NSW GOVERNMENT
Department of Planning

MAJOR PROJECT ASSESSMENT: Glennies Creek Open Cut Coal Project (MP 06_0073)

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

October 2008

Cover photo: View across Integra's existing open cut mining operations.

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EXECUTIVE SUMMARY

Integra Coal Operations Pty Ltd (Integra) operates the Integra Mining Complex, which is located approximately 12 kilometres northwest of Singleton in the Upper Hunter Valley (see Figure 1).

This complex is comprised of the former Glennies Creek underground and Camberwell open cut mines, which have now been integrated into one mining operation, and is located in an area that is dominated by intensive mining activity.

Under its existing approvals, Integra is allowed to extract 8.3 million tonnes from the complex each year, process it on site at the Camberwell coal handling and preparation plant, and transport it to export and domestic markets by rail.

Integra now proposes to extend its open cut operations to extract 7.7 million tonnes of coal from the Middle/Lower Liddell, Barrett and Hebden coal seams. Essentially, this proposal represents a continuation of existing mining activities within an existing mining lease area, which would not increase the intensity of the approved mining operations at the Integra mining complex.

The proposal has a capital investment value of $7 million, would provide continued employment for up to 180 people at the complex, and is classified as a 'Major Project' under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Consequently, the Minister is the approval authority for the project.

The Department exhibited the Environmental Assessment of the project from 25 October 2007 until 26 November 2007, and received 34 submissions on the project, including 6 from public authorities, and 26 from the general public. None of the public authorities objected to the project, however all of the public submissions, and one of the special interest group submissions (St Clements Church) objected to the project, mainly due to potential impacts from noise, blasting and dust and impacts to surface water and groundwater and biodiversity.

The Department has assessed the project application, EA, submissions on the project, and Integra's response to submissions in accordance with the relevant requirements of the EP&A Act, including the objects of the Act and the principles of ecologically sustainable development.

This assessment has found that the project would result in some adverse residual environmental impacts, most notably by way of operational noise emissions which are predicted to significantly affect 2 private properties and moderately affect a further 8 private properties. The mine's dust emissions are predicted to significantly affect a further 1 property.

Further, existing noise and dust levels in the region are approaching, and on some occasions have exceeded, applicable noise and dust criteria. However, following detailed assessment the Department is satisfied that the incremental and cumulative impacts associated with the mine as modified are able to be adequately mitigated, managed, offset and/or compensated for.

The project would disturb approximately 155 hectares of land, and include the clearing of 75 hectares of native vegetation. An acceptable offset has been provided to compensate for this.

Finally, this assessment has found that the project offers a number of social and economic benefits for the region, as it would:

- extend the life of the Integra mining complex;
- use existing facilities at the mining complex more efficiently;
- provide jobs for up to 178 people over approximately 10 years;
- attract $7 million worth of capital investment to the region;
- induce additional regional economic benefits through the increased spending of both Integra and its employees; and
- generate significant royalty and tax income for the Government.

On balance, the Department believes that the project represents a logical extension of Integra's existing mining operations, is satisfied that its benefits sufficiently outweigh its costs and is able to be conducted in a manner that is broadly consistent with the objects of the EP&A Act.

Consequently, it believes the project is in the public interest, and should be approved subject to conditions.

1. BACKGROUND

Integra Coal Operations Pty Ltd (Integra) operates the Integra Mining Complex, which is located approximately 12 kilometres northwest of Singleton in the Upper Hunter Valley.

This complex is comprised of the former Glennies Creek underground and Camberwell open cut mines, which have now been integrated into one mining operation. It is located in an intensive mining area, including Mt Owen and Ravensworth East to the north-west, Glendell and Ashton to the west and Rix's Creek to the south west (see Figure 1).

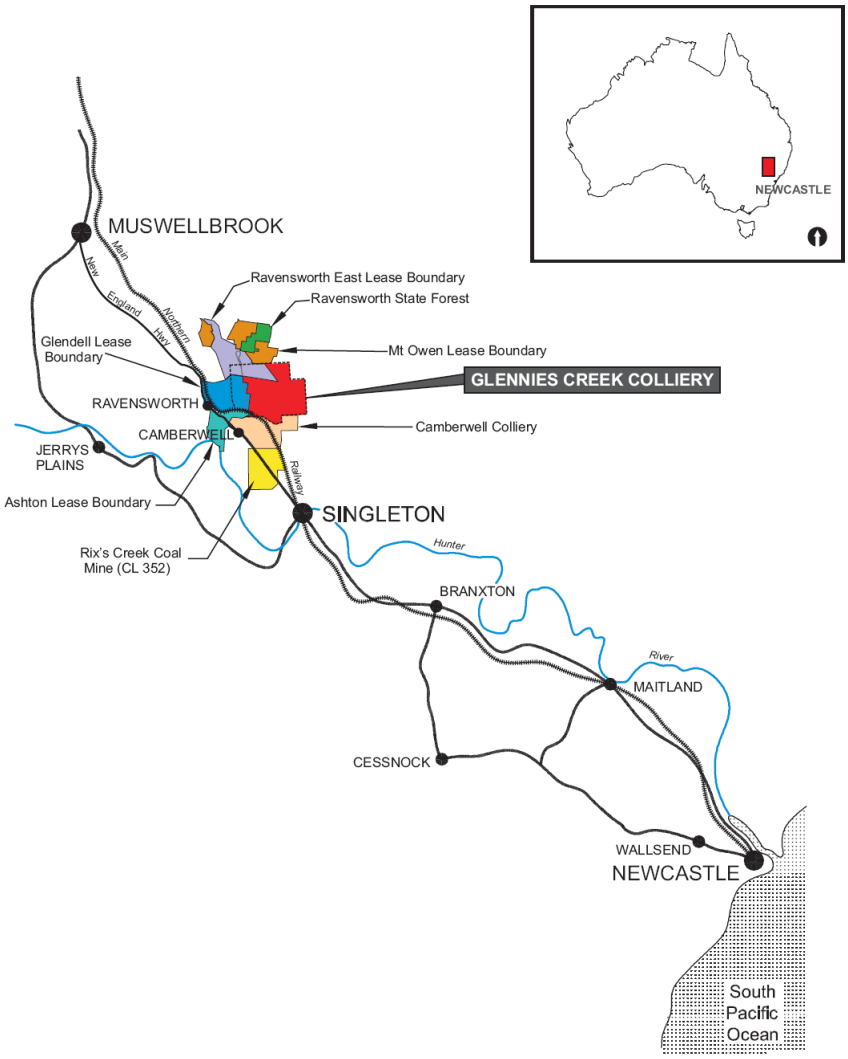


Figure 1: Regional Context

The mining operation at the complex is regulated by four consents/approvals:

- DA 86/2889 for the Camberwell open cut mining operations and use of associated surface facilities, including coal handling and preparation plant (CHPP) and coal loader;
- DA 105/90 and MP 06_0213 for the Glennies Creek underground colliery operations; and
- MP 06_0057 for the use of the underground surface facilities (see Figure 2 overleaf).

These consents/approvals allow Integra to:

- extract up to 3.8 million tonnes per annum from its open cut mining operations;
- extract up to 4.5 million tonnes per annum from its underground mining operation;
- process this coal at the Camberwell CHPP before loading it onto trains and dispatching it to export and/or domestic markets.

Integra is seeking approval to extend its open cut mining operations under Part 3A of the *Environmental Planning and Assessment Act 1979* (Figure 2).

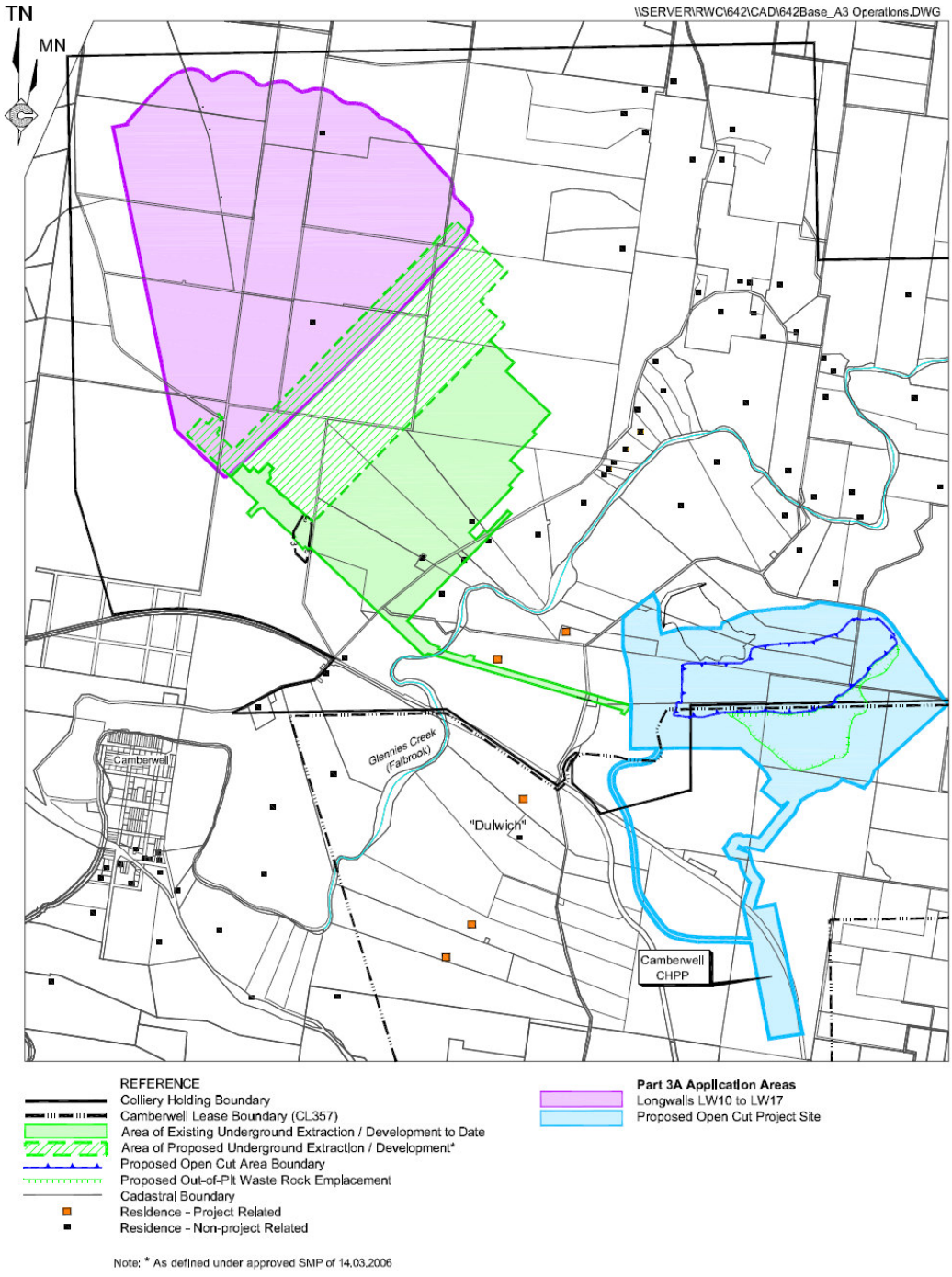


Figure 2: Integra Underground Operations and Project Area

2. PROPOSED PROJECT

2.1 Project Description

The project involves the establishment of an open cut coal mine adjacent to, and utilising elements of, Integra's existing underground mining operation.

The major components of this project – referred to as the Glennies Creek Open Cut Coal Project – is summarised in Table 1, and depicted in Figure 3. The project is described in full in the project's Environmental Assessment (EA), which is attached as Appendix F.

Table 1: Major Components of the Project

Aspect	Description
Project Summary	▪ ***Extraction of approximately 7.7 million tonnes of ROM coal from the Middle/Lower Liddell, Barrett and Hebden coal seams using conventional and terrace open cut and highwall/auger methods.***
Mining and Reserves	▪ 7.7Mt of ROM coal is available for extraction which is estimated to yield approximately 4.7Mt of product coal. ▪ Active mining would commence at the north western boundary of the open cut at Stony Creek Road and operate in a south western direction. ▪ 1.3Mt lies beneath the limits of the Possum Skin Dam and may be extracted in the future (would be subject to a further planning approval).
Vehicular Access	▪ Construction of a new site access road off Middle Falbrook Road.
Surface Facilities and Infrastructure	▪ Development of an open cut facilities area, including transportable offices, a bathhouse, crib room, a report room, first aid facilities, stores, workshop, lay-down areas, parking facilities and infrastructure.
Coal Transportation and Stockpiling	▪ Transportation of coal to the CHPP via a combination of internal haul routes (A to E) depending on active mining area and stockpiling needs. ▪ Coal would be transported to CHPP either directly or via temporary coal stockpiles or within the RL100 stockpile area.
Coal Processing	▪ The CHPP would continue to process all coal extracted from the Integra operation. ▪ No modifications or changes are required to the existing processing facilities – the CHPP has an approved capacity of 1,200tph.
Coarse Rejects and Tailings Management	▪ The combined volume of course reject and tailings material produced by the Integra operation (2Mcm) is capable of being capacitated within the existing reject tailings storage facility (2.4Mcm).
Product Coal Transportation	▪ Product coal would continue to be railed from the CHPP to the Port of Newcastle via the Main Northern Railway Line.
Waste Rock Management	▪ The project would generate 54.6 million loose cubic metres (Mlcm) of waste rock. ▪ 42.5 Mlcm would be placed in-pit to partially fill the mined out void to surface level. ▪ 12.1 Mlcm would be placed above the pre-mine land surface and in an out-of pit emplacement with an area of approximately 43ha.
Water Management	▪ Progressive construction of surface water control structures, including two dirty water containment dams.
Production	▪ Maximum production rate of up to 1.5 million tonnes per annum.
Hours of Operation	▪ Mining operations would take place 7 days a week with varied hours of operation during each construction and operational phase.
Employment	▪ The project is likely to directly and indirectly generate 178 full-time jobs
Project Life	▪ An overall project life of 10 years (from 2008 to 2018).
Capital Investment Value	▪ $7 million.
Rehabilitation and Offsets	▪ The total project area comprises 376 hectares (ha). ▪ The project would disturb 155ha of land, including the clearing of 75ha of native vegetation. ▪ 254ha of project-related land and 33ha of non-project related land would be protected and enhanced as biodiversity offset areas. ▪ 135ha of disturbed areas would be progressively rehabilitated.

2.2 Project Need

The project would enable the extraction of a large reserve of quality coking coal in accordance with the mining lease for the area.

The Department recognises that the proposed area of coal extraction is surrounded by existing coal mining operations. The project is able to be undertaken using existing mining equipment, facilities and infrastructure currently in operation. In this regard, it is acknowledged that the project represents a logical extension to existing coal mining activities in the area.

From the State's perspective, the project would deliver a number of key benefits, including employment opportunities for almost 180 people, flow-on regional economic benefits, as well as royalty and tax income.

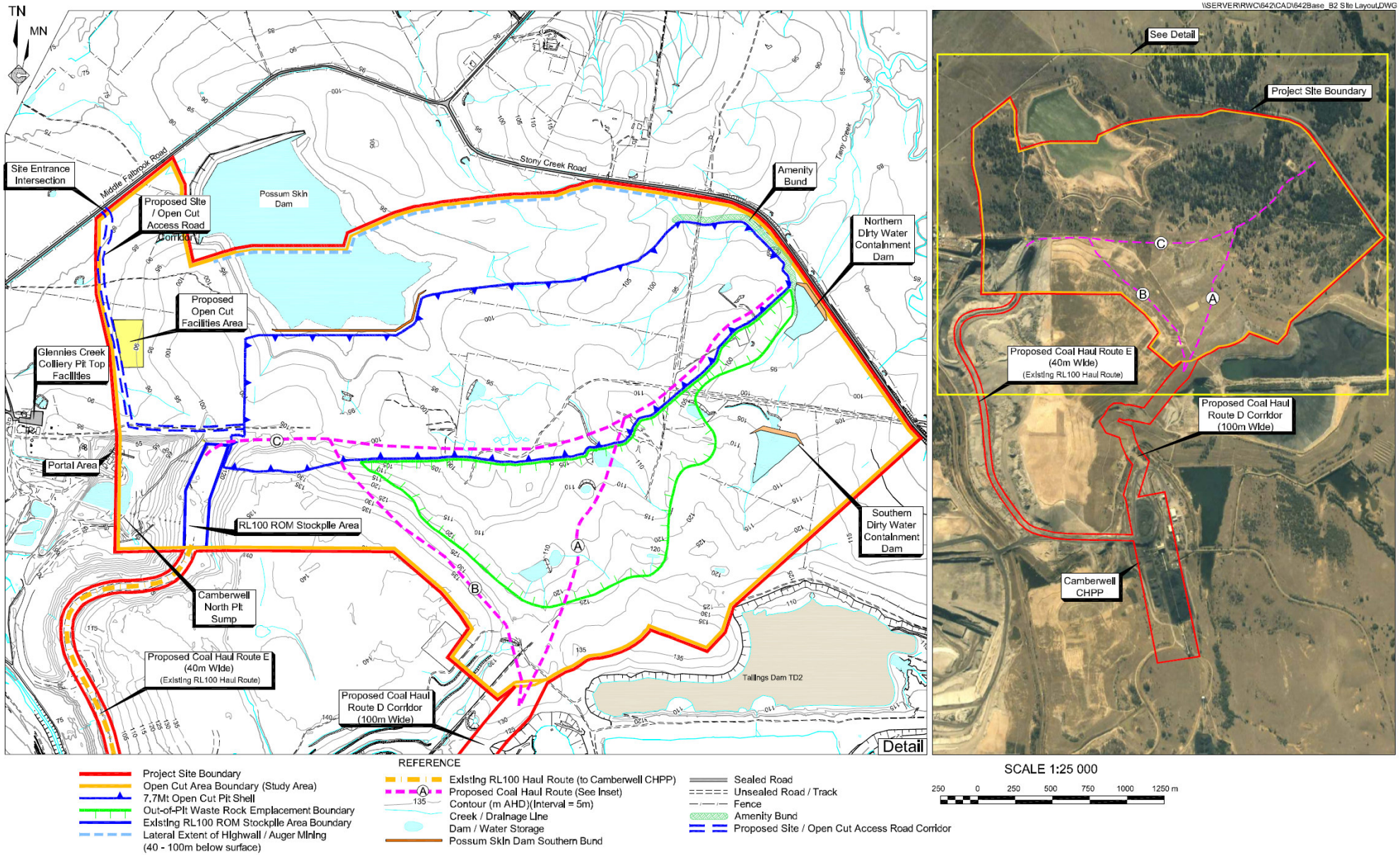


Figure 3: Project Layout Plan

3. STATUTORY CONTEXT

3.1 Major Project

The proposal is classified as a major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), because it is development for the purpose of coal mining, and therefore triggers the criteria in Clause 5 of Schedule 1 of *State Environmental Planning Policy (Major Projects) 2005* (Major Projects SEPP).

Consequently, the Minister for Planning is the approval authority for the project.

3.2 Permissibility

The land subject to the application is zoned 1(a) (Rural) under the *Singleton Local Environmental Plan 1996*, and mining is permissible in this zone with consent.

3.3 Exhibition and Notification

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the Environmental Assessment (EA) publicly available for at least 30 days.

After accepting the EA for the project, the Department:

- made it publicly available from 25 October until 26 November 2007:
  - on the Department's website, and
  - at the Department's Information Centre and at the offices of the Nature Conservation Council and Singleton Shire Council;
- notified landowners in the vicinity of the site about the exhibition period by letter;
- notified relevant State government authorities and Singleton Shire Council by letter; and
- advertised the exhibition in the Singleton Argus.

This satisfies the requirements in Section 75H(3) of the EP&A Act.

3.4 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report is required to include a copy of or reference to the provisions of environmental planning instruments that substantially govern the carrying out of the project.

The Department has considered the project against the relevant provisions of several *State Environmental Planning Policies* (SEPPs) and other environmental planning instruments, and is satisfied that none of these instruments substantially govern the carrying out of this project.

Nevertheless, the Department has included a consideration of applicable SEPPs (including SEPPs 33, 44, 55) which is set out in Appendix C. Whilst the Mining SEPP does not strictly apply to this project, the Department has nonetheless assessed the project against the aims, objectives and provisions of the SEPP.

3.5 Objects of the Environmental Planning and Assessment Act 1979

The Minister is required to consider the objects of the EP&A Act when he makes decisions under the Act. These objects are detailed in Section 5 of the Act, and include:

(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,

(ii) the promotion and co-ordination of the orderly and economic use and development of land,

(iii) the protection, provision and co-ordination of communication and utility services,

(iv) the provision of land for public purposes,

(v) the provision and co-ordination of community services and facilities, and

(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and

(vii) ecologically sustainable development, and
(viii) the provision and maintenance of affordable housing, and
(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and
(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.'

The objects of most relevance to the Minister's decision on whether or not to approve this project are those under Section 5(a)(i), (ii), (vi) and (vii).

3.6 Statement of Compliance

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements with respect to the project.

The Department is satisfied that the environmental assessment requirements have been complied with.

4. ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received 34 submissions on the project, including:
- 6 from public authorities;
- 2 from special interest groups; and
- 26 from the general public.

None of the public authorities objected to the project, however 24 of the public submissions objected to the project. A summary of the issues raised in submissions is provided below. A full copy of the submissions is attached in Appendix E.

4.1 Public Authorities

The ***Department of Primary Industries*** (DPI) required Integra to:
- produce an integrated Mining Operation Plan (MOP) for the project area, including a rehabilitation management plan for the amenity bund and specific characterisation of the overburden and interburden to be extracted from the open cut pit shell;
- integrate the MOP with all other rehabilitation and environmental management reporting documents within the project area for DPI approval;
- make further commitments to address mine safety as statutorily obliged under the *Coal Mine Health and Safety Act 2002* and the *Coal Mines Regulation Act 1982*;
- provide plans which clearly define each mining operation area and nominate a mine manager for each coal operation for DPI approval;
- amend certain elements of its stockpiling methods and trial a topsoil recovery project in consultation with DPI; and
- provide detailed assessment of alternative waste emplacement locations throughout the Integra complex to justify the waste emplacement area being located on previously undisturbed land.

The ***Department of Environment and Climate Change*** (DECC) does not object to the project, and is satisfied that the impacts of the project, namely air quality, noise, flora and fauna and Aboriginal cultural heritage, are manageable. DECC recommended a number of conditions to manage these environmental impacts, which the Department has incorporated into the recommended conditions of approval.

The ***Department of Water and Energy*** (DWE) does not object to the project but noted that Integra will be required to obtain a licence for hard rock groundwater interception under the *Water Act 1912*, and recommended a number of matters for inclusion in a groundwater monitoring program/management plan. DWE requested that the Department reflect the conditions that will be imposed by DWE to any water licence under the *Water Act 1912*.

The ***Mine Subsidence Board*** (MSB) does not object to the project, but noted that the erection of surface improvements would require the approval of the MSB prior to development.

The ***Roads and Traffic Authority*** (RTA) had no objection to or requirements for the project but recommends that the Department seek comments from Council in relation to potential transport impacts arising on local roads.

The ***Hunter – Central Rivers Catchment Management Authority*** (CMA) was of the view that the "improve or maintain" principle should be adopted in respect of the proposed offset strategy as set out within the *Native Vegetation Act 2003* and the development should be consistent with the Catchment Action Plan (CAP).

4.2 Community and Interest Groups

Of the 2 special interest groups to make submissions, CFMEU supported the proposal and St Clements Church objected to the proposal. Of the 26 submissions from the general public, 24 objected to the project and 2 supported it.

The main grounds for objection were as follows:

- noise and blasting impacts to residential amenity from mining activities during construction and operational stages (including transportation);
- physical effects from blasting and vibration upon private residences (e.g. cracking of walls and concrete water tanks) and the historically significant St Clements church;
- impacts to surface and groundwater resources and quality, including Glennies Creek and the Hunter River;
- impacts to existing biodiversity (particularly threatened species);
- increase in traffic movements upon the local road network especially from heavy goods vehicles;
- visual impacts from mining area including the open cut pit, coal and overburden stockpiles, emplacement areas and operational lighting impacts;
- lack of effective rehabilitation works and planting following mining activities;
- potential increases in greenhouse gas emissions;
- socio-economic impacts from the proposal;
- cumulative environmental impacts from Glennies Creek and other coal mines in the area; and
- pre-existing and future consultation, monitoring and compliance issues and the need for stricter regulation.

4.3 Response to Submissions

Integra has provided responses to the issues raised in submissions (see Appendix D), as well as a revised statement of commitments for the project. The Department has considered the issues raised in submissions, and Integra's responses to these issues, in its assessment of the project.

5. ASSESSMENT

5.1 Noise

Issue

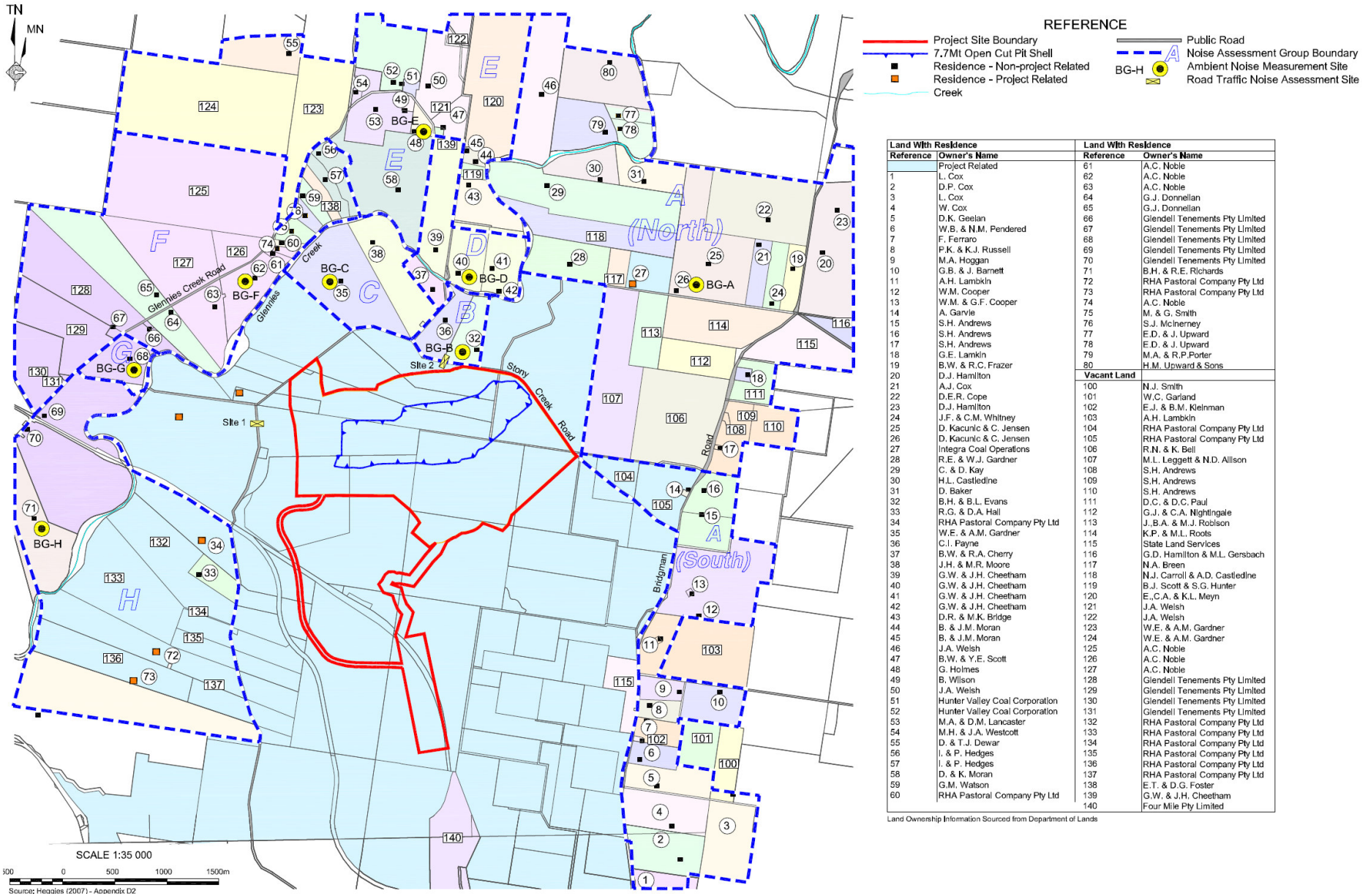
The project has the potential to generate operational, traffic and rail related incremental and cumulative noise impacts.

Consideration

The EA includes a noise impact assessment undertaken by Heggies Pty Ltd in accordance with the *NSW Industrial Noise Policy* (INP).

The assessment was undertaken with reference to 80 receivers in the vicinity of the mine, which are predominantly located along Stony Creek Road, Glennies Creek Road and Bridgman Road. 3 residences are located within 1km and 37 residences are within 2.5km of the open cut pit shell. The remaining 40 residences are located more than 2.5km away.

Each residence with a similar noise environment, based on their proximity or exposure to mines, road and rail traffic, fauna, waterways, vegetation and topography, were grouped into nine identifiable Noise Assessment Groups, categorised from A to H (Figure 4).



Land With Residence		Land With Residence	
Reference	Owner's Name	Reference	Owner's Name
	Project Related	61	A.C. Noble
1	L. Cox	62	A.C. Noble
2	D.P. Cox	63	A.C. Noble
3	L. Cox	64	G.J. Donnellan
4	W. Cox	65	G.J. Donnellan
5	D.K. Geelan	66	Glendell Tenements Pty Limited
6	W.B. & N.M. Pendered	67	Glendell Tenements Pty Limited
7	F. Ferraro	68	Glendell Tenements Pty Limited
8	P.K. & K.J. Russell	69	Glendell Tenements Pty Limited
9	M.A. Hoggan	70	Glendell Tenements Pty Limited
10	G.B. & J. Barnett	71	B.H. & R.E. Richards
11	A.H. Lambkin	72	RHA Pastoral Company Pty Ltd
12	W.M. Cooper	73	RHA Pastoral Company Pty Ltd
13	W.M. & G.F. Cooper	74	A.C. Noble
14	A. Garvie	75	M. & G. Smith
15	S.H. Andrews	76	S.J. McInerney
16	S.H. Andrews	77	E.D. & J. Upward
17	S.H. Andrews	78	E.D. & J. Upward
18	G.E. Lamkin	79	M.A. & R.P.Porter
19	B.W. & R.C. Frazer	80	H.M. Upward & Sons
20	D.J. Hamilton	**Vacant Land**	
21	A.J. Cox	100	N.J. Smith
22	D.E.R. Cope	101	W.C. Garland
23	D.J. Hamilton	102	E.J. & B.M. Kleinman
24	J.F. & C.M. Whitney	103	A.H. Lambkin
25	D. Kacunic & C. Jensen	104	RHA Pastoral Company Pty Ltd
26	D. Kacunic & C. Jensen	105	RHA Pastoral Company Pty Ltd
27	Integra Coal Operations	106	R.N. & K. Bell
28	R.E. & W.J. Gardner	107	M.L. Leggett & N.D. Allison
29	C. & D. Kay	108	S.H. Andrews
30	H.L. Castledine	109	S.H. Andrews
31	D. Baker	110	S.H. Andrews
32	B.H. & B.L. Evans	111	D.C. & D.C. Paul
33	R.G. & D.A. Hall	112	G.J. & C.A. Nightingale
34	RHA Pastoral Company Pty Ltd	113	J.,B.A. & M.J. Robison
35	W.E. & A.M. Gardner	114	K.P. & M.L. Roots
36	C.I. Payne	115	State Land Services
37	B.W. & R.A. Cherry	116	G.D. Hamilton & M.L. Gersbach
38	J.H. & M.R. Moore	117	N.A. Breen
39	G.W. & J.H. Cheetham	118	N.J. Carroll & A.D. Castledine
40	G.W. & J.H. Cheetham	119	B.J. Scott & S.G. Hunter
41	G.W. & J.H. Cheetham	120	E.,C.A. & K.L. Meyn
42	G.W. & J.H. Cheetham	121	J.A. Welsh
43	D.R. & M.K. Bridge	122	J.A. Welsh
44	B. & J.M. Moran	123	W.E. & A.M. Gardner
45	B. & J.M. Moran	124	W.E. & A.M. Gardner
46	J.A. Welsh	125	A.C. Noble
47	B.W. & Y.E. Scott	126	A.C. Noble
48	G. Holmes	127	A.C. Noble
49	B. Wilson	128	Glendell Tenements Pty Limited
50	J.A. Welsh	129	Glendell Tenements Pty Limited
51	Hunter Valley Coal Corporation	130	Glendell Tenements Pty Limited
52	Hunter Valley Coal Corporation	131	Glendell Tenements Pty Limited
53	M.A. & D.M. Lancaster	132	RHA Pastoral Company Pty Ltd
54	M.H. & J.A. Westcott	133	RHA Pastoral Company Pty Ltd
55	D. & T.J. Dewar	134	RHA Pastoral Company Pty Ltd
56	I. & P. Hedges	135	RHA Pastoral Company Pty Ltd
57	I. & P. Hedges	136	RHA Pastoral Company Pty Ltd
58	D. & K. Moran	137	RHA Pastoral Company Pty Ltd
59	G.M. Watson	138	E.T. & D.G. Foster
60	RHA Pastoral Company Pty Ltd	139	G.W. & J.H. Cheetham
		140	Four Mile Pty Limited

Land Ownership Information Sourced from Department of Lands

Figure 4: Land Ownership and Residences and Noise Assessment Groups

Unattended noise logging was undertaken at eight representative locations during day, evening and night periods between 9 March 2005 and 29 March 2005. Attended noise measuring was then carried out at the same locations on the 9, 10, 29 and 30 March 2005. This monitoring was used to establish the various rating background (noise) levels (RBLs) for the project. The ambient noise monitoring and estimated existing industrial noise is reproduced in Table 2 below. The RBLs were then used to develop Project Specific Noise Levels (PSNL's) (RBL + 5dB(A)) against which the predicted noise impacts from the project could be measured (Table 2).

Table 2: Background and Amenity Noise Environment

Noise Assessment Location	Rating Background Levels (RBLs) (dB(A)			$LA_{eq, period}$ dB(A) – all sources			Estimate $LA_{eq, period}$ dB(A) – industrial sources		
	Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
A – S	35	36	34	-	-	-	-	-	-
A – N	31	34	31	53	52	46	<44	<39	<34
B	30	32	30	48	47	42	<44	<39	<34
C	38	40	41	53	53	46	<44	<39	40
D	32	36	33	54	57	43	<44	<39	<34
E	35	31	31	49	48	42	<44	<39	<34
F	34	35	35	55	49	43	<44	<39	34
G	33	39	35	47	64	48	<44	<39	<34
H	36	38	36	41	49	45	<44	<39	40

As noted above, both the unattended and attended monitoring was carried out over a three week period during the autumn season only. Several of the locations showed a higher trend of background noise levels during the evening and nighttime periods than the corresponding daytime periods.

The Department considers that this variation is likely to have occurred as a result of seasonal changes in weather conditions (e.g. temperature inversions which the INP recognises to be a well known phenomenon within the Hunter Valley) and wildlife activity (e.g. insects, birds and other fauna).

The INP establishes methods for determining background noise. It recognises that long-term background noise monitoring may be required in instances where there is wide variability in daily assessment background levels. Whilst Integra is of the view that the monitoring was sufficiently robust to warrant the RBL's that were adopted, the Department and DECC consider that the background noise monitoring was carried out over too short a period of time to enable these seasonal variations to be taken into account.

It is noteworthy that the results received during the shorter evening periods can often be more unreliable and less statistically robust than the longer daytime and nighttime periods and often warrants a longer period of monitoring.

The INP Application Note states that when determining PSNL's, the intrusive noise levels for the evening and nighttime periods should be set at no greater than the intrusive noise levels for daytime periods, unless an alternative approach has been appropriately justified. In the light of the above, the Department and DECC do not consider that an alternative approach has been sufficiently justified (e.g. through provision of additional monitoring data) and recommends that a conservative approach be adopted when developing the Project Specific Noise Levels (PSNL's) for the project by setting the evening and nighttime PSNL's no higher than the daytime PSNL's.

DECC noted that were significant variations between the monitoring results gained at location C, compared to other nearly locations B and D located to the east, and F and G to the west and were concerned that the background monitoring may not be representative of the background noise in the area (Table 2).

However, it is noted that Noise Assessment Group C is acoustically different to other nearby locations because it is located within a relatively large, open area which receives reduced topographical acoustic attenuation from the surrounding mining operations and is exposed to higher ambient noise levels in comparison to other locations. During the initial site visit by

Integra's acoustic consultants, this area was specifically differentiated from Assessment Groups B and D and F and G for this reason. In addition, due to access and safety restrictions, the operator-attended noise surveys were conducted on Middle Falbrook Road and not at the intended noise logger's location (Property 35). This meant that there were discrepancies between the operator-attended noise levels and the unattended noise logger, which may also explain the differing background noise levels established. For these reasons, the Department recommends that the daytime RBL of 38dB(A) be adopted within Assessment Group C (but) for all three periods to ensure a consistent approach.

The modified PSNL's (and original PSNL's "struck through") are set out in Table 3 below.

Table 3: Project Specific Noise Levels (PSNL's)

Noise Assessment Group	***Project Specific Noise Levels (PSNL's)***					
	Intrusive $LA_{eq,\ 15\ minute}$, dB(A)			***Amenity $LA_{eq,\ period}$, dB(A)***		
	Day	***Evening***	***Night***	***Day***	***Evening***	***Night***
A – S	40	~~41~~ 40	39	50	45	40
A – N	36	~~39~~ 36	36	50	45	40
B	35	~~37~~ 35	35	50	45	40
C	43	~~45~~ 43	~~46~~ 43	50	45	38
D	37	~~41~~ 37	~~38~~ 37	50	45	40
E	40	36	36	50	45	40
F	39	~~40~~ 39	~~40~~ 39	50	45	37
G	38	~~44~~ 38	~~40~~ 38	50	45	40
H	41	~~43~~ 41	41	50	45	38

Operational Noise

A computer noise model was developed to incorporate the significant noise sources associated with the project, in the context of the existing terrain and nearby residences and properties. The following scenarios that were assessed were based upon planned production and mine progression:

- Construction;
- Operation Year 1;
- Operation Year 3; and
- Operation Year 6.

The predictive noise modeling was used to determine the level of operational noise likely to be experienced during the life of the project at each of the individual receivers in the vicinity of the mine. The modeling assumed that all "reasonable" and "feasible" noise management and mitigation measures had been implemented (these have been incorporated into the proponent's statement of commitments).

The noise predictions showed that the noise criteria would be met at the majority of properties. However, the criteria would be exceeded at a number of properties in Assessment Groups A – S, A – N and B. The Department's typical policy with regard to exceedances is as follows:

Noise Impact	***Criteria Exceedance***	***Management Required***
Marginal	1-2dB(A)	Noise mitigation, if possible
Moderate	3-5dB(A)	Noise mitigation, inc noise mitigation at residence
Significant	>5 dB(A)	Acquisition

The total number and magnitude of exceedances are set out in Table 4.

Table 4: Summary of Noise Affected Properties

Noise Assessment Group	***Period***	***Noise Management Zone***		***Noise Affectation Zone***
		Marginal (1-2dB(A))	***Moderate (3-5dB(A))***	***Significant (>5dB(A))***
A – S	Day	Nil	Nil	Nil
	Evening	Nil	Nil	Nil
	Night	4 – W Cox	7 – F Ferraro	Nil

		5 – DK Geelan 6 – WB & NM Pendered 9 – MA Hoggan 11 – AH Lambkin	8 – PK & KJ Russell	
A – N	Day	26 – D Kacunic & C Jensen 27 – AP & JA Egan 28 – RE & WJ Gardener		Nil
	Evening	25 – D Kacunic & C Jensen	27 – AP & JA Egan 28 – RE & WJ Gardener	Nil
	Night	Nil		Nil
B	Day	32 – Evans		32 – Evans 36 – Payne
	Evening	32 - Evans		32 – Evans 36 – Payne
	Night	Nil	Nil	Nil

As indicated in the table, 2 properties are expected to be significantly affected by the project, 4 properties are predicted to be moderately affected and 9 additional properties are predicted to be marginally affected.

The 2 significantly affected properties are located to the north of the mine and lie in closest proximity to the open cut pit shell. The Department recommends that these properties be provided with acquisition rights and noise mitigation measures upon request under the terms of the approval.

The 4 moderately affected properties are located in a rural area to the east and north east of the proposed mine. In accordance with contemporary policy, the Department recommends that Integra should be required to offer architectural treatments (such as double glazing, insulation and/or air conditioning) to all residences predicted to be moderately or significantly affected.

The 9 marginally affected properties are located to the east and north east of the mine. The Department is satisfied that these exceedances are minor, and would not result in any significant noise impacts (exceedances of 1 to 2 decibels are not readily perceptible to the human ear).

In addition, there are some parcels of vacant land that lie in close proximity to the project. It is the Department's policy to establish noise limits on all other privately owned land that does not contain a residence to avoid the development rights of any potential receiver being adversely affected in the future. It is recommended that conditions be imposed on this basis.

As set out above, the Department acknowledges that the mine's predicted noise emissions are close to, and in some cases exceed, the applicable noise criteria at several properties to the east and north-east of the site.

To ensure that these noise emissions noise are effectively managed, the Department believes that Integra should be required to establish a detailed noise monitoring program, in consultation with DECC, which includes a combination of real-time and supplementary attended noise monitoring and a noise monitoring protocol for evaluating compliance with the noise impact assessment and land acquisition criteria within the approval.

Finally, the Department has recommended conditions that would require Integra to continually seek to improve its noise performance, and to annually report on these improvements.

Cumulative Noise

The INP provides that the total noise level from all industrial noise sources in a rural area should be maintained below:

50 dBA L_{Aeq}, during the daytime;

45 dBA L_{Aeq}, during the evening; and

40 dBA L_{Aeq}, during the nighttime.

The EA includes a cumulative assessment of all existing and approved (albeit not yet operational) mining operations in the surrounding area, comprising Integra open cut and underground operations, Mt Owen, Ashton, Ravensworth East, Glendell and the Mine Gas Power Plant (Envirogen).

These noise levels were logarithmically added together to calculate the cumulative amenity criteria for each of the nine assessment groups identified for the project which were used to develop cumulative amenity PSNL's for the project (Table 3). The Department is satisfied that the cumulative assessment carried out to determine these criteria are as good as can be expected with such a difficult issue and notes that this approach represents a worst case scenario as it assumes that all mines are simultaneously emitting their maximum (approved) noise emission to a common receiver locality.

The assessment found that for all nine assessment groups, the amenity noise emissions from the project were below the corresponding cumulative amenity PSNL's during the daytime, evening and nighttime periods, except for location B where there may be a marginal 1 decibel exceedance during the evening period only. In any event, as noted above, the 2 properties located within Assessment Group B have been provided with acquisition rights upon request under the terms of the approval.

Notwithstanding this, the Department has recommended conditions to manage the potential for cumulative noise impact by establishing amenity criteria where appropriate and by recommending conditions that would require Integra to:

- take all reasonable and feasible measures to comply with cumulative noise criteria;
- acquire properties in the event that cumulative noise acquisition criteria are exceeded, on an equitable basis with other relevant mines; and
- seek to continually improve the noise performance of the mine.

The Department is satisfied that these measures, together with the operational mitigation measures outlined above (including architectural treatments on affected properties), would adequately manage the cumulative noise impacts of the mine as modified.

Construction Noise

The noisiest activity during the life of the project would be during the construction of an amenity bund adjacent to Stony Creek Road.

The bund is proposed to be constructed along the northeastern margin of the proposed open cut, set back approximately 20 metres from the southern side of Stony Creek Road, to provide a visual and acoustic shield. The bund would be approximately 1 metre wide, 4 metres high and 550 metres long with the outer face vegetated with pasture grasses and local native species.

Whilst is it acknowledged that construction activities associated with the project would be regulated by the project's noise impact assessment criteria, it is not uncommon practice to provide scope to exceed the prescribed limits when constructing a noise mitigation measure, such as an amenity bund, given that it would provide long-term noise attenuation (albeit with some short-term impacts).

Integra have carried out an assessment of the likely noise impacts during the construction of the amenity bund in accordance with DECC's *Environmental Noise Control Manual (ENCM) 1994 Chapter 171 Noise Control Guideline – Construction Site Noise*. This sets construction noise goals of background + 20dB(A) for periods of up to 4 weeks, background + 10dB(A) for periods between 5 and 26 weeks and background + 5dB(A) for periods greater than 26 weeks.

The assessment applied the most stringent construction noise goal of daytime RBL + 20dB(A), which showed that the construction noise emissions would comply with the criteria at all residences apart from at Residence 32 where there would be a 5dB(A) exceedance. Whilst the criteria adopted appeared to suggest that construction of the bund would be carried out within a 4 week period, the EA did not explicitly state the length of time that would be required to construct it, nor did it provide an assessment of the likely impacts to all surrounding residences, with noise contours, so the full extent of the impacts could be determined.

In the light of this, it is recommended that a condition be imposed to manage this issue in two ways. Firstly, the length of time for construction of the bund should be limited to a period of three months. Secondly, a Construction Noise Management Plan for the bund should be prepared and implemented in consultation with DECC prior to commencement of construction, which includes a detailed calculation of the likely noise impacts to all surrounding residential receivers and establishes appropriate construction noise goals, together with a monitoring and management procedures to ensure compliance.

Sleep Disturbance
A specific and quantitative assessment of sleep disturbance was not undertaken for the project. The Department has adopted DECC's advice by applying the screening levels disturbance criteria contained within the INP Application Note as upper limits.

Rail Noise
The project would not add to the number of trains departing from Camberwell CHPP so the configuration and number of trains would not vary from that currently approved.

The rail noise assessment adopted guideline noise assessment criteria from the ARTC's Environmental Protection Licence (EPL) 3142 of:
65 dBA $L_{Aeq(15\ hour)}$, during the day;
60 dBA $L_{Aeq(9\ hour)}$, during the evening; and
85 dBA L_{Amax}, during the night.

The assessment firstly established the number of existing, proposed and cumulative freight train movements and the estimated operating conditions whilst travelling on the Main Northern Railway on route to the Port of Newcastle rail unloader. Daytime and nighttime continuous noise levels and maximum passerby levels were then modelled to allow a comparison to be made between the predicted noise levels and the assessment criteria above.

It was found that:
- existing daytime noise levels would not change and would meet the relevant criteria at a distance of at least 36 metres;
- existing nighttime noise levels would increase very slightly and meet the relevant criteria at a distance of at least 150 metres; and
- maximum criteria for passerby noise would be achieved by train movements at a distance of at least 36 metres.

The Department considers that the cumulative rail noise impacts (i.e. including the project) on the Main Northern Railway Line are generally acceptable.

Road Noise
The road noise assessment examined the existing traffic flows for the mine access routes at two assessment sites on Middle Falbrook Road and Stony Creek Road. Cumulative noise levels at these sites were then established by using the daytime and nighttime peak hourly vehicle movements.

The road traffic noise levels for peak hourly daytime and nighttime traffic noise levels were modeled and assessed against DECC's *Environmental Criteria for Road Traffic Noise*, which for traffic on collector roads, are 60 dBA $L_{Aeq(1\ hour)}$, during the day and 55 dBA $L_{Aeq(1\ hour)}$, during the night.

At both assessment sites, cumulative noise levels would increase by up to 1dB(A) but remain below the criterion at an offset distance of 25 metres. Peak hour nighttime cumulative noise levels increase by up to 1dB(A) and are marginally (2dB(A)) above the 55 dBA $L_{Aeq(1\ hour)}$ criterion at 25 metres. However, the criterion would be achieved at distances greater than 35 metres.

Conclusion
The Department is satisfied that Integra has assessed the potential noise impacts of the project in accordance with relevant DECC guidelines, and adopted all reasonable and feasible noise mitigation measures.

The assessment indicates that the noise emissions associated with the mine as modified would significantly affect 2 private properties, and moderately affect a further 4 properties.

To ensure that the mine is managed in accordance with contemporary best practice noise controls, the Department has recommended conditions that would require Integra to:

- acquire (at the landowners request) properties where operational noise levels are predicted to exceed relevant criteria by more than 5dBA;
- undertake (with the landowner's consent) architectural noise treatments at all residences where operational noise levels are predicted to exceed relevant criteria by 3dBA or more;
- establish and implement a comprehensive noise monitoring program, which includes real-time and attended monitoring of noise impacts;
- comply with stringent project-specific and cumulative noise criteria, and strive to continually improve the noise performance of the mine; and
- prepare and implement a detailed construction noise management plan for the Stony Creek Road amenity bund.

5.2 Blasting and Vibration

Issue

The project has the potential to result in blasting impacts on residences, buildings and infrastructure.

Consideration

The EA includes a blast assessment undertaken by Heggies Australia Pty Ltd, which was undertaken with reference to nearby sensitive receivers identified within each noise assessment group (Figure 4).

The assessment indicates that applicable blast (overpressure and vibration) criteria and guidelines are able to be met at all receivers, through prudent management of blast design (in particular, through adjusting charge sizes). The EA anticipates that blasting impacts are unlikely to affect the structural integrity of any other buildings (e.g. St Clements Church) or infrastructure (e.g. Middle Falbrook Road Bridge over Glennies Creek) as nothing lies close enough to be impacted.

Some of the public submissions raised blasting impacts to the St Clements Church as an issue, with some concerned that existing cracking in the church building has been caused by mine blasting activities associated with the Ashton mine. The Department notes that Ashton Coal has commissioned two independent structural assessments of the church (in consultant with the Diocese), both of which concluded that that the cracking is likely to be the result of reactive clay foundation movement due to prevailing drought conditions, and not mine-related blasting.

Conclusion

The Department is satisfied that the project is able to be managed such that it would not result in any significant blast-related impacts to private residences or any other buildings and/or infrastructure.

To ensure that blasting is effectively managed, the Department has recommended conditions that would require Integra to:

- comply with applicable blast criteria;
- restrict blasting to daytime hours, and restrict the blast frequency to minimise annoyance;
- restrict blasting operations within 500 metres of land not owned by Integra unless satisfactory arrangements have been made to avoid flyrock-related risks;
- keep residences informed regarding blasting operations, and facilitate feedback/complaint management;
- provide for structural property inspections and investigations; and
- develop a comprehensive blast monitoring program.

5.3 Air Quality

Issue

The project has the potential to result in air quality impacts, particularly residential receivers to the north of the project area.

Consideration

The EA includes a specialist air quality assessment, undertaken by Holmes Air Sciences Pty Limited in accordance with the DECC's *Approved Methods and Guidance for the Modelling of Air Pollutants*.

Since the late 1990's, Integra has operated 10 dust deposition gauges and 3 high volume air samplers (HVAS) across the mining complex to measure dust deposition and TSP. Monitoring of PM_{10} emissions began at two HVAS locations in August 2005. The results indicate that air quality has generally been well within the respective DECC goals aside from some minor exceedances in dust deposition at gauge D7 during the four reporting periods from 1999/2000 to 2002/2003 and exceedances in TSP concentrations at HV2 in 2002 and 2004. More recently, PM_{10} has also periodically elevated above prescribed limits.

The assessment includes consideration of likely dust emissions from the project in isolation, as well as the total cumulative dust emissions from other mines, which contribute to background dust concentration (total suspended particulates (TSP) and fine particulate matter (PM_{10})), together with an analysis of dust deposition (insoluble solids).

During the course of the assessment, the Department requested that Integra take into account of likely dust emissions from the Glendell extension, which is approved, but not yet operational. Integra subsequently provided details of the dust emissions that would be generated by the Glendell extension within its cumulative air quality assessment.

Dispersion model simulations was undertaken for Years 1, 3 and 6 of the project to estimate the predicted contours of dust concentration (TSP and PM_{10}). This modeling was based upon likely operating scenarios that would occur over the life of the project (e.g. different haul route usage combinations) and took into account the prevailing weather conditions in the area, particularly downwind directions (southeast and northwest) and land topography.

The modeling also takes into account all management and mitigation measures that are to be employed by the company to control wind blown dust from exposed areas and dust generated by mining activities such as:

- minimising the area of disturbance necessary for mining operations;
- regularly watering haul roads and coal handling and stockpiling areas; and
- ripping and re-vegetating obsolete operational areas.

Project and cumulative air quality assessment criteria were adopted on the basis of the DECC's 24-hour, monthly and annual air quality modeling goals to protect health and amenity to ascertain the extent to which surrounding residential properties will be impacted by the project (Table 5).

Table 5: Air Quality Assessment Criteria

Pollutant	***Averaging Period / Units***	***Project Criterion Adopted***	***Cumulative Criterion Adopted***
Total suspended particulate (TSP) matter	Annual / $\mu g/m^3$	90	90
Particulate matter < 10 $\mu g/m^3$ (PM_{10})	Annual / $\mu g/m^3$	30	30
Particulate matter < 10 $\mu g/m^3$ (PM_{10})	24 hour / $\mu g/m^3$	50	150
Deposited Dust (insoluble solids)	Annual / g/m^2	2	4

The modeling showed that over the life of the project, there would be exceedances of DECC's criteria for PM_{10} and deposited dust at four private properties. These would occur during Year 1 (32 – Evans, 33 – Hall, 36 – Payne and 42 – Cheetham) and Year 3 (33 – Hall). There would be no exceedances predicted in Year 6 of the project and no exceedances of TSP criteria (Table 6).

Table 6: Project Specific and Cumulative Exceedances

Pollutant	Averaging Period / Units	Property ID	Maximum Exceedance		
			Project Criterion	Cumulative Criterion	Project Year
Total suspended particulate (TSP) matter	Annual / $\mu g/m^3$	No exceedances predicted			
Particulate matter < 10 $\mu g/m^3$ (PM_{10})	Annual / $\mu g/m^3$	32 – Evans	None	37 (+7)	Year 1
		33 – Hall	None	34 (+4)	Year 1
		33 – Hall	None	31 (+1)	Year 3
Particulate matter < 10 $\mu g/m^3$ (PM_{10})	24 hour / $\mu g/m^3$	32 – Evans	104 (+54)	None	Year 1
		33 – Hall	62 (+12)	None	Year 1
		42 – Cheetham	54 (+4)	None	Year 1
Deposited Dust (insoluble solids)	Annual / g/m^3	32 – Evans	5.2 (+3.2)	6.4 (+2.4)	Year 1
		36 – Payne	2.1 (+0.1)	None	Year 1

The properties that would experience exceedances are located between approximately 500 metres and 2 kilometres to the north and west of the open cut pit shell (see Figure 4).

The assessment indicates that the project would generate dust levels above DECC's incremental and cumulative criteria at Properties 32 and 36. Integra has commenced negotiations with these properties in the hope of reaching an appropriate arrangement with the owners. The company has made a commitment to continue these negotiations. In any event, and as referred to in Section 5.2, it is recommended that these properties be provided with acquisition rights upon request under the terms of this approval.

Property 33 would experience exceedances of the annual cumulative criterion and the 24-hour project criterion for PM_{10} during Years 1 and 3 of the project. It is noted that this property falls within the zone of affectation for the Camberwell mine development consent (the adjacent Property 34 that would also be impacted is mine owned and has been discounted) and is afforded compulsory acquisition rights by that consent. However, the consent will lapse in 2012, and it is therefore recommended that this property be granted compulsory acquisition rights upon request under the terms of this approval for the duration of the project life.

Property 42 would experience exceedances of the 24-hour PM_{10} project criterion during Year 1 of the project. The Department subsequently obtained further information from Integra to ascertain the level and duration of this exceedance. It was found that this exceedance was only predicted to occur during one 24-hour period in the 365 blocks modeled in the Year 1 scenario, or a 99.7 percentile. For land acquisition to be triggered, the criteria must be exceeded for at least five days 24-hour periods of the year, or a 98.6 percentile. It is also noteworthy that 98% of the highest 50 PM_{10} results were less or equal to $38\mu g/m^3$. For these reasons, the Department does not consider it to be justified to include Property 42 be granted compulsory acquisition rights.

The project is predicted to comply with applicable project and cumulative criteria at all other residences. However, the Department acknowledges that existing dust emissions in the locality are close to, and on some occasions have exceeded, applicable air quality criteria. Indeed, a number of public submissions raised concerns about the cumulative dust levels in the locality.

The elevated dust levels are the result of a number of sources – including mining, agriculture and recent road construction works – and have no doubt been exacerbated by prevailing drought conditions over recent years.

Notwithstanding, mining is a significant source of dust emissions in the locality. The mines in the locality that have the potential to influence air quality include the following:

- *Existing Mines:*
  - Ashton (open cut and underground);
  - Glennies Creek (underground);
  - Camberwell (open cut);
  - Rixs Creek (open cut);

- Mt Owen (open cut); and
- Ravensworth East (open cut).

- *Approved Mines*
  - Glennies Creek (underground extension); and
  - Glendell (open cut).

- *Proposed Mines*
  - Mt Arthur (underground);
  - Integra (open cut);
  - Integra (underground); and
  - Ashton (open cut).

To ensure that the cumulative impacts of the project are effectively managed, the Department has recommended appropriate cumulative dust management conditions. Similar conditions have been imposed upon other recent project approvals in this part of the Upper Hunter Valley.

In the event that the relevant air quality criteria are being exceeded, but that Integra and at least one other mine is responsible for the non-compliance, then Integra would be required, together with the relevant mine(s):
- take all reasonable and feasible measures to ensure that the relevant criteria are complied with; and
- conduct further monitoring to assess and demonstrate this compliance; or
- otherwise secure an agreement with the landowner to allow the exceedances.

If these measures do not achieve compliance with the relevant air quality land acquisition criteria and the mines' are unable to secure an agreement, then the applicable landowners would be granted acquisition rights.

Many of the public submissions also raised concerns about the contamination of tank water supplies and associated health impacts associated with dust settling on roofs, together with the impact of sludge build up in the tanks.

With regard to dust build-up, Integra estimates that based on a dust deposition rate of 4 g/m^2/month (i.e. the DECC maximum dust deposition criteria above which dust deposition impacts are deemed to occur) about 10kg of dust would build up on a typical roof area of 200m^2 over a period of one year. Conservatively assuming that all deposited dust falls into the rainwater tank, some 0.5mm of dust would be present in a typical rainwater tank. This equates to up to 5mm for the life of the project, which is not considered to be significant. Similarly, the settling of black sludge at the bottom of rainwater tanks is largely insoluble, inert and denser than water (i.e. will settle to the bottom of the tank). The Department is satisfied that the build up of dust and sludge is unlikely to result in any adverse health implications.

Integra notes that the much of the particulate matter could be avoided through the use of simple systems that prevent the first flush from the roof entering the tank. The company has made a commitment to assist any resident who is anticipated to experience annual average dust deposition levels in excess of 2 g/m^2/month from the project alone to install mitigation measures to limit the amount of dust that enters the rainwater tans(s) of the residence in question.

Conclusion

The Department and the DECC are satisfied that Integra has assessed the potential air quality impacts of the mine in accordance with relevant DECC guidelines, and appropriately considered reasonable and feasible dust mitigation measures. The assessment concludes that emissions from the project would make a small contribution to the overall dust levels in the vicinity of the project site.

The assessment indicates that the cumulative dust emissions of the mine together with emissions from surrounding mines and other sources would generally comply with established air quality criteria. However, existing dust emissions in the locality are close to, and on some occasions have exceeded, applicable air quality criteria.

In this context, to ensure that cumulative dust impacts are effectively managed, the Department has recommended conditions that would require Integra to:

- comply with incremental and cumulative air quality criteria;
- implement a comprehensive air quality monitoring program (it is noted that Integra has included a revised air quality monitoring network in the EA);
- publicly report all monitoring data;
- in the event that cumulative (or incremental) air quality criteria are exceeded:
  - take all reasonable and feasible measures to ensure that the relevant criteria are complied with; and
  - conduct further monitoring to assess and demonstrate this compliance; or
  - otherwise secure an agreement with the landowner to allow the exceedances, or acquire the affected property(s).

5.4 Water Resources

Issue

The project could impact upon existing local and regional groundwater and surface water resources.

Consideration

The EA includes a groundwater assessment undertaken by *Australasian Groundwater and Environmental Consultants Pty Ltd* and a surface water assessment undertaken by *PSM Australia Pty Ltd*.

Groundwater

The project site is located within an area characterised by intensive coal mining activity, so the local and regional groundwater regime is in a highly altered state compared with pre-mining conditions.

There are two principal classes of aquifers occurring within the area, namely quaternary-aged unconsolidated alluvial aquifers, lying beneath and following the course of Bettys Creek, and permian-aged coal seam aquifers. There is no interaction between these two groundwater systems.

Groundwater monitoring data was sourced from Integra's existing network of boreholes and other registered boreholes in the area. Collectively, the data indicated that groundwater from alluvial aquifers is fresh, with electrical conductivity (EC) values between 500µS/cm and 540µS/cm and a near neutral pH. By way of contrast, groundwater from Permian aquifers is brackish to saline, with EC values ranging from 7,280µS/cm to 10,280µS/cm, and is generally alkaline.

In terms of groundwater usage, records indicate that there are 28 registered boreholes located within a 15km radius of the open cut pit area, of which 5 lie in close proximity to the project area. In addition, a borehole census of the area identified one well, three man-made watercourses and three disused and backfilled wells intersecting the alluvial aquifer along Glennies Creek. A number of landowners also pump directly from Glennies Creek. No groundwater dependent ecosystems were identified within the vicinity of the open cut pit area.

It is acknowledged that the permian-aged coal seam aquifers would be impacted by the project. However, the poor quality of groundwater within these aquifers is such that it has limited, if any, commercial or domestic use even for irrigation or agricultural stock purposes (as reflected by the lack of registered boreholes within them when compared to alluvial aquifer usage). The assessment therefore focuses on impacts to alluvial aquifers.

A numerical groundwater model was developed in support of the assessment to assess groundwater inflows to the project and to the underground workings, to simulate the extent of the cone of depression induced by mine dewatering and the recovery of groundwater levels after mine closure. The assessment indicates that:

- a cone of depression associated with the project would extend approximately 1km east of the open cut pit shell;

- existing bores and wells located in alluvium (even in instances where they are located within the cone of depression) would not be impacted by mine dewatering;
- the project would not impact upon any users of alluvial groundwater;
- whilst there would be a minor increase in seepage and decrease in groundwater discharge the project would have no impact on flows within Glennies Creek; and
- groundwater inflows into the open cut mine would be relatively minor and peak during Year 4 of the project – no specific control strategies would not be needed;

Integra has committed to monitoring the volumes of water from sumps within the proposed open cut, together with the volume of water pumped from those sumps to enable groundwater inflows into the open cut to be estimated. In addition, the quality and quantity of groundwater would be monitored (including both boreholes located within the Glennies Creek alluvial aquifer) until such time as any borehole located within the open cut pit shell is removed by mining activities or mining has ceased within the open cut and groundwater impacts have been stabilised.

DWE is satisfied that the groundwater impact assessment but stressed that the interception of surface water and associated alluvium would not acceptable given the current embargo on local creeks, and recommended that a detailed groundwater monitoring plan be prepared which provides for detailed monitoring, impact assessment and remedial measures in the event of an impact being detected.

The Department is satisfied that potential groundwater impacts are able to be adequately managed. The Department has recommended conditions that would require Integra to prepare and implement a groundwater monitoring program and groundwater response plan for the mine, including requirements to monitor, assess and manage impacts to alluvial aquifers.

Surface Water

The project is located within the catchments of three tributaries to Glennies Creek, which have been modified in the past to accommodate mining-related activities. The company presently operates an integrated surface water management system for its underground and open cut mining operation. This ensures that clean water is diverted from the upper reaches of Martins and Blackwell Creeks to Station Creek and Glennies Creek and dirty water is retained and used for mining activities at the Integra mining complex and is shared with other mines in the area.

As part of the project, Integra would upgrade its integrated water system to ensure that all surface water continues to be managed so that dirty water is retained on site and clean water is directed into natural drainage lines. To achieve this, the company would construct two dirty water containment dams to the east of the out-of-pit rock emplacement, dirty water catchment drains and two clean water diversion channels to divert clean runoff away from areas disturbed by mining activities. All other existing aspects of the integrated surface water management system would continue to be maintained (see Figure 5 overleaf).

The surface water design and operational safeguards to supplement the existing integrated surface water management system has been designed to ensure that all saline water to an ARI 100 rainfall event and all sediment-laden water to an ARI 50 rainfall event is contained. The likely impact of the project upon the quality of water resources external to the project site would be negligible.

The catchment area that would be created by the proposed open cut and the dirty water containment dams is minimal in the context of the Glennies Creek catchment as a whole and would therefore have a negligible impact on water users and environmental flows downstream of the project. Similarly, the final landform and associated sub catchments would not significantly affect the catchment areas of Reedy and Glennies Creek.

The Department and DWE are satisfied that the project is unlikely to result in any significant surface water impacts. Conditions are recommended that would require Integra to:

- not discharge any mine water from the site, other than in accordance with the HRSTS; and
- prepare and implement an erosion and sediment control plan, a surface water monitoring program and a surface water response plan.

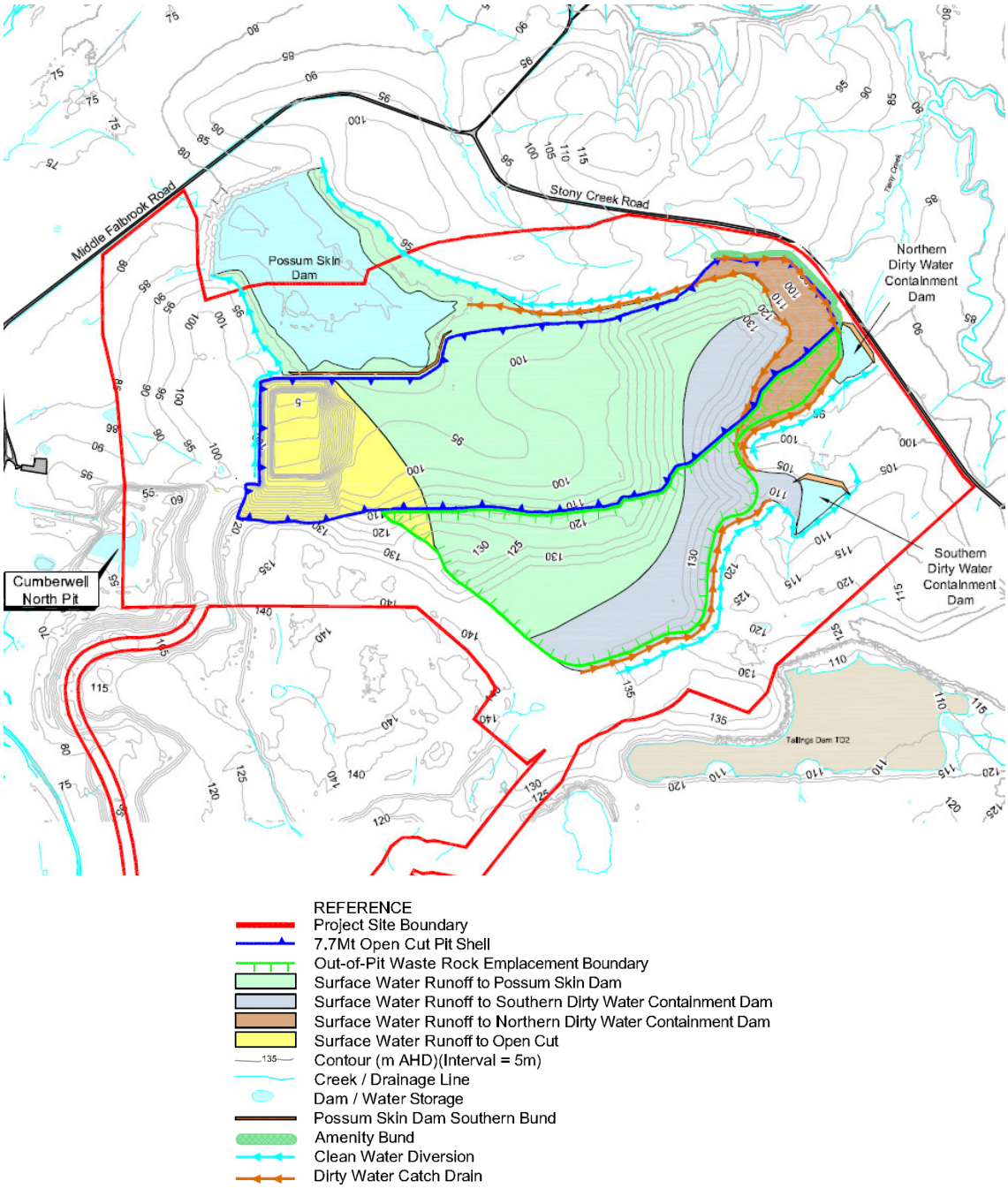


Figure 5: Proposed Surface Water Design Features

Water Balance

It is estimated that total input, including the project (600m^3/day), would total some 6,850m^3/day, sourced from dewatering, rainfall percolation and groundwater input. Outputs from Camberwell CHPP, including losses from tailings and dirty water dams, evaporation and dust suppression would total some 6,000m^3/day, thereby leaving an estimated surplus of approximately 850m^3/day.

The surplus water would be saline and therefore unsuitable for uncontrolled release to adjacent creeks other than in accordance with the Hunter River Salinity Trading Scheme (HRSTS). However, there are a number of mine water supply agreements in place between Integra and other nearby mines in the area which would ensure that water supply would be readily balanced, with any surface water discharged in accordance with the HRSTS.

The Department considers there to be sufficient capacity in the mine water sharing scheme to accommodated the predicted inputs from the project and is satisfied that the project would not

have a significant impact on water availability and water sharing the locality. A condition is recommended requiring Integra to maintain a detailed water balance for the mine.

Final Void Water Quality
In the event that the final void remains open at the completion of mining, the water would gradually rise until equilibrium between water inputs and outputs in established in between 100 and 300 years. During this time, there would be net inflows of saline groundwater to the final void and, following evaporation, the concentration of salt in the principal void lake would significantly increase. In order to address this issue, Integra has modified the mine design and intends to backfill the final void through the emplacement of reject material from the CHPP or breaker stone from its underground mining operation.

Conclusion
The Department has reviewed the surface water and groundwater assessments in consultation with DWE and concludes that the project would not significantly impact existing local and regional surface water and groundwater resources.

Furthermore, the Department believes that Integra has demonstrated that it would have a sufficient and secure supply of water for the course of the project and supports the continued sharing of water between mines to reduce the demand on competing water resources, such as the Hunter River.

The Department has recommended conditions that require the company to prepare and implement a water management plan for the project in consultation with DWE. This requires a sub-series of water management and monitoring programs to be produced, together with a surface water and groundwater response plan, which includes contingency procedures that would be triggered should any unexpected impacts on local and regional water sources occur.

5.5 Biodiversity

Issue
The project would disturb approximately 155 hectares of land, and include the clearing of 75 hectares of native vegetation.

Consideration
The EA includes a two-part flora survey and assessment prepared by Geoff Cunningham Natural Resource Consultants Pty Ltd, which describes the vegetation communities in and around the project site, sets out the anticipated impacts from the project, and compares them against the relative biodiversity values of the offset areas being provided – see below. Similarly, a fauna survey and assessment was undertaken by Countrywide Ecological Service to identify the likely resultant impacts upon potential fauna habitat as a result of the project, particularly upon threatened species.

The survey area excluded the proposed Coal Haul Road Route Corridors D and E (the existing RL100 Haul Route) and the CHPP and associated facilities. These areas are either currently used as part of ongoing mining operations and/or areas that have been previously subject to intense mining related disturbance. It is acknowledged that there would be limited, if any, flora and fauna values present within these areas. Consequently, the survey area used for the assessment comprised the northern portion of the project site (excluding the said areas of disturbance), together with the biodiversity offset lands that have been offered by Integra to offset project-induced impacts to existing biodiversity – see below.

Within the survey area, there is approximately 535 hectares of vegetation, of which 382 hectares is found within the project area. 247 hectares would remain undisturbed by the project, but 135 hectares of vegetation (out of a total impacted land area of 155 hectares) would be directly impacted by the project. 60 hectares of this impacted area is either rehabilitated disturbed land (48 hectares) or land which is disturbed by and currently in use for mining operations (12 hectares). These areas are generally devoid of tree and shrub cover and have limited biodiversity values. However, the remaining 75 hectares of native vegetation would be cleared to accommodate the project. The types of vegetation communities comprise:

- 6.1 hectares of Tussock Grassland;
- 0.7 hectares of Regenerating Native Woodland / Shrubland; and

- 68.3 hectares of Narrow-leaved Ironbark – Spotted Gum – Forest Red Gum.

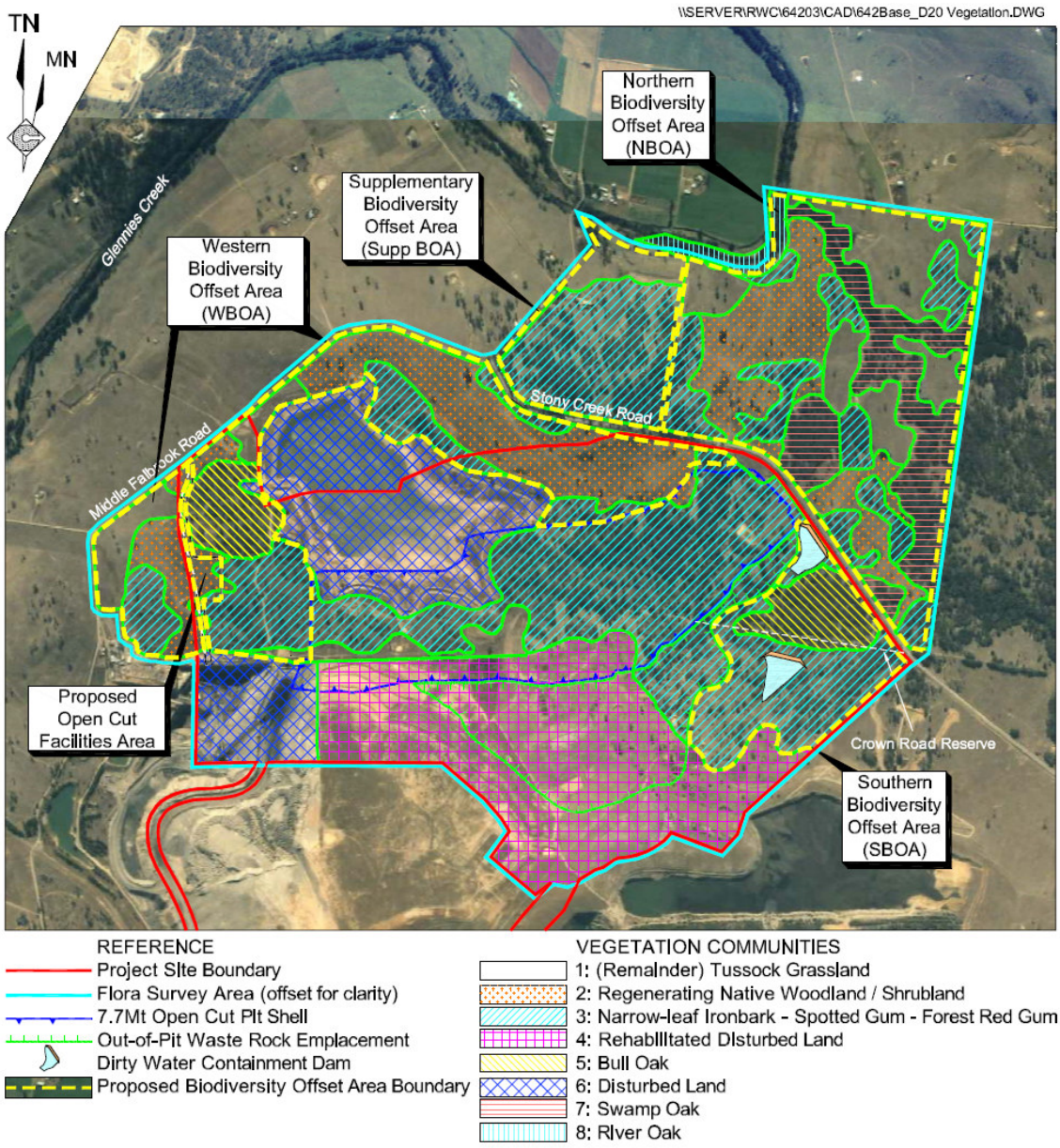


Figure 6: Vegetation Communities within the Study Area

No threatened flora species, endangered flora populations or endangered ecological communities under the *Threatened Species Conservation Act 1995* (TSC Act) or *Environmental Protection and Biodiversity Act* (EPBC Act) have been recorded within the survey area as part of previous studies and none were recorded during the present field study. One species found within the open cut area, the Western Golden Wattle, is listed as threatened in the Hunter Bushland Resource Kit (HCMT, 2003). This species would be included in the species mix to be but this species would be included in the species mix to be replanted/reseeded during post mining rehabilitation activities.

The same survey area was used to determine the nature of existing fauna habitats which could be affected by the project. The assessment found that once the existing mine disturbance area (46 hectares) is subtracted from the total area to be disturbed within the project area (135 hectares), some 89 hectares of fauna habitat would be removed. This comprises:

- 3.8 hectares of open pastures;
- 34.3 hectares open woodland;
- 42.4 hectares of woodland; and
- 8.7 hectares of wetlands/dams.

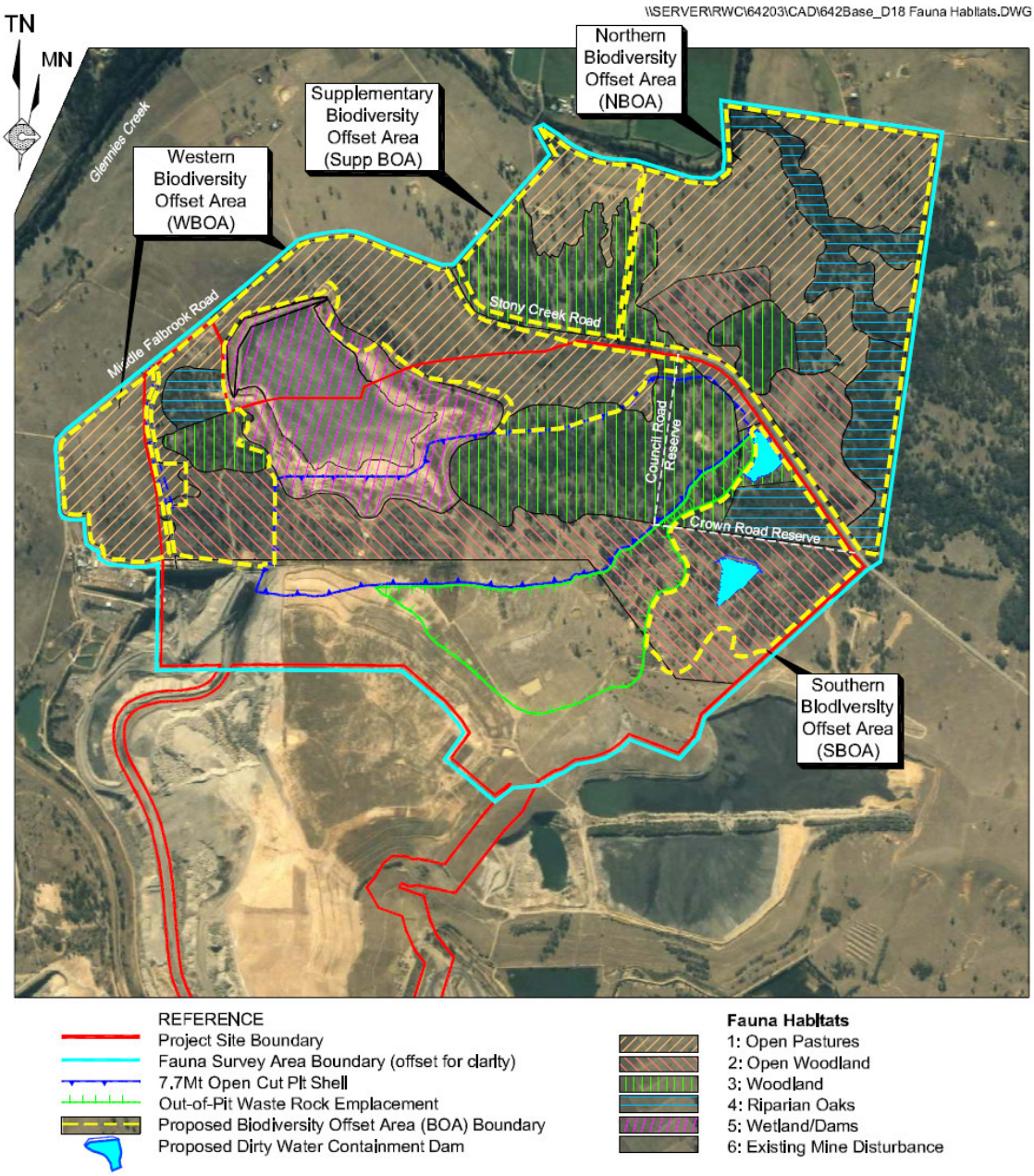


Figure 7: Fauna Habitats within the Study Area

A total of 106 fauna species were either identified during surveys or have the potential to inhabit the survey area. These comprise 9 amphibians, 61 birds, 25 mammals and 11 reptiles. Of these, 5 were identified as threatened species under either the TSC Act or EPBC Act, comprising 1 bird species (Grey-crowned Babbler) and 4 mammals (Eastern Freetail-bat, Eastern Bentwing-bat, Brush-tailed Phascogale and Grey-headed Flying-fox). The EA provides an assessment of the likely impact of the project upon these species against relevant DECC guidelines. It is concluded that the project would not adversely impact on the biodiversity values of these threatened species, provided Species Management Plans are established and other management measures are implemented to minimise key threatening processes.

As part of the project, Integra has sought to manage and mitigate impacts to existing flora and fauna values prior to, during and beyond the life of the project. This includes siting mine infrastructure and out-of-pit emplacement area on previously disturbed land/cleared grazing land, preserving/re-vegetating areas known to inhabit threatened species, livestock destocking, fencing and flora and fauna relocation strategies and careful management of post-mining rehabilitation and landscape works. A commitment has also been made to undertake

remediation works within the Glennies Creek Riparian Zone, subject to gaining the necessary approvals and agreement with landowners.

DECC is concerned that the assessment of threatened species within the EA does not fully comply with relevant guidelines for threatened species for three primary reasons. Firstly, the EA provides limited or poor quantitative or distributional data on specific habitat features (e.g. hollow bearing trees, stags and feed-trees). Secondly, a full description of the likely known impacts on threatened species has not been provided, such as fragmentation of corridors, reduction of existing remnants and indirect impacts associated with the mining operation. Thirdly, the fauna survey failed to detect certain threatened species known to inhabit the vegetation types present within the area and DECC disagrees with the justification used to eliminate them.

In the light of this, DECC has assumed that the project area provides optimal habitat for all likely threatened species, there will be significant indirect impacts associated with the project and all threatened fauna species recorded or likely to occur within the study area and/or project area. Consequently, DECC requires provision of a suitable offset to compensate for the direct loss of vegetation communities and resultant disturbance to fauna habitat.

Integra has made a commitment to provide a biodiversity offset strategy. The strategy is built around preserving and enhancing 3 land parcels within the project boundary, which are known as the northern (121 hectares), southern (39 hectares), western (94 hectares) biodiversity offset areas. An additional supplementary biodiversity offset area is also to be provided, which comprises some 33 hectares and lies outside of the project area (see Figures 5 and 6). Furthermore, to supplement this, Integra has made a commitment to the planting of seed over 10 hectares within the northern and supplementary biodiversity areas with seedlings that are directly representative to the more significant vegetation species that would be removed.

Table 7: Vegetation Communities within the Areas to be Disturbed Compared to the Biodiversity Offset Areas (BOAs)

Vegetation Community	***Area to be Disturbed***	***Northern BOA***	***Southern BOA***	***Western BOA***	***Supp BOA***	***Total – All BOAs***
Tussock Grassland	6.1	28.4	0	10.2	5.8	44.4
Regenerating Native Woodland/Shrub	0.7	30.9	0	43.1	0	74
Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum	68.3	26.9	27.8	30.8	27.6	113.1
Total – Native Vegetation	**75.1**	**86.2**	**27.8**	**84.1**	**33.4**	**231.5**
Rehabilitated Disturbed Land	47.6	0	0	0	0	0
Bull Oak	0	0	11.1	9.8	0	20.9
Swamp Oak	0	33.4	0	0	0	33.4
River Oak	0	1.5	0	0	0	1.5
Total – Other Vegetation	**47.6**	**34.9**	**11.1**	**9.8**	**0**	**55.8**
Total – All Areas	**122.7**	**121.1**	**38.9**	**93.9**	**33.4**	**287.3**

On a quantitative basis, the biodiversity offset strategy appears to be fairly generous for a project of this scale (>3:1 for native vegetation and >2.3:1 project-wide). However, DECC is concerned that the offset being offered would not necessarily constitute *"like-for-like or better"* conservation outcomes and does not therefore fully conform to its current guidelines and principles for the following reasons:

- parts of the Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum mapped in the Western and Northern BOAs is quite open (<20% cover) and large patches (30 to 40ha) that have been mapped as forest are in fact tussock grasslands (or regenerating shrubland) with scattered or small clumps of trees;
- the project would isolate and fragment the large forested remnant of Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum which will reduce the ability of less mobile fauna to move across the landscape due to loss of local corridor links, resulting in smaller, isolated patches of vegetation, rather than a single remnant with connective value;
- the proposed offset areas themselves are isolated and fragmented into numerous small patches which are separated by areas of modified tussock grassland and have had their canopy cleared or areas of thinned forested or woodland vegetation types;

- aside from the smaller patches of River Oak and Bull Oak communities being offered, the quality of the vegetation being offered as an offset is in poor or average condition and lacking the structural definition of woodland or forested communities, and represents regenerating shrubland or derived (secondary) tussock grasslands which have been modified through clearing, thinning or agricultural practices (e.g. grazing); and
- Integra considers that the habitat value of the area proposed to be cleared has been enhanced by recent management by them, and they should not be penalised for this.

In the light of this and of particular concern to DECC, is the loss of Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum as a result of the project. This species is considered to be significant within the Upper Hunter region as it is a distant relative of the Lower Hunter Spotted Gum – Ironbark Forest, an Endangered Ecological Community (EEC) under the TSC Act. DECC recommends that further offsets are required to compensate for this loss by increasing the quantity of Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum from 113 hectares to 140 hectares.

Integra disagrees with the assessment methodology used by DECC to determine the amount of native vegetation required to satisfactorily offset the respective removal of this native vegetation and maintains that the offset strategy put forward by the project does in fact meet DECC's current guidelines. Notwithstanding this, the company is willing to accept DECC's recommendation, provided it is afforded sufficient time to identify a suitable additional offset area, obtain the necessary concurrence from DECC and negotiate the purchase of an additional offset area.

Conclusion

The Department is satisfied that by increasing the amount of the nature of Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum, coupled with the other management and mitigation measures proposed within the EA and/or statement of commitments, that these impacts can be satisfactorily mitigated and managed.

The Department recommends that Integra should be required to:

- provide a further offset to ensure that at least 140 hectares of Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum (or a suitable equivalent to be agreed with DECC);
- develop a strategy for the management and long term protection of the biodiversity offset areas with a particular focus on improving the quality of vegetation within these areas;
- include specific provisions within the offset strategy to enhance and conserve significant plant communities, particularly Hunter Lowland Redgum Forest;
- provide for the long term conservation of the biodiversity offset areas; and
- lodge a substantial conservation bond for the biodiversity offset areas.

5.6 Rehabilitation, Final Landforms and Voids

Issue

The project would generate waste rock that would require disposal and the post-mined area and final pit void would need to be rehabilitated.

Consideration

Over the life of the project, a waste rock volume of about 43.9 million bank cubic metres (Mbcm) would be removed from the open cut pit. This figure includes 1.5 million loose cubic metres (Mlcm) of material which forms part of the existing waste rock emplacement that would require relocation to permit mining along the southwestern margin of the open cut. Once mined, the total volume of waste rock would "swell" by approximately 25%, to 54.6Mlcm, which would require placement either in or out of pit.

The project has sought to maximise feasible in-pit placement of waste rock with 42.5Mlcm of material (78%) to be placed in-pit to partially fill the mined void to surface level and the remaining 12.1Mlcm (22%) would be placed above the pre-mine surface in an out-of-pit emplacement area.

Due to the proposed sequence and timing of mining, as well as the shape of the open cut, the majority of the waste rock would initially be emplaced out-of-pit. This would result in the emplacement footprint reaching its maximum size mid way through the project life (Year 3). As

the open cut progresses, the waste rock would be primarily placed in pit as the post-mined areas develop.

Several emplacement designs were considered within the EA. In terms of height and area, the final landform design aims to strike an appropriate balance between visual impact, impacts to vegetation communities and potential fauna habitat areas and providing a safe and stable final landform that has the maximum successful rehabilitation potential.

The emplacement would be designed and shaped to emulate and blend into the existing topography, subsoil and topsoil would be replaced and drainage installed. Finally, the final surface would be propagated with a selection of seed collected on or adjacent to the project site from the native vegetation communities to be disturbed by the project.

The final landform and biodiversity areas would be consistent with the *Synoptic Plan: Integrated Landscapes for Coal Rehabilitation in the Hunter Valley* and the *Glennies Creek Catchment Management Study – Management Strategy*.

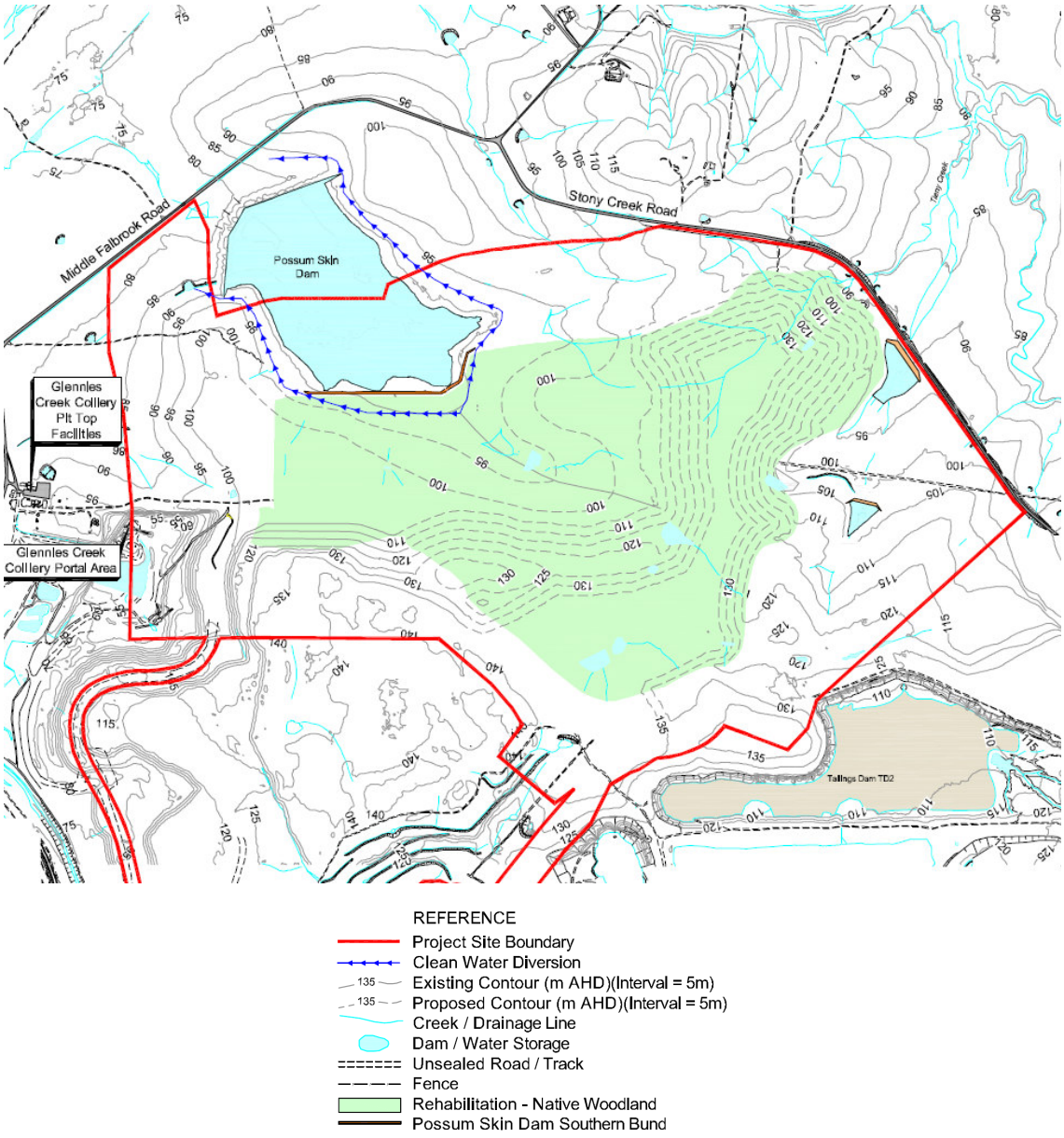


Figure 8: Conceptual Final Landform

At the end of the project life, there would be an open cut void of approximately 4.9 million cubic metres at the western end of the open cut at the completion of coal extraction activities. Integra intends to fill the final void with to the existing surface or slightly above through the

emplacement of reject material from the CHPP, and/or breaker stone from its pre-treatment plant. If required, some waste rock would be transported to existing tailings dams for use as a capping material.

Integra adopted the majority of recommendations made by DPI within its revised statement of commitments to address mine safety, stockpiling methods and the management of the amenity bund construction process. These recommendations would be implemented by the company through the updating its Mining Operations Plan (MOP), and/or through the imposition of recommended conditions.

However, DPI's primary concern was the location of the waste rock emplacement upon an existing area of previously disturbed land under rehabilitation and undisturbed land. DPI's general policy is that mining projects generally avoid such areas unless it can be demonstrated that other alternatives are unfeasible. In addition to the alternatives briefly considered within the EA, it was recommended that the company considers all other alternatives within the complex as a whole, including two other alternative waste rock emplacement locations, namely direct haulage and stockpiling for use as tailings dam capping material and direct haulage and emplacement to the South Pit.

In response to this, Integra subsequently met with DPI to discuss a range of options for waste rock disposal on this basis. It was shown that these options were not viable due to operational and logistical reasons, resultant potential sterilisation of coal resources and associated residual environmental impacts. DPI accepted that these options had been considered and discounted for these reasons and has no outstanding issues with the project.

Conclusion
The Department is satisfied with Integra's short and medium rehabilitation plans and considers that the longer term rehabilitation and final landform plans are achievable and provide for good integration with the surrounding environment. Nonetheless, the Department has recommended conditions requiring Integra to prepare and implement a detailed landscape management plan, which includes a rehabilitation and offset management plan, a final void management plan and a mine closure plan.

5.7 Other Issues
The project is likely to generate a range of other environmental impacts – including Aboriginal and non-Aboriginal heritage, visual amenity, traffic and transportation, greenhouse gas, spontaneous combustion and socio-economics. However, these impacts are not predicted to be significant, and the Department is satisfied that they can be controlled, mitigated or managed either through statements of commitments made by Integra or the imposition of appropriate conditions of approval.

Table 8: Other Impacts

Issue	***Consideration***	***Conclusion***
Aboriginal Heritage	▪ Field assessment conducted over two days with representatives of the local Aboriginal community identified 19 sites that are to be destroyed by the project. ▪ The sites are characterised by isolated or low density artefact scatters, consisting mostly of flakes that have primarily been debitage and unlikely to have been used.	▪ Integra has put forward a number of statements of commitment to mitigate and manage Aboriginal heritage impacts through recording, salvage and conservation of objects/sites in consultation with the local Aboriginal community. ▪ The Department, in consultation with DECC, has included a condition of approval to formalise this arrangement by requiring the company to prepare and implementation an Aboriginal Heritage Management Plan.
Non-Aboriginal Heritage	▪ A search of National, Stage and local heritage lists was carried out during 2006 and 2007 to identify any non-Aboriginal heritage significance within, or in close proximity to the	▪ Potential impacts to the Middle Falbrook Road Bridge includes structural damage due to increased levels of heavy traffic or ground vibration or airblast related to

Issue	***Consideration***	***Conclusion***
	project site. ▪ One site was identified, namely Middle Falbrook Road Bridge over Glennies Creek, which is listed on Australian and State Heritage Registers. ▪ Other heritage features are located too from the project site to be affected by the project.	blasting. ▪ The EA found that neither traffic nor blasting impacts would affect the integrity of the bridge. ▪ The Department concurs with this conclusion.
Visual Amenity	▪ The EA included a visual impact assessment which showed that there would be full to no visibility of the project site from Middle Falbrook Road, Glennies Creek Road and elevated sections of the New England Highway. ▪ A number of submissions from local residents objected to visual impacts from mining area including the open cut pit, coal and overburden stockpiles, emplacement areas and operational lighting impacts. ▪ Both the Department and Integra notes that the mine would be visible from some sensitive receivers.	▪ Integra proposed a number of measures within the EA to manage and mitigation visual impacts during the daytime and nighttime period, most notably the development of an amenity bund on Stony Creek Road. ▪ The Department recommends that report be prepared which identifies all residences that are likely to be significantly affected by the mine and the company provides additional mitigation measures to reduce the visibility of the mine from their properties.
Traffic and Transportation	▪ A site intersection for the project is proposed between of Middle Falbrook Road to service the mine access road. ▪ The transportation assessment indicated that the roads surrounding the mine are in good working condition and operate well within current guidelines. ▪ The anticipated traffic volumes from the project would be well within RTA guidelines and the impact of additional traffic is not considered significant, albeit some short-term impact would be expected on users of Middle Falbrook Road during the construction of the new intersection.	▪ The Department notes that Integra have completed the upgrades of Stony Creek Road and Middle Falbrook Road (between Stony Creek Road and Integra's underground facilities) as required under the Glennies Creek development consent. ▪ It is recommended that Integra be required to design and construct the site intersection to the satisfaction of Council in accordance with current guidelines and requirements. ▪ The Department is satisfied that traffic impacts from the project would be negligible, but recommends that the company be required to prepare and implement a Construction Traffic Management Plan for the project to manage short-term impacts during the construction phase.
Greenhouse Gas	▪ Integra undertook a GHG assessment which examined Scope 1, 2 and 3 GHG emissions from the project. ▪ It was found that GHG emissions from the project are estimated to be 0.008% of global CO2-equivalent annual emissions and would contribute to 0.00001^{o}C of global increase in temperatures. ▪ It was concluded that the effects of the emissions are negligible in the context of global greenhouse gas emissions, and would comply with the principles of ESD.	▪ The Department notes that Integra currently participates in several activities to limit GHG emissions including: ➢ the supply of coal bed methane to the nearby Envirogen methane-fired power station; ➢ membership of the Greenhouse Challenge Plus scheme and the Energy Efficiency Opportunities program; and ➢ the preparation and implementation of an Energy Savings Action Plan. ▪ The Department recommends that conditions be imposed to further mitigate, manage or offset direct and indirect GHG emissions.
Spontaneous	▪ Self heating temperature and R70	▪ The EA states that potential for

Issue	Consideration	Conclusion
Combustion	testing on coal from each seam to be extracted showed that there is a low-medium and medium propensity for spontaneous combustion. ▪ This, coupled with the fact that Integra operation has never identified incidents of spontaneous combustion since production commenced in the early 1990's, suggests that the risk of spontaneous combustion is low.	spontaneous combustion in ROM stockpiles would be minimised through the application of standard stockpile management principles. ▪ The Department notes that this issue is addressed through other legislation and is satisfied that no specific action within the project approval is required.
Socio-economics	▪ The project would generate 110 full time jobs within the Hunter Valley region with an additional 68 positions being created in the rest of NSW. ▪ In economic terms, the quantifiable net impact of the project would be $252.5 million, comprising the economic benefit from the operation of the mine valued at $253.9 million (from additional household expenditure) minus the environmental costs of greenhouse gas emissions and surface water, totalling $1.4 million.	▪ The Department has recommended a condition that would require Integra to enter into an agreement with Council to provide for a reasonable level of development contributions for the mine.

Based on this consideration, the Department is satisfied that all environmental impacts are able to be adequately mitigated, managed, offset and/or compensated for. The Department has recommended a range of comprehensive conditions to ensure this occurs.

6. RECOMMENDED CONDITIONS

The Department has prepared recommended conditions of approval for the project (see Appendix B), and summarised these conditions in Appendix A.

These conditions are required to:
- prevent, minimise, and/or offset adverse impacts of the project;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Integra has reviewed and generally accepts the recommended conditions. The Department believes the conditions reflect current best practice for the regulation of coal mines in NSW.

7. CONCLUSION

The Department has assessed the project application, EA, submissions on the project, and Integra's response to submissions in accordance with the relevant requirements of the EP&A Act, including the objects of the Act and the principles of ecologically sustainable development.

The project would result in some adverse residual environmental impacts, most notably by way of operational noise emissions which are predicted to significantly affect 2 private properties and moderately affect a further 8 private properties. The mine's dust emissions are predicted to significantly affect a further 1 property.

Further, existing noise and dust levels in the region are approaching, and on some occasions have exceeded, applicable noise and dust criteria. However, following detailed assessment the Department is satisfied that the incremental and cumulative impacts associated with the mine as modified are able to be adequately mitigated, managed, offset and/or compensated for.

The project would disturb approximately 155 hectares of land, and include the clearing of 75 hectares of native Narrow-leaf Ironbark – Spotted Gum – Forest Red Tree Gum, a significant species in the region. An offset has been provided by Integra to compensate for this loss.

Finally, this assessment has found that the project offers a number of social and economic benefits for the region, as it would:

- extend the life of the Integra mining complex;
- use existing facilities at the mining complex more efficiently;
- provide jobs for up to 180 people over approximately 10 years;
- attract $7 million worth of capital investment to the region;
- induce additional regional economic benefits through the increased spending of both Integra and its employees; and
- generate significant royalty and tax income for the Government.

On balance, the Department believes that the project represents a logical extension of Integra's existing mining operations, is satisfied that its benefits sufficiently outweigh its costs and is able to be conducted in a manner that is broadly consistent with the objects of the EP&A Act.

Consequently, it believes the project is in the public interest, and should be approved subject to conditions.

8. RECOMMENDATION

It is RECOMMENDED that the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under Section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached project approval (see Tag "B").

David Kitto	Chris Wilson	Sam Haddad
Director, MDA	**Executive Director, MPA**	**Director-General**

APPENDIX A - SUMMARY OF CONDITIONS OF APPROVAL

Aspect	Condition	Requirement(s)
Schedule 2: Administrative Conditions		
Minimising Harm	1	Obligation to Minimise Harm to Environment
Terms of Approval	2-4	Project to be carried out in accordance with project documentation
Limits of Approval	5	Approval for mining restricted to 10 years
	6	Restriction on production to 1.5 million tonnes of coal a year
	7	Progressive submission of any environmental management plan or monitoring program
	8	Structural adequacy of buildings and structures
	9	Operation of plant and equipment
	10	Requirement for provision of development contributions
Schedule 3: Specific Environmental Conditions		
Land Acquisition	1	Acquisition rights for significantly affected privately owned land
Noise	2-5	Noise impact assessment and acquisition criteria
	6	Additional noise mitigation measures for noise affected properties
	7	Requirement to seek continual improvement of noise performance
	8	Noise Monitoring Program
	9	Approval for construction restricted to 3 months
	10	Construction Noise Management Plan
Blasting	11-12	Blast impact assessment criteria
	13-15	Restriction on blasting hours and frequency of blasting
	16-19	Blast related operating conditions, including restriction on blasting within 500m of privately owned land, requirement for Road Closure Management Plan, and requirement for public notification of blasting operations
	20-21	Rights for structural property inspections for properties potentially affected by blasting
	22	Blast Monitoring Program
Air Quality	23-24	Air quality impact assessment criteria and acquisition criteria
	25	Requirement to minimise air quality impacts
	26-27	Air Quality Monitoring Program, and meteorological monitoring
Surface and Ground Water	28	Restriction on discharging mine water from the site
	29	Site Water Management Plan
Rehabilitation and Landscape Management	30	Requirement to implement an Offset Strategy, and to arrange for long term security of the offset areas
	31	Requirement to progressively rehabilitate the site
	32-35	Landscape Management Plan
	36	Requirement for Conservation and Biodiversity Bond
Heritage	37	Aboriginal Cultural Heritage Management Plan
Traffic and Transport	38	Requirement to keep records of coal transported from the site
	39	Construction Traffic Management Plan
	40	Requirement to design and construction road intersection
Visual Impact	41	Requirement to minimise mine's visual and lighting impacts
	42-44	Identification of affected properties and implementation of visual impact mitigation measures
Greenhouse Gas	45-46	Greenhouse and Energy Efficiency Plan
Waste Minimisation	47	Requirement to monitor and minimise waste
Schedule 4: Additional Procedures		
Notification of Landowners	1-3	Requirement to notify landowners of acquisition rights, exceedances of relevant criteria during monitoring, and the potential health and amenity impacts associated with exposure to fine particulates
Independent Review	4-8	Procedures for independent review if landowners believe the mine to be exceeding relevant impact assessment criteria
Land Acquisition	9-11	Procedures for land acquisition
Schedule 5: Environmental Management, Monitoring Auditing and Reporting		
Environmental Management Strategy and Program	1	Preparation and implementation of a consolidated Environmental Management Strategy and Environmental Management Program
Incident Reporting	2-3	Requirement to report incidents
Annual Reporting	4	Annual Environmental Management Report
Auditing	5-7	Requirement to undertake regular independent environmental audits
CCC	8	Requirement for Community Consultative Committee
Access to Information	9-10	Requirement to publicly report environmental management plans/programs/strategies, and monitoring results

APPENDIX B – CONDITIONS OF APPROVAL

APPENDIX C – CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

1 State Environmental Planning Policy (SEPP) No.33 – Hazardous and Offensive Development

The Department is satisfied that the project is not potentially hazardous or offensive, and that the proposal is generally consistent with the aims, objectives, and provisions of SEPP 33.

2 SEPP No. 44 – Koala Habitat Protection

The EA indicates that the project is unlikely to impact on core or potential koala habitat. The Department is satisfied that the project is generally consistent with the aims, objectives, and provisions of SEPP 44.

3 SEPP No. 55 – Remediation of Land

The Department is satisfied that the Glennies Creek coal mine area does not have a significant risk of contamination given its historical land use, and that the project is generally consistent with the aims, objectives, and provisions of SEPP 55.

4 SEPP (Mining, Petroleum Production and Extractive Industries) 2007

Under Clause 7 of the Mining SEPP, development for the purpose of mining is permissible with consent on land where development for the purposes of agriculture or industry may be carried out, or on land that is (immediately before the commencement of the SEPP) the subject of a mining lease under the *Mining Act 1992*. The land the subject of the current application satisfies both these criteria.

Part 3 of the SEPP lists a number of matters that a consent authority must consider before determining an application for consent for development for the purposes of mining, including:

- compatibility with other land uses;
- natural resource management and environmental management;
- resource recovery;
- transport; and
- rehabilitation.

The Department has considered all of these matters in its assessment report. Based on this assessment, the Department is satisfied that the project is able to be managed in a manner that is generally consistent with the aims, objectives, and provisions of the Mining SEPP.

5 Hunter Regional Environmental Plan (REP) 1989

Clause 7 of the Hunter REP requires the Minister to consider content of the Hunter REP background report and the objectives, policies and principles contained in the REP and relevant to the proposal. The objectives of the REP in relation mineral resources are contained in clause 39 of the REP, include to:

(a) manage the coal and other mineral resources and extractive materials of the region in a co-ordinated manner so as to ensure that adverse impacts on the environment and the population likely to be affected are minimised,

(b) ensure that development proposals for land containing coal and other mineral resources and extractive materials are assessed in relation to the potential problems of rendering those resources unavailable, and

(c) ensure that the transportation of coal and other mineral resources and extractive materials has minimal adverse impact on the community.

Clause 41(1) of the REP provides that the Minister, in considering the application:

(a) should consider the conservation value of the land concerned and apply conditions which are relevant to the appropriate post-mining or extraction land use,

(b) should, in respect of extraction from river banks or channels, ensure that instability and erosion are avoided,
(c) should consult with officers of the Department of Mineral Resources, and of the Department of Agriculture, to determine appropriate post-mining or extraction land uses,
(d) should ensure the progressive rehabilitation of mined or extracted areas,
(e) should minimise the likelihood and extent of a final void and the impact of any final void, or facilitate other appropriate options for the use of any final void,
(f) should minimise any adverse effect of the proposed development on groundwater and surface water quality and flow characteristics,
(g) should consider any likely impacts on air quality and the acoustical environment,
(h) should be satisfied that an environmentally acceptable mode of transport is available, and
(i) should have regard to any relevant Total Catchment Management strategies.

The Department has considered these matters in its assessment report. Based on this assessment, the Department is satisfied that project is able to be managed in a manner that is generally consistent with the aims, objectives, and provisions of the REP.

6 Singleton Local Environmental Plan 1996

The land subject to the application is zoned Rural 1(a) under the *Singleton Local Environmental Plan 1996*. Mining is permissible in this zone with consent.

APPENDIX D – RESPONSE TO SUBMISSIONS

APPENDIX E – SUBMISSIONS

APPENDIX F – ENVIRONMENTAL ASSESSMENT