SR of 9.04. This is 92% higher than the average SR for all mines shown of 4.72.
- The life of project average SR is 7.53. This is 60% higher than the SR average across all mines shown

Figure 5 ROM strip ratio for Hunter Valley Mines 2013-2014



The following example illustrates the unmitigated impact of this strip ratio difference on mine costs/ROM tonne and product tonne. This example is modelled using similar proportions of dragline and excavator/truck waste movement as the Project. The assumed yield is similar to the Project. The cost information provided is for example purposes only.

Example Mine A with bcms/ROM tonne SR at 4.72 (All mines average SR)
Waste movement: 50% dragline and 50% by excavator/truck
Yield: 73%

Assumed direct cost/bcm including blasting	$2.50
Direct waste removal cost/ROM tonne	$11.80
Direct waste removal cost/product tonne	**$16.16**

Example Mine B with bcms/ROM tonne SR at 7.53 (Drayton South average SR)
Waste movement: 50% by dragline and 50% by excavator/truck
Yield: 73%

Assumed direct cost/bcm including blasting	$2.50
Direct waste removal cost/ROM tonne	$18.83
Direct waste removal cost/product tonne	**$25.79**

Mine A vs. Mine B
Difference in the direct waste removal cost per product tonne **$9.63**

Assuming all other costs at both mines are equal, Mine B would need to reduce its other costs by **$9.63/product tonne** to offset the SR impacts and achieve the same cost per product tonne as Mine A.

This demonstrates that Drayton South faces a significant cost challenge when compared to its industry peers as a result of the high Strip Ratio of the mine. This is unavoidable because it is a feature of the resource and will be present for every ROM tonne produced in this plan.

Conclusions

The likelihood of delivery of the plan as described is uncertain. The accuracy and level of detail of the cost information as currently supplied is inadequate.

The implications of these issues for the economic viability of the project should have been resolved before the PAC could be satisfied that it can make an informed and proper assessment of the risks and merits of the Drayton South Project.

References

- Anglo American Response to Planning Assessment Commission Review Report Drayton South Coal Project May 2016
- Anglo American Response to Submissions to Review Planning and Assessment Commission 16 October 2015 *(Drayton South Review PAC Appendix 5 pdf pages 113-117)*
- Drayton Mine AEMRs 2008-2015
- Drayton Mine Extension Background Document for Anglo American Coal December 2014
- Drayton Mine Extension EA August 2007
- Drayton Mine Operations Plan for the period 1 July 2015 – 30 June 2020
- Drayton South Coal Project Consequential EIA for Retracted Mine Plan March 2014
- Drayton South Coal Project EA November 2012
- Drayton South Coal Project EIS May 2015
- Drayton South Coal Project Response to Submissions July 2015
- DRE Response to the Planning Assessment Commission 30 October 2015 *(Drayton South Review PAC Appendix 5 pdf pages 7-16)*
- NSW DPE Major Project Assessment Drayton South Coal Project July 2014
- NSW DPE Recommended Development Consent August 2015
- NSW DPE Recommended Development Consent September 2016
- NSW DPE State Significant Development Assessment Drayton South Coal Project (SSD 6875) Final Assessment Report September 2016
- NSW DPE State Significant Development Assessment Drayton South Coal Project August 2015
- Planning Assessment Commission Drayton South Coal Project Determination Report October 2014
- Planning Assessment Commission Drayton South Coal Project Review Report December 2013
- Planning Assessment Commission Drayton South Review Report November 2015

List of Appendices

Appendix A: Curriculum Vitae for Michael White
Appendix B: Review Of Key Mining Issues Drayton South Coal Project 2015, September 2015

APPENDIX A

CURRICULUM VITAE FOR MICHAEL WHITE

ACADEMIC QUALIFICATIONS

Bachelor of Engineering (Mining), Honors II
University of Sydney, 1979-1982

Masters of Business Administration
Deakin University, 1992-1995

Graduate: Australian Institute of Company Directors 2014

EMPLOYMENT HISTORY

November 2014-Present

Resources Consultant (self-employed)

Michael is consulting to the mining and business community utilising more than 25 years' experience in the resources sector. He has senior operational and technical experience across a range of commodities which include manganese, diamonds, metallurgical coal and thermal coal. He has remote site and international experience in senior roles as well as experience with the operational commencement of major new projects in diamonds and coal.

His career has seen him involved in successful interactions with traditional owners, government representatives and NGOs in Arnhem Land, Arctic Canada and NSW.
During his 24 years with BHPBilliton Michael has also had significant industrial relations experience including leading the Enterprise Agreement negotiation process on three separate occasions.

BHP/BHPBilliton May 1990 – July 2014

BHPBilliton Mt Arthur Coal **Project Leader**
August 2013 – July 2014
Mt Arthur Coal Enterprise Agreement 2014

BHPBilliton Mt Arthur Coal **General Manager**
September 2007 – August 2013
Operational responsibility for the delivery of safety, tonnes, cost and a stable platform for ongoing growth
This coal mine became the largest single open-cut coal mine in the Southern hemisphere

BHPBilliton Mt Arthur Coal **Operations Manager**
September 2005 – August 2007
Responsible for mining, maintenance and coal processing at Mt Arthur Coal

BHPBilliton Mt Arthur Coal **Business Improvement Manager**
January 2004 – August 2005
Responsible for all aspects of business improvement at Mt Arthur Coal

BHPBilliton Hunter Valley Energy Coal **Manager Operating Excellence**
September 2001 – January 2004
Responsible for the roll-out and success of the Operating Excellence program across Hunter Valley Energy

APPENDIX A

BMA Coal Queensland **Manager Operating Excellence**

June 2001 – September 2001

Responsible for the Operating Excellence program for the asset. This was comprised of seven open cut mines, an underground mine and a port facility

Peak Downs Mine, BMA Coal **Operating Excellence Manager**

June 2000 – June 2001

Responsible for the implementation of the Operating Excellence program at Peak Downs Mine

Ekati Diamond Mine, BHP Diamonds Inc, Canada **Manager – Engineering Services**

November 1998 – May 2000

Responsible for all aspects of mine engineering, geology, geo-technical, environmental and civil engineering projects

Ekati Diamond Mine, BHP Diamonds Inc, Canada **Chief Engineer**

April 1998 – November 1998

Responsible for all aspects of mine engineering, geology and environmental and civil engineering projects

BHP Minerals, BHP Manganese, Groote Eylandt, Australia **Production Manager**

1 December 1995 – 30 March 1998

Responsibility for Mining, Ore Processing, Product Haulage, Ship loading/Port and Environmental management

BHP Minerals, BHP Manganese, Groote Eylandt, Australia **Acting Human Resources Manager**

1 September 1995 – 30 November 1995

BHP Minerals, BHP Manganese, Groote Eylandt, Australia **Technical Services Superintendent**

1 October 1993 – 1 September 1995

BHP Minerals, BHP Manganese, Groote Eylandt, Australia **Quality Control Superintendent**

1 March 1993 – 1 October 1993

BHP Manganese, Groote Eylandt, Australia **Senior Mining Engineer**

1 May 1992 – 1 May 1993

BHP Manganese, Groote Eylandt, Australia **Mine Services Supervisor**

1 June 1991 – 1 May 1992

BHP Manganese, Groote Eylandt, Australia **Mining Engineer**

4 June 1990 – 1 June 1991

OTHER EXPERIENCE

Rich Meats Exports, NSW, Australia **Export Manager/Operations Manager**

1985 – 1990

Coalcliff Collieries, Wollongong, Australia **Graduate Engineer**

1983 – 1984

APPENDIX B

REVIEW OF KEY MINING ISSUES DRAYTON SOUTH COAL PROJECT 2015

September 2015

Report prepared for Darley Australia and Coolmore Australia

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Resources Consultant

Review of Key Mining Issues Relating To The Drayton South Coal Project EIS 2015

PREAMBLE

The author was commissioned to review the Drayton South Coal Project EIS May 2015 and the Drayton South Response to Submissions July 2015 and provide comment on any issues that in his opinion were relevant for the attention of Darley Australia and Coolmore Australia.

THE AUTHOR

Michael White is Resources Consultant. He holds an honours degree in Mining Engineering and an MBA. He has over 25 years' experience in operational and technical roles working for major mining companies in Australia and internationally. He has 14 years' experience working in the open cut coal industry in NSW and Qld including 8 years in the roles of Operations Manager and General Manager.

Executive summary

The key issues identified in this review are as follows:

1. Significant risks exist for the project's ability to deliver the saleable tonnes as per the Production Schedule Summary in the EIS Appendix B Mine Plan Justification based on the following:
    a. Previous actual significant underperformance (35%) for the period 2008-2014 when compared to previous 2007 EA production schedule for the same period
    b. The achievability of the annual equipment production assumptions when compared to the 2012 EA assumptions
    c. The achievability of the life of mine equipment production assumptions due to the significant reduction in project capital and the equipment replacement strategy increasing the risks of poor reliability and reduced annual output

2. Omissions and Errors in the Information Provided
    a. There is no schedule for the 1.4 million ROM (Run of Mine) tonnes from the existing Drayton mine. This quantity of ROM coal tonnes is missing from the Production Schedule Summary in the EIS Appendix B Mine Plan Justification.
    b. Incorrect and understated total waste production quantities are shown in the Air Quality and Greenhouse Gas Impact Assessment (table 7.3, p. H-52). If this incorrect data was used in the air quality modelling then the validity of that modelling is questionable.

3. Drayton Mine rehabilitation and closure costs
   The existing Drayton Mine Closure Plan is not finalised. It is unclear how the mine closure costs can be correctly estimated given this situation. With regards to the Drayton South Project there does not appear to be any additional cost allowance for Mine Closure of Drayton South mine area infrastructure.

4. The capital expenditure summary estimated over the life of the mine appears to have been underestimated.

5. Drayton South Project strip ratio (SR) is high compared to other Hunter Valley mines, particularly in the first four years of the project. This is a major cost driver for any open cut mine and will be unavoidable for every tonne extracted from the Drayton South reserves as per this plan.

Key Issue 1: Significant Risk in the Delivery of the 2015 EIS Scheduled Saleable Production

Issue 1a: Current and Past Underperformance as an indicator of future performance?

Figure 1. Mine Actual Performance vs 2007 EA Schedule

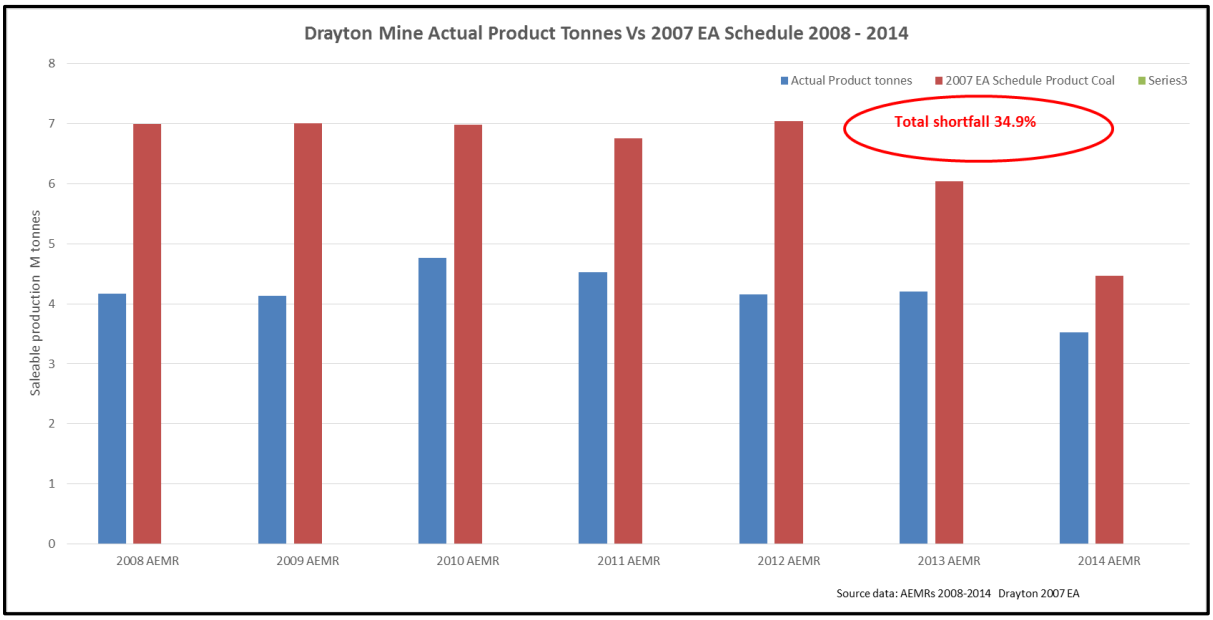
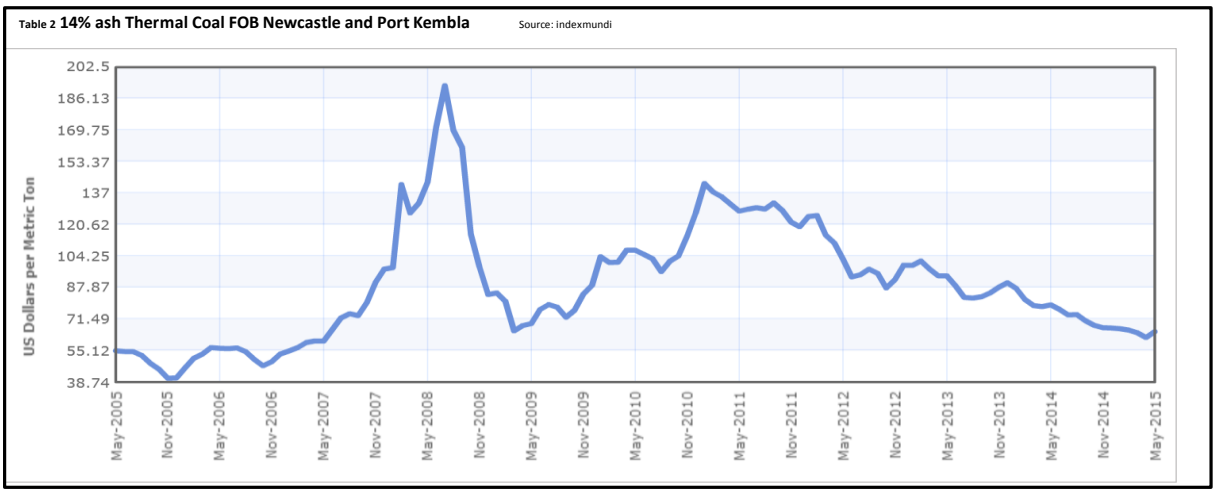


Figure 1 shows that for each year from 2008 to 2014 the actual saleable production was significantly less than the schedule provided in the 2007 EA. The total shortfall in that period was 15.8 million product tonnes or 34.9%. This shortfall occurred during a period of peak and sustained high coal prices when mine operators had strong economic incentive to maximise production levels (see figure 2 below).

It is recommended that the economic analysis for the project include a sensitivity analysis for a range of production level outcomes similar to the previous shortfall (35%) identified here. It is understood the current range used for sensitivity analysis is 20%.

Figure 2. Coal prices in the period May 2005-May 2015.



What happened to the "missing" Drayton coal?

The 2007 EA identified coal reserves at Drayton mine of approximately 52.7 million ROM tonnes. Drayton Mine AEMR information shows that only 35.4 million ROM tonnes were mined in the 2008-2014 period. This would imply that by the end of 2014 there were approximately 17 million ROM tonnes of reserves remaining.

The 2014 AEMR states:

> *As at 31st December 2014 the remaining total JORC resource is 5.961 million tonnes. Of this ~3.5 million tonnes is within the current mine plan with the balance outside the mine plan in the A 173 lease area. Inventory of coal outside of this is subject to economic and mining method assessment. Resources within the mine plan can be mined within the term of the existing MOP.*
>
> *Drayton Mine AEMR 2014 p.9*

Based on the above information 13.5 million ROM tonnes of reserves were "lost" over the period 2007-2014. This represents both a significant loss in asset value for Anglo and the non-realisation of expected royalties for the State of New South Wales from the coal tonnes that were not produced.

The Department of Planning does not seem to be aware of the facts. Note the extract from the current August 2015 DPE Assessment Report Executive Summary below:

> Under the current approval, Anglo is allowed to extract up to 8 million tonnes of run-of-mine (ROM) coal a year until 2017, after which it is required to rehabilitate the mine. However, mining has developed more quickly than expected, and almost all the coal covered by the existing approval has been extracted.

Mining at Drayton mine has in fact been 35% slower than the original 2007 EA schedule. The reason the mine is about to run out of coal ahead of this schedule is because the stated coal reserves have been reduced by about 26% from those stated in 2007.

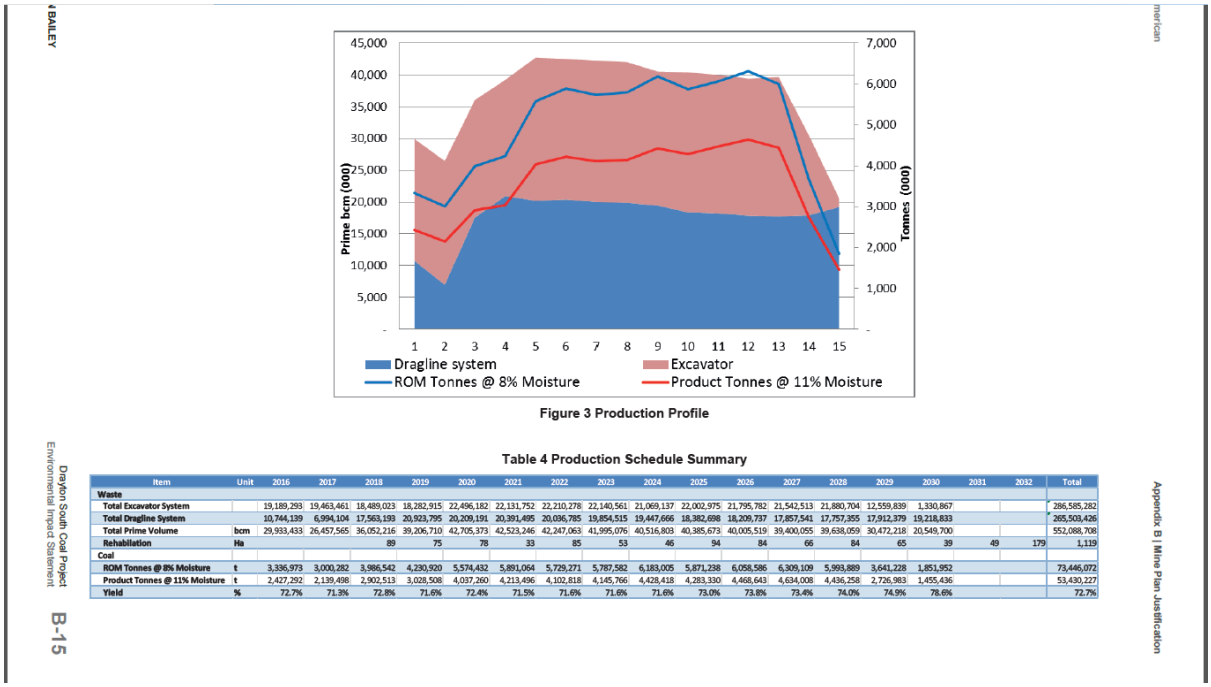
Issue 1b: Major Equipment Fleet Annual Production Assumptions – are they realistic and achievable?

The EIS identifies the following key equipment to be used in the project:

- One BE 1370 dragline
- Two Hitachi Ex 5500 excavators
- Two smaller (Hitachi Ex 3500 & 3600) excavators for coal and parting removal
- A fleet of dozers
- A fleet of 180 tonne (Cat 789B & C) haul trucks

The productivity of the dragline operation is assisted by cast blasting and dozer push. Both the 2012 EA and the 2015 EIS identified the use of these support methods.

Figure 3. 2015 EIS Production Schedule Summary and Production Profile



Item	Unit	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Waste																			
Total Excavator System		19,189,293	19,463,461	18,489,023	18,282,915	22,496,182	22,131,752	22,210,278	22,140,561	21,069,137	22,002,975	21,795,782	21,542,513	21,880,704	12,559,839	1,330,867			286,585,282
Total Dragline System		10,744,139	6,994,104	17,563,193	20,923,795	20,209,191	20,391,495	20,036,785	19,854,515	19,447,666	18,382,698	18,209,737	17,857,541	17,757,355	17,912,379	19,218,833			265,503,426
Total Prime Volume	bcm	29,933,433	26,457,565	36,052,216	39,206,710	42,705,373	42,523,246	42,247,063	41,995,076	40,516,803	40,385,673	40,005,519	39,400,055	39,638,059	30,472,218	20,549,700			552,088,708
Rehabilation	Ha			89	75	78	33	85	53	46	94	84	66	84	65	39	49	179	1,119
Coal																			
ROM Tonnes @ 8% Moisture	t	3,336,973	3,000,282	3,986,542	4,230,920	5,574,432	5,891,064	5,729,271	5,787,582	6,183,005	5,871,238	6,058,586	6,309,109	5,993,889	3,641,228	1,851,952			73,446,072
Product Tonnes @ 11% Moisture	t	2,427,292	2,139,498	2,902,513	3,028,508	4,037,260	4,213,496	4,102,818	4,145,766	4,428,418	4,283,330	4,468,643	4,634,008	4,436,258	2,726,983	1,455,436			53,430,227
Yield	%	72.7%	71.3%	72.8%	71.6%	72.4%	71.5%	71.6%	71.6%	71.6%	73.0%	73.8%	73.4%	74.0%	74.9%	78.6%			72.7%

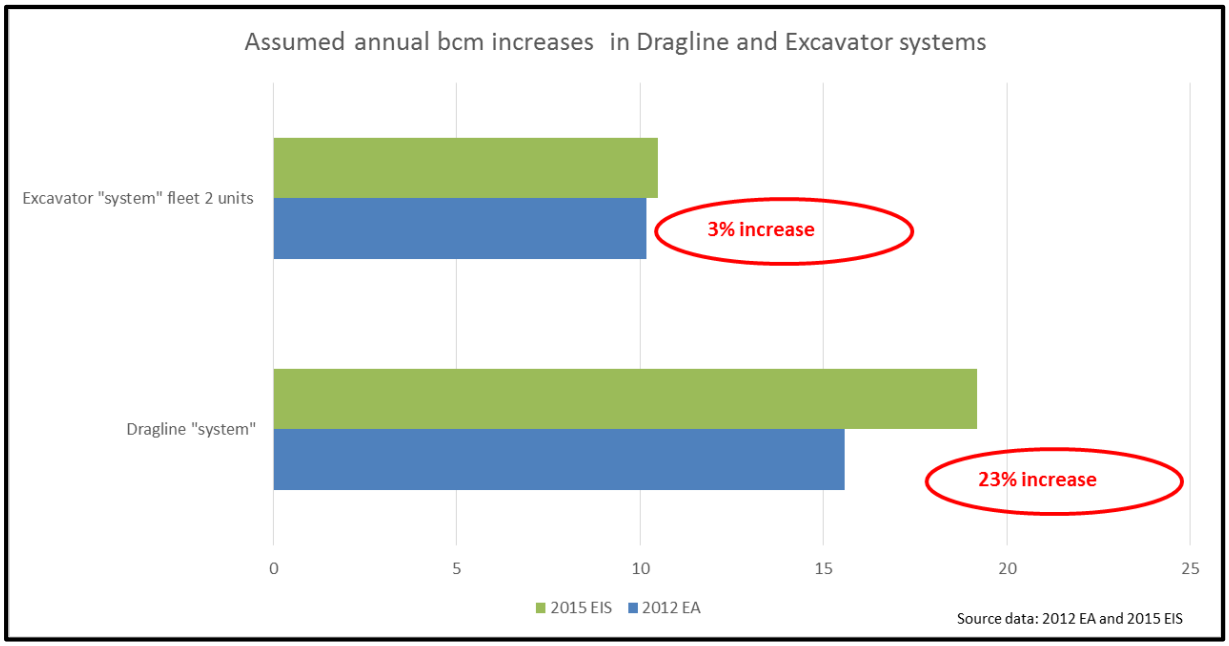
The annual waste movement quantities included in this schedule are labelled as "Total Dragline System" and the "Total Excavator System". It appears that the cast blasting and dozer push quantities have been aggregated with the dragline prime quantities. This may also be the case with excavator quantities being supplemented with smaller quantities by loaders or dozer push.

This aggregated data makes it difficult to compare the assumed annual production by fleet type against industry benchmark information. In order to accurately assess the actual achievability of the fleet assumptions contained in the EIS, more information and greater transparency as to the data and methods used is required.

Comparing aggregated annual production 2015 EIS vs 2012 EA

Another accepted method of benchmarking is internal benchmarking. This compares the performance of the same types of equipment within a mine against itself at different periods of time. Given that cast blasting and dozer push were identified as supplementary methods assisting the dragline in both the 2012 EA and the 2015 EIS, data comparison for the same fleet "systems" in these two Proposals is a valid assessment.

Figure 4. Comparison of waste fleet annual production 2012 EA vs 2015 EIS



This comparison uses data taken from the Production Schedule Summary in the 2015 EIS and from the 2012 EA, using five sample years of production data (Appendix F, Table 7-2: Air Quality and Greenhouse Gas Impact Assessment).

An increase of 3% in annual output assumptions for the excavator "system" appears reasonable.

The "dragline system" shows an increase of output assumptions of 23%. This is **remarkable and requires further explanation before it could be accepted at face value.**

Additionally, this increase in output warrants scrutiny in light of statements made in the March 2014 Consequential EIA For Retracted Mine Plan**.** In that EIA it was stated that the loss of Redbank Pit would *negatively* impact dragline productivity for the project. In the current Project Proposal mine plan the Redbank Pit has now been largely removed.

Issue 1c: Life of mine equipment reliability and annual output risks arising from the significant reduction in project capital and the equipment replacement strategy

The 2015 EIS shows reduced life of project capital costs to $131M. This is a reduction of $354M from the 2012 EA capital cost of $485M. The EIS attributes part of this capital reduction to extending the lives of existing equipment and buying second hand replacement equipment at reduced capital cost (compared to buying new equipment).

While these are valid ways to reduce capital spend, there is a trade-off in that this strategy will incur additional operating (maintenance) costs and will increase the likelihood of lower than planned equipment reliability and availability. This increased equipment downtime reduces the annual production capacity of effected equipment.

Figure 4 above shows that the "excavator system" has an average of 10.49 million prime bcms scheduled per year per machine for the first 13 years of mine life. It is unclear how many bcms per year are scheduled to other equipment within the "excavator system", like loaders or dozers. If the 500 tonne class excavators are scheduled to be moving the major portion of this waste, then they will need to achieve consistently high availability, utilisation of the available time and production rates per hour. Any reduction in this performance would result in a shortfall of production from these excavators.

Key Issue 2: Omissions and Errors in the Information Provided

Issue 2a: Missing ROM Tonnes in the EIS Production Schedule and Production Profile

The project is described as mining 75 million ROM tonnes. The DPE Project Assessment also concurs with this ROM quantity.

The ROM tonnage scheduled to be mined from the new Drayton South area is approximately 73.5 million tonnes. An additional 1.4Mt of ROM coal is planned to be extracted from the existing Drayton mine area.

It appears that 1.4 million ROM tonnes (equivalent to the Drayton mine ROM tonnage) are missing from the Drayton South Project Production schedule, yet the associated waste volume has been included. This appears to be an inconsistent and incorrect presentation of key information.

The life of mine total ROM coal shown in the Production Schedule Summary is 73.446 M ROM tonnes.[1] This is reproduced as Figure 3 above. The dragline waste volumes shown in Year 1 and Year 2 of the Schedule and Profile must be from Drayton Mine based on the information provided in the EIS that the dragline does not relocate to the new Drayton South area (Whynot Pit) until Year 3.

The 2015 EIS describes continuing mining at the Drayton Mine for a period of 15 years. The 2015 EIS does not provide a schedule for the Drayton Mine tonnes. There does not currently appear to be any binding commitment to the timing of extraction of this coal.

Clearly committing to a production schedule that extracts this Drayton mine coal as quickly as possible should be a compatible goal for all stakeholders. It would maximise product tonnage in the earliest years of the project to help cash flow while also enabling mine rehabilitation to occur as quickly as possible in all areas of Drayton mine not required for ongoing use.

The EIS does currently propose progressive rehabilitation at the Drayton mine over the Year 1-Year 5 period.[2] The 1.4 million ROM tonnes at the existing Drayton Mine appear to be mined in the first 4-5 years from the existing Drayton mine. It is unclear why this is projected to take so long to accomplish. It is noted that some of this activity is mining into old rehabilitated areas and also mining through the site industrial dam (after it is emptied).

[1] EIS Appendix B Mine Plan Justification p. B-15.
[2] EIS Main Report, Section 3 Project Description Figures 3.11-3.13, pp. 77-79.

Issue 2b: Incorrect data in the Air Quality Model coal and waste Production Schedule

Air quality and greenhouse gas impact statement, Appendix H, Table 7.3 p. H-52.

Table 7.3: Summary of open cut ROM coal and waste production schedule

Pit ID	Material removed		Year 4	Year 6	Year 12
Whynot	Waste (Mbcm)	Dragline	11.9	12.1	17.7
		Excavator	15.9	13.1	20.8
		Partings	0.6	0.6	0.9
		Total	23.11	29.39	17.56
	ROM coal (kT)	Total	3,509	3,781	6,129
Blakefield	Waste (Mbcm)	Dragline	8.3	8.5	0
		Excavator	1.8	2.7	0
		Partings	0	0	0
		Total	0.7	0.8	0
	ROM coal (kT)	Total	667	829	0
Whynot West	Waste (Mbcm)	Dragline	0	0	0
		Excavator	0	5.4	0
		Partings	0	0.4	0
		Total	0	1.1	0
	ROM coal (kT)	Total	0	1,119	0
Total Waste (Mbcm)			**23.8**	**31.3**	**17.6**
Total ROM (kT)			**4,176**	**5,728**	**6,129**

The above table shows that the Total Waste (Mbcm) for each pit is mathematically wrong and that the Total Waste (Mbcm) overall is also mathematically wrong. It understates the total waste volumes in each year when compared to the EIS Production Schedule Summary as follows:

Year	EIS Appendix H Table 7.3 Total (Mbcm)	EIS Appendix B Table 4 Production Schedule Total (Mbcm)	Percentage understated
Year 4	23.8	39.2	39%
Year 6	31.3	42.5	26%
Year 12	17.6	39.4	55%

If this error has been carried through into the air quality modelling the air quality impacts may well have been understated due to the incorrect lower waste movement volumes used and the actual impacts to air quality could be worse than predicted.

Key Issue 3: Drayton Mine Rehabilitation and Closure Costs

The existing Drayton mine has reached the stage of imminent possible closure without a finalised Mine Closure Plan. Concerns regarding progress on Drayton Mine rehabilitation have previously been raised in PAC reports and by DRE in AEMRs. A draft Mine Closure Plan was submitted by Anglo to DRE in December 2014.[3] There is also commentary that "a consultation process is currently underway with the relevant government agencies".[4]

The DPE Assessment Report and the Anglo Response To Submissions includes an additional option for minimising final voids that has been developed and it will apparently be required to be adopted.

Mine closure costs for the existing Drayton mine are identified in the EIS as $66M and would be incurred at the end of 2015 if the Drayton South Project does not proceed. If the Project proceeds the Mine Closure costs do not change (in real dollar terms) and occur in 2031.

This raises two issues:

- Firstly, how can there be certainty that the $66 million estimate for the existing Drayton Mine is accurate and adequate if the Mine Closure plan is not finalised?

- Secondly, if the Project does proceed there will be additional Drayton South infrastructure built. The Drayton South Project Mine Closure costs do not reflect the necessary increase to cover removal of this additional infrastructure. The amount of additional capital needed to cover Mine Closure in the Drayton South area is unknown and unaccounted for.

[3] EIS Main report, Section 7.14 Rehabilitation, Final Landform and Mine Closure, p.7-102.
[4] EIS Main report, Section 2, Approved Operations, pp. 2-3).

Key Issue 4: The Required Capital Expenditure for the Project Appears to Have Been Underestimated

EIS Appendix E Economic Assessment p. E-24.

Table 4.2 – Summary of Capital Expenditure for the Project

Capital Expenditure	$M
Boxcut	3
Dragline	34
Power Supply	7
Sound Attenuation Equipment	8
CHPP	16
Water Supply	6
Site Communications	1
AGL Macquarie Conveyor Cutting/Connection	1
Plant Control systems/IM	0
On Site Civils (Inc. Haul Road)	22
Fuel and Lubrication Systems	1
Construction Facilities	1
Edderton Road Relocation	12
Land Acquisitions	2
Project Services	0
Contingency (15%)	17
Total	**131**

There has been a significant capital reduction of $354 million in the current Proposal when compared the previous proposal.

The 2015 EIS contains some information as to how this is achieved:

> *"Sustaining capital spend is largely related to fixed infrastructure refurbishment and capital equipment replacement. The shorter mine life resulting from constraining the resource extraction will lead to a reduced sustaining capital spend. In addition, the prevailing market conditions will drive a number of decisions regarding sustaining capital timing and size. In particular, mobile equipment replacements are now assessed not only in terms of extended operating life but also against the very strong, low hour, second hand market."* [5]

[5] EIS 2015, Main Report, pp. 3-18 and 3-19.

New mining equipment does not appear to be accounted for, and the EIS document states that existing mining equipment will be utilised for the Drayton South Project. The bulk of equipment to be used for the Drayton South project is not new, and will require ongoing replacements over the life of the project if it is to operate effectively and efficiently. This would likely be required across a full range of equipment from excavators and trucks, dozers, light trucks and light vehicles right down to minor capital items including pumps, welders, generators and tools.

Key production equipment like excavators and trucks would be expected to accumulate at least 6000 engine hours per year per machine. For a 15 year mine life this makes 90,000 hrs required. This exceeds the typical planned life for this type of equipment and this project is not commencing with a new equipment fleet.

The above Table 4.2 Summary of Capital Expenditure does not appear to show any equipment replacement capital.

There is an allocation for $34 million for the dragline. It is scheduled for a major rebuild in the first two years of the project and will require further major maintenance within the 15-year period.

There is also $16million allocated for existing CHPP (Coal handling and prep plant).

Excavators

It is believed that the existing Hitachi Ex5500 excavator fleet is at least six years old and that at least one of these two machines will need to be replaced during the project life.

A new replacement machine (Hitachi Ex 5600) would cost approximately $12 million.

Trucks

Cat 789 truck replacements will also be required during the life of the project. A new Cat 789 with noise attenuation would cost approximately $4 million per truck. Assuming that only half the Cat 789 fleet required replacement during the project life this would amount to a capital cost of $52 million.

Wheel size increase on Cat 789 trucks

The project intends to fit larger tyres and rims to some of the trucks to enable them to haul coal 13km to the Coal Preparation Plant. Changing the wheel sizes on the Cat 789 trucks would be typically capitalised and this cost for rims and tyres is estimated as approximately

$360,000 per truck. Assuming that at least half of the fleet (13 trucks) would need to be converted this would amount to a capital cost of $4.7 million.

Other annual capital requirements

Minor annual capital is always required, typically for items such as pipelines, in-pit haul road extensions, power line and sub-station moves, smaller equipment replacements and light vehicle replacements. There appears to be no allowance for these items in the EIS. If tightly managed, a conservative estimate for the cost of these items ranges from $1 million to $5 million per year. Assuming that minor capital per year averages $2.5 million and no minor capital is spent in the final two years of the project, then this would amount to $32.5 million (13 x $2.5 million).

Excavators	**$12m**
Trucks	**$52m**
Wheel size increases on Cat 789 trucks	**$4.7m**
Other annual capital requirements	**$32.5m**
Additional capital items currently excluded	**Total $101.2 million**

The above list is not intended to be exact or complete for the Drayton South Project but it clearly illustrates that the real capital requirement for the project is likely to be significantly greater than the forecast $131 million.

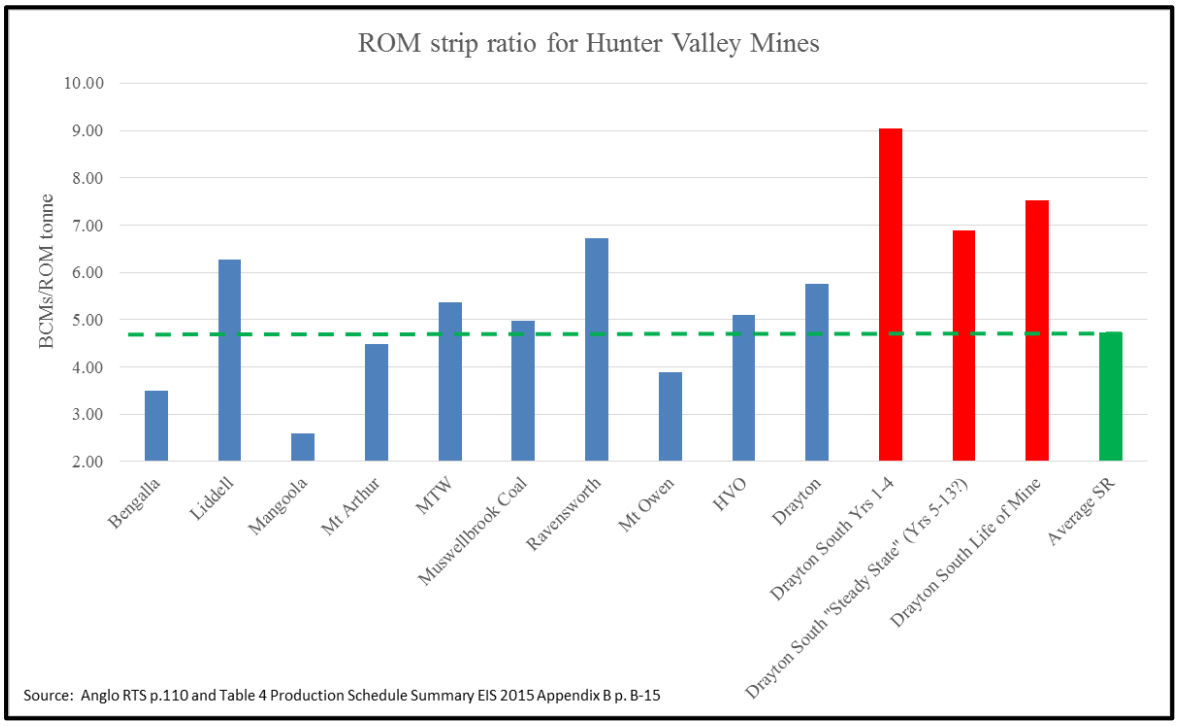
It is acknowledged that purchase of low hour second hand equipment would reduce the capital requirement when compared to new equipment cost. That said it is also believed that the above list is very conservative in its estimate of the additional capital required and not evidently included in the Project Capital estimate.

Key Issue 5: Drayton South Project Strip Ratio (SR) & the Potential Impact on Saleable Coal Cost per Tonne

The EIS expresses the strip ratio as the quantity of bank cubic metres that need to be mined per tonne of ROM coal. Figure 5 below shows the ROM Strip Ratio for Hunter Valley Mines. From this table the following information is clear:

- Years 1-4 of the Project Mine Plan have an average SR of 9.04. This is 92% higher than the average SR for all mines shown of 4.72.
- The life of project average SR is 7.53. This is 60% higher than the SR average across all mines shown

Figure 5 ROM strip ratio for Hunter Valley Mines 2013-2014



The following example illustrates the impact (if unmitigated elsewhere) of this strip ratio difference on mine costs/ROM tonne and product tonne. In this example the proportions of waste moved by excavator/truck and dragline are similar to the Project. The assumed yield is similar to the Project. (The cost information provided is assumed and for example purposes only).

Example Mine A with bcms/ROM tonne SR at 4.72 (All mines average SR)

The mine is moving waste 50% by dragline and 50% by excavator/truck and the yield is 73%

Assumed direct cost/bcm including blasting	$2.50
Direct waste removal cost/ROM tonne	$11.80
Direct waste removal cost/product tonne	**$16.16**

Example Mine B with bcms/ROM tonne SR at 7.53 (Drayton South life of project average SR)

The mine is moving waste 50% by dragline and 50% by excavator/truck and the yield is 73%

Assumed direct cost/bcm including blasting	$2.50
Direct waste removal cost/ROM tonne	$18.83
Direct waste removal cost/product tonne	**$25.79**

Mine A vs. Mine B

Difference in the direct waste removal cost per product tonne **$9.63**

Assuming all other costs at both mines are equal, Mine B would need to reduce its other costs by $9.63/product tonne to offset the SR impacts and achieve the same cost per product tonne as Mine A.

This demonstrates that Drayton South faces a significant cost challenge when compared to its industry peers as a result of the high Strip Ratio of the mine. This is unavoidable because it is a feature of the resource and will be present for every ROM tonne produced in this plan.

Conclusion

This review raises a number of key issues that question the ability to achieve the plan as described, and question the accuracy and level of detail of the information as currently supplied.

These key issues and their potential impact on the economic evaluation of the project and the wider impacts of the project suggests that significantly more information is required before the PAC should be satisfied that it has the ability to properly assess the merits and risks of this proposal.

References

Documents referred to for this review include:

- DPE State Significant Development Assessment Drayton South Coal Project August 2015
- DPE Recommended Development Consent August 2015
- Drayton South Coal Project Response to Submissions July 2015
- Drayton South Coal Project EIS May 2015
- Drayton Mine Extension Background Document for Anglo American Coal December 2014
- PAC Determination Report October 2014
- DPE Major Project Assessment Drayton South Coal Project July 2014
- Drayton South Coal Project Consequential EIA for Retracted Mine Plan March 2014
- PAC Drayton South Coal Project Review Report December 2013
- Drayton South Coal Project EA November 2012
- Drayton Mine Extension EA August 2007
- Drayton Mine AEMRs 2008-2014