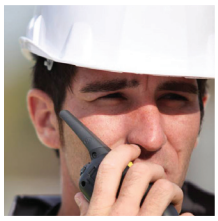
MAULES CREEK COAL MINE

Project Approval Modification Environmental Assessment

April 2013





Hansen Bailey
ENVIRONMENTAL CONSULTANTS

WHITEHAVEN

MAULES CREEK COAL MINE

PROJECT APPROVAL MODIFICATION

ENVIRONMENTAL ASSESSMENT

Prepared by:

HANSEN BAILEY
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SINGLETON NSW 2330

April 2013

for:

MAULES CREEK COAL PTY LIMITED
121 Merton Street
BOGGABRI NSW 2382

ENVIRONMENTAL ASSESSMENT STATEMENT

Submission of Environmental Assessment (EA)

Under Section 75W of the *Environmental Planning and Assessment Act 1979*

Modification EA Prepared by	
Name:	James Bailey
Qualifications:	B. Natural Resources, MBA
Address:	Hansen Bailey Pty Limited
	PO Box 473
	SINGLETON NSW 2330
In Respect Of:	Maules Creek Coal Mine Project Approval Modification EA
Applicant Name:	Maules Creek Coal Pty Ltd
Applicant Address:	121 Merton Street
	BOGGABRI NSW 2382
Proposed modification sought:	Project Approval Modification as described in Section 3 of this EA.
Environmental Assessment:	An EA for this Modification is attached.

Certification: I certify that I have prepared the contents of this EA, and to the best of my knowledge:

- It is in accordance with Section 75W of the *Environmental Planning and Assessment Act 1979*;
- Meets the form and content of Clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*;
- It contains all available information that is relevant to the environmental assessment of the activity to which this Modification EA relates; and
- The information contained in this Modification EA is neither false nor misleading.

Signature:

Name: James Bailey
Director

Date: April 2013

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1 OVERVIEW

1.1 BACKGROUND

The Maules Creek Coal Mine is located in the Gunnedah Coal basin approximately 20 km to the north-east of Boggabri in the north-west region of NSW within the Narrabri Local Government Area (LGA) (see Figure 1). The Maules Creek Coal Mine is owned by Maules Creek Coal Pty Limited (MCC), a joint venture between Aston Coal 2 Pty Limited (a wholly owned subsidiary of Whitehaven Coal Limited (Whitehaven)) (75%), ICRA MC Pty Ltd (15%) and J-Power Australia Pty Limited (10%).

Aston Coal 2 Pty Limited was granted Project Approval (PA) 10_0138 on 23 October 2012 by the Planning Assessment Commission (PAC) under delegation of the Minister for Planning and Infrastructure. PA 10_0138 provides approval for the construction and operation of the Maules Creek Coal Mine for a period of 21 years, extracting coal at a rate of up to 13 Million tonnes per annum (Mtpa) Run of Mine (ROM) coal.

The *Maules Creek Coal Project Environmental Assessment* dated July 2011 (Maules Creek EA) (Hansen Bailey, 2011) is the supporting document to PA 10_0138 and describes the construction, operation and closure of the mine.

1.2 DOCUMENT PURPOSE

This Environmental Assessment document (Modification EA) has been prepared to support an application for the Modification of PA 10_0138 under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Modification seeks approval for the following development:

- Construction and operation of TransGrid's high voltage (132 kV) transmission line;
- Construction of TransGrid's Boggabri North 132 kV Switching Station;
- Minor extension of an existing low voltage (11 kV) transmission line to the Project Boundary to supplement power supplies; and
- Minor realignment of the Coal Handling and Preparation Plant (CHPP) including the product stockpiles and other associated facilities, based on the final engineering design, from that indicatively illustrated within the Maules Creek EA.

Operations under this Modification will be generally in accordance with those described in this Modification EA and consistent with the Maules Creek EA.

The activities will be located entirely on land the subject of PA 10_0138. Consequently, the environmental impact assessment of the development sought to be approved by this Modification application, adopts and draws from the studies undertaken for the Maules Creek EA. The reliance on these assessments will result in a materially conservative approach for the assessment of the environmental effects of the Maules Creek Coal Mine under this Modification.

1.3 MODIFICATION NEED

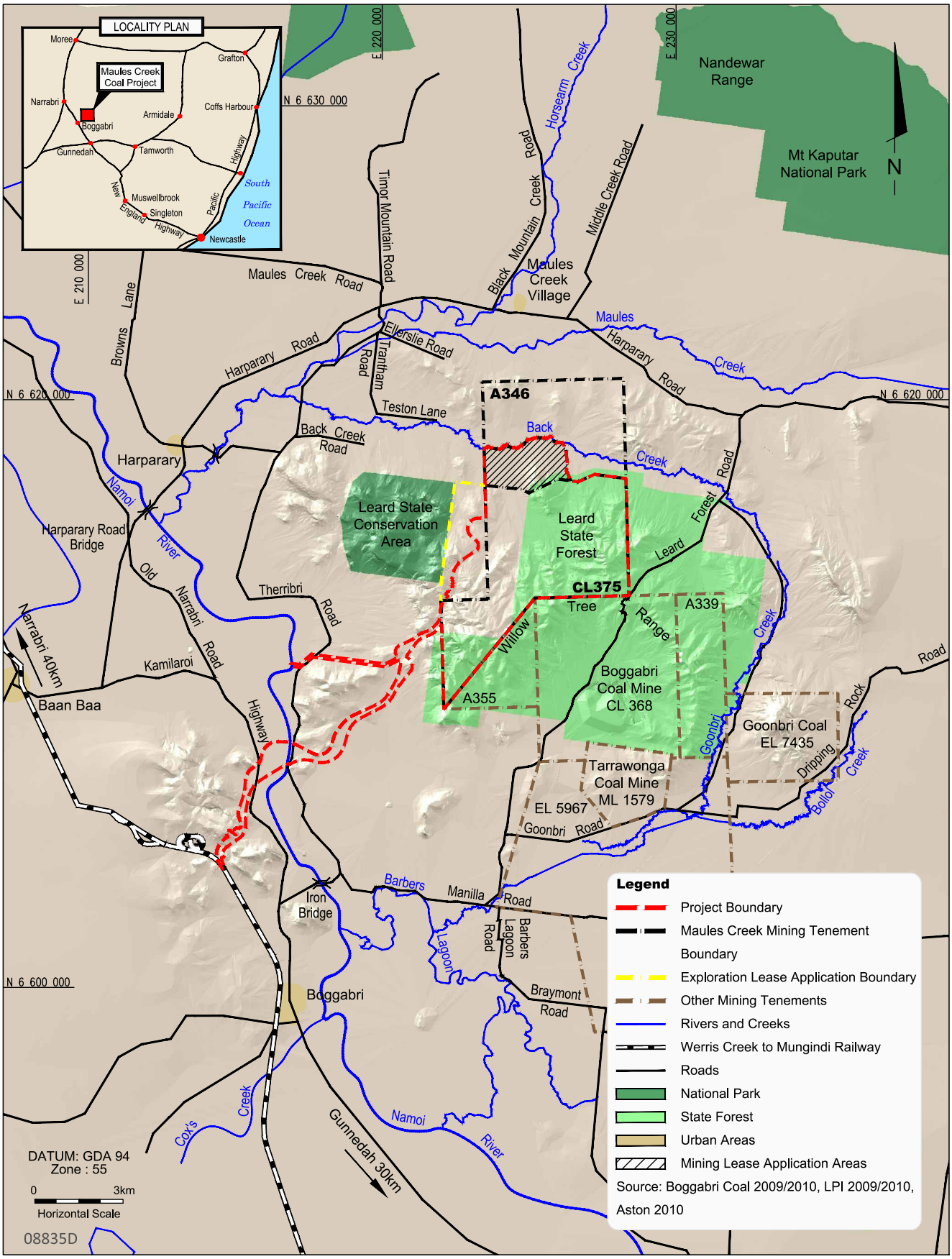
PA 10_0138 provides approval for the construction and operation of an open cut coal mine, associated transport and coal preparation, loading facilities and rail spur.

The Maules Creek EA which supports PA 10_0138 describes the 132 kV transmission lines and associated switching station to be constructed under a separate approval to be sought by TransGrid. At the time of drafting the Maules Creek EA, the design of the proposed transmission line and associated switching station had not been completed. The Modification is sought to obtain the approval for the construction and operation of the high voltage transmission lines and associated switching station.

This Modification also includes a minor extension of an existing 11 kV transmission line that will be used to supply a secondary power supply to the TransGrid switch yard as required by TransGrid. The minor extension is partially outside the Project Boundary, however on the same portion of land to which PA 10_0138 applies.

As described within Section 3.3 of the Maules Creek EA, the orientation of the CHPP and other associated facilities within the Project Disturbance Boundary may vary (from that illustrated within Figure 8 of the Maules Creek EA) depending on detailed engineering design. Further design work has now been undertaken and has resulted in a minor realignment of the CHPP area and other associated facilities from that indicatively illustrated within the Maules Creek EA. This minor realignment was necessary to provide for a safe foundation condition for the product coal stockpiles and will also provide a sufficient distance for the train load-out conveyor to be designed with a suitable and safe incline to the train load-out bin.

Further details on the Modification are presented in Section 3.



MAULES CREEK COAL MINE

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Regional Locality

FIGURE 1

2 APPROVED OPERATIONS

This section provides a summary of the approved operations at the Maules Creek Coal Mine relevant to this Modification as described within the Maules Creek EA and approved under PA 10_0138.

2.1 SUMMARY

The construction and operation of the Maules Creek Coal Mine is to be undertaken generally in accordance with PA 10_0138 and as described within the Maules Creek EA. Planning and organisation of the various construction activities associated with the Maules Creek Coal Mine are presently being undertaken during the preparation of this Modification EA, with construction activities planned to commence in the near future.

The Maules Creek Coal Mine has approval to mine coal until December 2034, including:

- The construction and operation of an open cut mining operation extracting up to 13 Mtpa ROM coal to the Templemore Seam;
- Open cut mining fleet including excavator / shovels and fleet of haul trucks, dozers, graders and water carts utilising up to 470 permanent employees;
- The construction and operation of a CHPP with a throughput capacity of 13 Mtpa ROM coal;
- The construction and operation of a Tailings Drying Area;
- The construction and operation of a rail spur, rail loop, associated load out facility and connection to the Werris Creek to Mungindi Railway Line;
- The construction and operation of a Mine Access Road;
- The construction and operation of administration, workshop and related facilities;
- The construction and operation of water management infrastructure including a water pipeline, pumping station and associated infrastructure for access to water from the Namoi River;
- The installation of supporting power and communications infrastructure; and
- The construction and operation of explosive magazine and explosives storage areas.

MCC holds two mining authorisations relevant to the mining operation, being Authorisation (A) 346 and Coal Lease (CL) 375 as shown on Figure 1. In addition to this, MCC has submitted a Mining Lease Application (MLA) 404 over a portion of A 346, and an Exploration Lease Application (ELA) 4408 over an area to the west of CL 375.

Maules Creek Coal Mine will be an open cut mining operation that will utilise a contemporary shovel and excavator operation, supported by a fleet of trucks. Topsoil will be initially stripped from the mining area and either utilised on available rehabilitation areas or stockpiled for later use. Overburden will be blasted prior to being removed by loader and / or excavator and trucks before proceeding with coal extraction. The fleet will then progress through the sequence to uncover each coal seam to be extracted. Mining will be conducted up to 24 hours per day, 7 days per week.

2.2 INFRASTRUCTURE

MCC has approval to construct the following surface facilities as indicatively shown on Figure 2:

- CHPP and associated facilities;
- Train loading facility;
- A rail spur and loop connecting to the Werris Creek to Mungindi Railway Line involving common infrastructure with other mines;
- Upgrade of local road access;
- Communications, water management and power reticulation;
- Explosives storage facilities; and
- Mine Infrastructure Area including workshop, administrative offices and support facilities.

Each is described below as it is relevant to this Modification.

2.2.1 Coal Handling and Transport

The Maules Creek EA described the construction and operation of a CHPP and associated facilities to handle and process up to 13 Mtpa ROM coal.

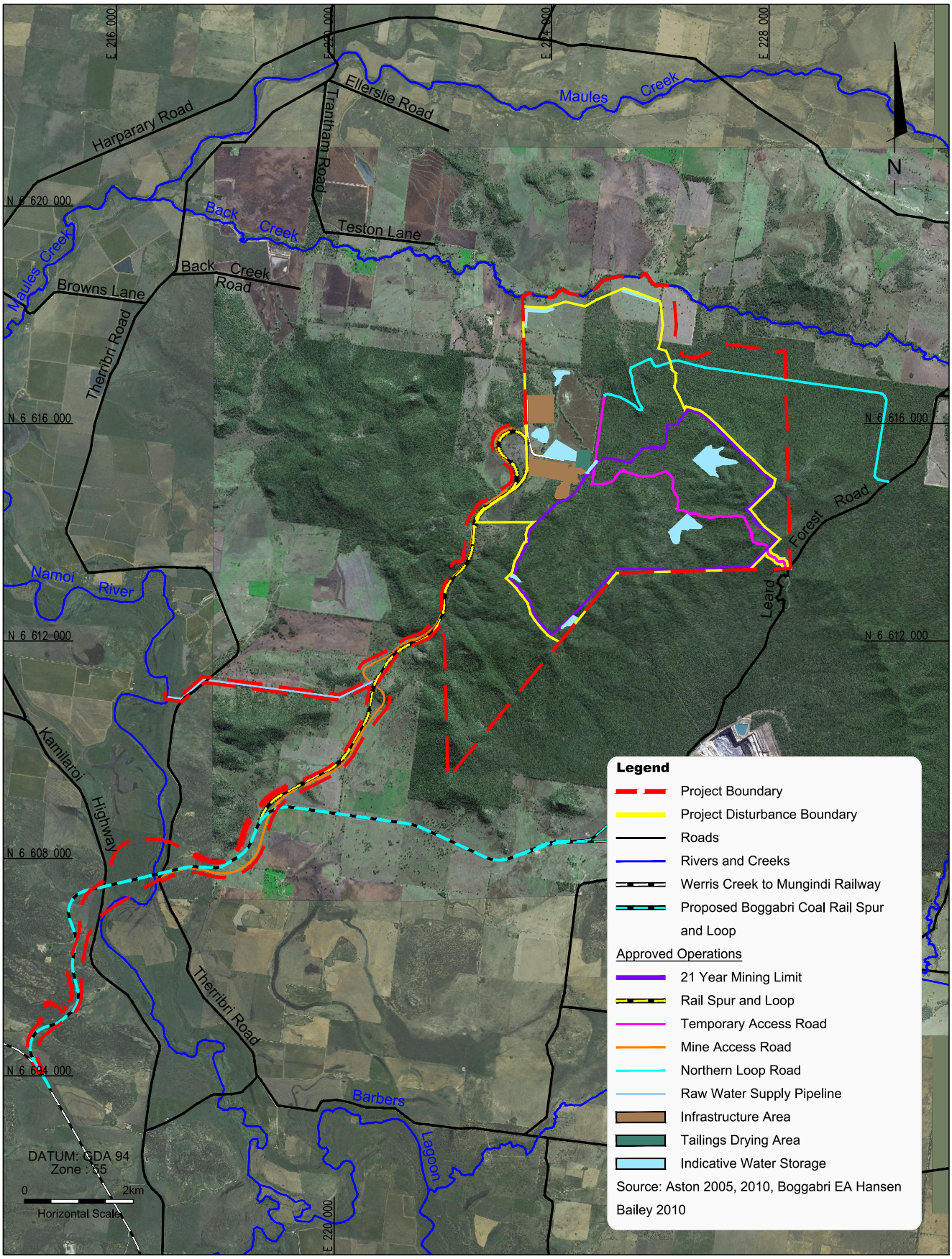
Figure 8 of the Maules Creek EA illustrated an indicative layout of the CHPP and associated facilities, as reproduced in Figure 2. However it was acknowledged in Section 3.3 of the Maules Creek EA that the orientation of the CHPP and associated facilities may vary depending upon the detailed engineering design of these facilities. In consideration of this likely realignment of the CHPP and associated facilities, the Project Disturbance Boundary was developed, assessed and appropriately mitigated for full disturbance.

Upon the commencement of mining operations, ROM coal will be delivered to the ROM coal pad, where it will either be fed directly into the ROM coal hoppers from the rear dump trucks or stockpiled for later feed to the ROM coal hoppers via front end loader. ROM coal will be fed through various sizing stations and either bypassed to the product coal stockpiles or fed via the CHPP surge bin to the CHPP for washing.

Ultrafine tailings reject material will be placed in the tailings drying areas until it reaches the desired moisture content, where the material will be removed by excavator into trucks for disposal within the active overburden emplacement areas (OEAs).

Once separated, coarse reject material will be conveyed to the coarse reject bin and then transported and deposited in OEAs.

Product coal will be transported around the CHPP complex and placed on the stockpile area utilising a network of conveyors, transfer stations and stackers. Product coal will be fed via conveyors to the Train Loading Facility where trains will travel via the Maules Creek Rail Spur, Shared Rail Spur and via the Werris Creek to Mungindi Railway Line to the Port of Newcastle for export.



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Approved Conceptual Infrastructure Layout

FIGURE 2

2.2.2 Power Reticulation

PA 10_0138 provides approval for the construction and use of various power reticulation components (transmission lines, switching stations, substations and distribution yards etc) within the Project Boundary.

At the time of preparing the Maules Creek EA, representatives of TransGrid were carrying out a detailed design of their high voltage transmission lines (132 kV) and associated switching station, which will provide a key source of electricity for the Maules Creek Coal Mine. This infrastructure was proposed to link in with the facilities to be utilised by the approved neighbouring Boggabri Coal Mine. The TransGrid transmission lines were proposed to link from the existing TransGrid infrastructure on the Kamilaroi Highway and continue within the Project Boundary in the vicinity of the Mine Access Road and Rail Spur.

Section 3.6 of the Maules Creek EA proposed that TransGrid would seek a separate planning approval for the construction of the high voltage transmission lines and associated switching station. As such, this infrastructure was not included in the Maules Creek EA and subsequently approved under PA 10_0138.

2.3 ENVIRONMENTAL MANAGEMENT SYSTEM

MCC has created and implemented an Environmental Management Strategy (EMS) that provides the framework to facilitate compliance with legal and other requirements (including statutory approval and stakeholder expectations).

A component of the EMS is the development and implementation of a number of Environmental Management Plans (EMPs) as required under various conditions within PA 10_0138, including:

- Water Management (Schedule 3, Condition 40 of PA 10_0138);
- Air Quality and Greenhouse Gases (Schedule 3, Condition 34 of PA 10_0138);
- Biodiversity (Schedule 3, Condition 41 to 53 of PA 10_0138);
- Heritage (Schedule 3, Condition 58 of PA 10_0138);
- Noise (Schedule 3, Condition 16 of PA 10_0138);
- Rehabilitation (Schedule 3, Condition 73 of PA 10_0138);
- Blast Management (Schedule 3, Condition 25 of PA 10_0138); and
- Traffic (Schedule 3, Condition 64 of PA 10_0138).

These EMPs are currently being prepared in consultation with the relevant stakeholders and to the satisfaction of the Director-General. All EMPs will be regularly reviewed and communicated to the workforce to ensure environmental performance is maintained.

2.4 ENVIRONMENTAL MONITORING PROGRAM

An environmental monitoring program was developed and implemented by MCC during the planning and preparation of the Maules Creek EA. This environmental monitoring program is being enhanced by MCC throughout the preparation and implementation of the EMPs. The MCC environmental monitoring program comprises the following:

- A meteorological monitoring station (Maules Creek Automatic Weather Station (AWS));
- A network of surface water monitoring locations;

- An air quality monitoring network, including a number of real time air quality monitoring units, High Volume Air Samplers (HVAS) and depositional dust gauges;
- A real time noise monitoring network with a number of representative attended noise monitoring locations for compliance monitoring;
- A blast monitoring network surrounding the mining operations to monitor compliance against overpressure, vibration and blast fume criteria;
- A network of groundwater monitoring locations in porous rock and alluvial aquifers within and surrounding the Project Boundary;
- Native vegetation monitoring locations within the Project Boundary and offset properties to quantify vegetation health, and impacts to the vegetation from the Project, including abundance of (and investigate risks posed by) exotic weeds and feral animals within the Project Boundary and offset areas;
- An annual inspection of remaining Aboriginal heritage sites undertaken as part of the Project's compliance auditing program in addition to the monitoring of culturally sensitive areas by nominated Registered Aboriginal Parties (RAP) where the clearance of topsoil is required; and
- Traffic movement monitoring consisting of volume surveys, road surveys, coal transport (quantity and date/time), and auditing of restricted routes.

Baseline monitoring will continue to be undertaken during and up to the commencement of construction and operational activities.

MCC in conjunction with the neighbouring coal mines (Boggabri Coal Mine and Tarrawonga Coal Mine) have developed cumulative environmental monitoring protocols in consultation with Government stakeholders to manage potential cumulative environmental impacts of these coal mining projects within the region. The environmental monitoring protocols have been developed to share environmental monitoring data and enable operations to be modified where possible to reduce the cumulative impacts on neighbouring receivers.

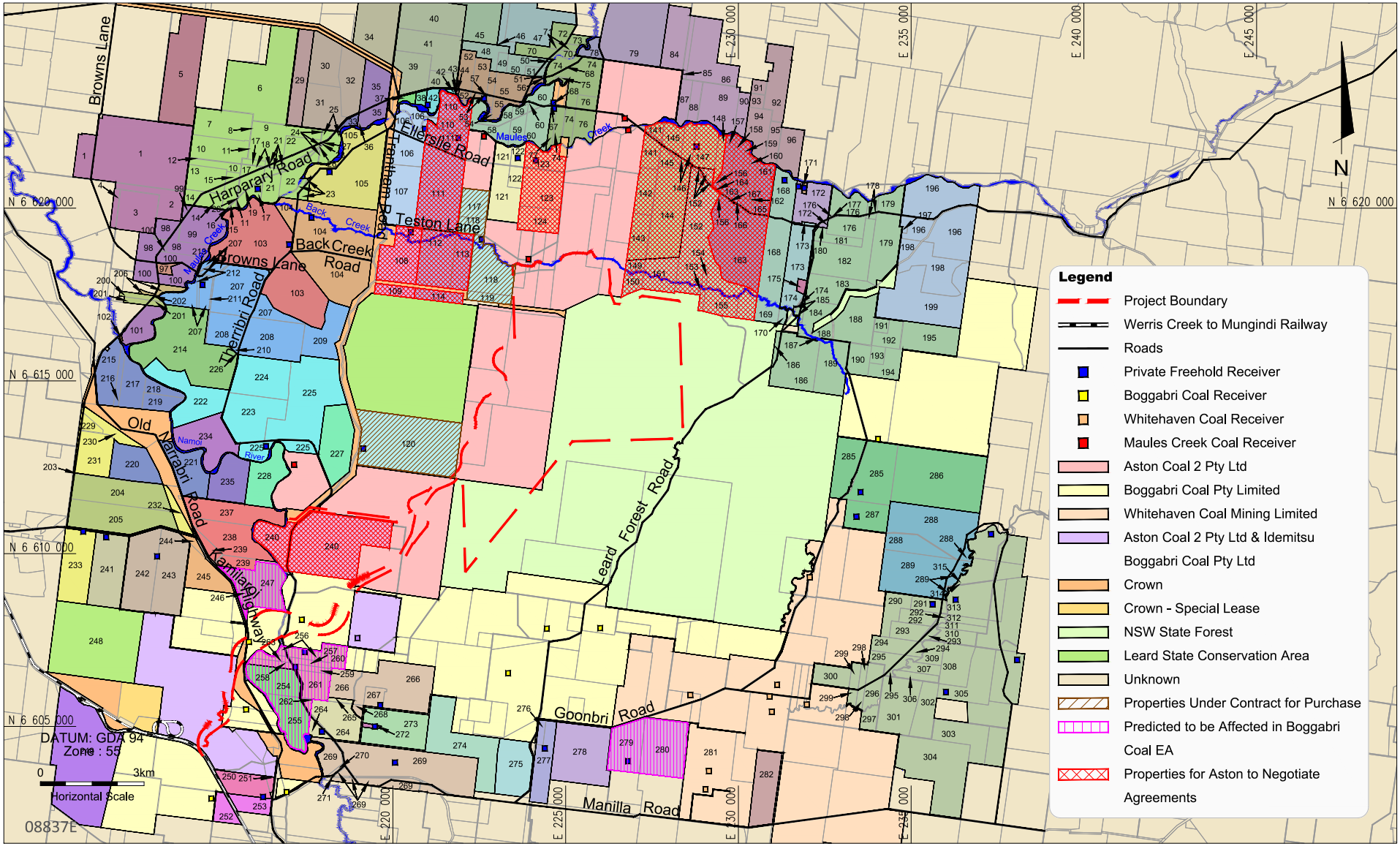
MCC will report the results from the environmental monitoring program in the Annual Review. This report is made available to relevant Government Agencies, employees, the Maules Creek Community Consultative Committee (CCC) and other interested stakeholders via the Whitehaven website.

2.5 LAND OWNERSHIP

Land ownership surrounding the area to which this Modification applies is listed in Table 1 which should be read in conjunction with Figure 3.

There are no private freehold landholders (with whom MCC does not have an agreement in place with) located within the Project Boundary. Land within and surrounding the Project Boundary is largely covered by four key land ownership categories: private freehold land, MCC owned land, land owned by other mining companies and land held by Forests NSW. There are private freehold landowners that occupy land surrounding the Project Boundary.

The majority of the Project infrastructure will be located on land owned by Whitehaven, Boggabri Coal or the Crown. The southern portion of the Project Boundary, in the vicinity of the connection of the shared rail spur line with Werris Creek to Mungindi Railway line is jointly owned as tenants in common under a perpetual lease between MCC and Boggabri Coal. Boggabri Coal and Whitehaven own other land within and adjacent to the Project Boundary.



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Land Ownership

FIGURE 3

Table 1
Non Mine-Owned Land Ownership

ID	Name	ID	Name	ID	Name
1	Glenelg Cotton Pty Ltd	38	R Frank	75	S & J Bradshaw
2	Glenelg Cotton Pty Ltd	39	RN & JM Ison	76	S & J Bradshaw
3	Glenelg Cotton Pty Ltd	40	RN & JM Ison	77	S & J Bradshaw
4	Glenelg Cotton Pty Ltd	41	RN & JM Ison	78	RJ & TL Laird
5	IB Norrie	42	DR & JJ Whan	79	Progress Programming Solutions Pty Ltd
6	IB Norrie	43	The Presbyterian Church (NSW) Property Trust	80	Aston Coal 2 Pty Ltd (Formerly EA & RE Genders)
7	IB Norrie	44	DA & KL Foran	81	Aston Coal 2 Pty Ltd (Formerly EA & RE Genders)
8	IB Norrie	45	AR & SA Kirkby	82	Aston Coal 2 Pty Ltd (Formerly Roman Catholic Church for the Diocese of Armidale)
9	IB Norrie	46	CK Wallace	83	Aston Coal 2 Pty Ltd (Formerly Roman Catholic Church for the Diocese of Armidale)
10	IB Norrie	47	CK Wallace	84	AB & RJ Laird
11	IB Norrie	48	DS Graham & AA Taylor	85	AB & RJ Laird
12	IB Norrie	49	DS Graham & AA Taylor	86	AB & RJ Laird
13	IB Norrie	50	DS Graham & AA Taylor	87	AB & RJ Laird
14	IB Norrie	51	DS Graham & AA Taylor	88	AB & RJ Laird
15	IB Norrie	52	LD Holmes	89	AB & RJ Laird
16	IB Norrie	53	LD Holmes	90	AB & RJ Laird
17	IB Norrie	54	LD Holmes	91	MW Busby
18	IB Norrie	55	LD Holmes	92	MW Busby
19	IB Norrie	56	LD Holmes	93	MW Busby
20	IB Norrie	57	Telstra Corporation Ltd	94	MW Busby
21	IB Norrie	58	KR Druce	95	MW Busby
22	IB Norrie	59	KR Druce	96	MW Busby
23	IB Norrie	60	KR Druce	97	RH & CE Stubbs
24	IB Norrie	61	Aston 2 Pty Ltd & Idemitsu Boggabri Coal Pty Ltd (Formerly KR Druce)	98	FE & RM Chisholm
25	IB Norrie	62	Boggabri Coal Pty Ltd	99	FE & RM Chisholm
26	IB Norrie	63	Boggabri Coal Pty Ltd	100	FE & RM Chisholm
27	IB Norrie	64	Boggabri Coal Pty Ltd	101	FE & RM Chisholm
28	IB Norrie	65	Boggabri Coal Pty Ltd	102	FE & RM Chisholm
29	KJ Hobden	66	Boggabri Coal Pty Ltd	103	GL & LE & AG Hamblin
30	KKL Kenniff	67	Minister for Education	104	LA & SL Leitch
31	KKL Kenniff	68	Minister for Education	105	DM & MSR Williams
32	KKL Kenniff	69	C & AV Bradshaw	106	PC Leitch
33	RA & AM Edwards	70	S & J Bradshaw	107	PC Leitch
34	Jonel Holdings Pty Ltd	71	S & J Bradshaw	108	JM Morris
35	RR & RJ Clissold	72	S & J Bradshaw	109	JM Morris
36	RR & RJ Clissold	73	S & J Bradshaw	110	PF Murphy
37	RL & AJ Skillicorn	74	S & J Bradshaw	111	PF Murphy

ID	Name	ID	Name	ID	Name
112	PF Murphy	149	CM & RRF Morse	186	MJ Brennan
113	PF Murphy	150	CM & RRF Morse	187	MJ Brennan
114	PF Murphy	151	CM & RRF Morse	188	MJ Brennan
115	Aston Coal 2 Pty Ltd (formerly PR Hobden)	152	CM & RRF Morse	189	MJ Brennan
116	Aston Coal 2 Pty Ltd (formerly PR Hobden)	153	CM & RRF Morse	190	MJ Brennan
117	MJ & ML Nott ^	154	CM & RRF Morse	191	MJ Brennan
118	MJ & ML Nott ^	155	CM & RRF Morse	192	MJ Brennan
119	MJ & ML Nott ^	156	Morse Investments Pty Ltd	193	MJ Brennan
120	MJ & ML Nott ^	157	Morse Investments Pty Ltd	194	MJ Brennan
121	L & SN Compton	158	Morse Investments Pty Ltd	195	MJ Brennan
122	L & SN Compton	159	Morse Investments Pty Ltd	196	JD Duncan
123	JR Holmes	160	Morse Investments Pty Ltd	197	JD Duncan
124	JR Holmes	161	Morse Investments Pty Ltd	198	JD Duncan
125	Aston Coal 2 Pty Ltd (formerly DJC Watson)	162	Morse Investments Pty Ltd	199	JD Duncan
126	Aston Coal 2 Pty Ltd (formerly DJC Watson)	163	Morse Investments Pty Ltd	200	SM Eather
127	Aston Coal 2 Pty Ltd (formerly DJC Watson)	164	Morse Investments Pty Ltd	201	SM Eather
128	Aston Coal 2 Pty Ltd (formerly DJC Watson)	165	Morse Investments Pty Ltd	202	SM Eather
129	Aston Coal 2 Pty Ltd (formerly DJC Watson)	166	Morse Investments Pty Ltd	203	SM Eather
130	Aston Coal 2 Pty Ltd (formerly DJC Watson)	167	Morse Investments Pty Ltd	204	SM Eather
131	Aston Coal 2 Pty Ltd (formerly DJC Watson)	168	PD & LA Finlay	205	SM Eather
132	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	169	PD & LA Finlay	206	NE Grinter
133	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	170	PD & LA Finlay	207	Hamblin Pastoral Co Pty Ltd
134	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	171	KD Woods	208	Hamblin Pastoral Co Pty Ltd
135	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	172	PD Finlay	209	Hamblin Pastoral Co Pty Ltd
136	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	173	LA & KA & PD Finlay	210	Hamblin Pastoral Co Pty Ltd
137	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	174	LA & KA & PD Finlay	211	Hamblin Pastoral Co Pty Ltd
138	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	175	Narrabri Shire Council	212	Hamblin Pastoral Co Pty Ltd
139	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	176	MJ Brennan	213	Hamblin Pastoral Co Pty Ltd
140	Aston Coal 2 Pty Ltd (formerly VA & MA Younger)	177	MJ Brennan	214	Oakcolt Pty Ltd
141	CM Morse	178	MJ Brennan	215	RA Maunder
142	CM Morse	179	MJ Brennan	216	RA Maunder
143	CM Morse	180	MJ Brennan	217	RA Maunder
144	CM Morse	181	MJ Brennan	218	RA Maunder
145	CM Morse	182	MJ Brennan	219	RA Maunder
146	CM Morse	183	MJ Brennan	220	RA Maunder
147	CM Morse	184	MJ Brennan	221	RA Maunder
148	CM Morse	185	MJ Brennan	222	Riverway Boggabri Pty Ltd

ID	Name	ID	Name	ID	Name
223	Riverway Boggabri Pty Ltd	254	GP & LF & WP Clarke	285	VP & SM McAuliffe
224	Riverway Boggabri Pty Ltd	255	GP & LF & WP Clarke	286	VP & SM McAuliffe
225	Riverway Boggabri Pty Ltd	256	RW & A Grover	287	VP & SM McAuliffe
226	EL Maunder	257	RW & A Grover	288	PM & MI Mainey
227	Bresrow Pty Ltd	258	RW & A Grover	289	PM & MI Mainey
228	Bresrow Pty Ltd	259	RW & A Grover	290	JE & RJ Picton
229	FJ Maunder	260	RW & A Grover	292	JE & RJ Picton
230	FJ Maunder	261	RW & A Grover	293	JE & RJ Picton
231	FJ Maunder	262	RW & A Grover	294	JE & RJ Picton
232	FJ Maunder	263	RW & A Grover	295	JE & RJ Picton
233	FJ Maunder	264	RJ & EJ Browning	296	JE & RJ Picton
234	BG & KM Bomford	265	RJ & EJ Browning	297	JE & RJ Picton
235	DB Hudson	266	RJ Heiler	298	JE & RJ Picton
236	Aston 2 Coal Pty Ltd (Formerly JA Bastardo)	267	RJ Heiler	299	JE & RJ Picton
237	PJ Watson & G Parkin	268	RJ Heiler	300	JE & RJ Picton
238	PJ Watson & G Parkin	269	RJ Heiler	301	JE & RJ Picton
239	PJ Watson & G Parkin	270	RJ Heiler	302	JE & RJ Picton
240	MF & TT & SL Hart & PF Rice	271	RJ Heiler	303	JE & RJ Picton
241	RB & ML Kerr	272	DV Gillham	304	JE & RJ Picton
242	Glek Pty Limited	273	DV & RJ Gillham	305	JE & RJ Picton
243	Glek Pty Limited	274	LE James & KE Woodward	306	JE & RJ Picton
244	PJ Watson	275	KR & KA Pryor	307	JE & RJ Picton
245	PJ Watson	276	HM Lockwood**	308	JE & RJ Picton
246	LE Christine-Rockliff**	277	HM Lockwood**	309	JE & RJ Picton
247	LE Christine-Rockliff**	278	RR & PL Crosby**	310	JE & RJ Picton
248	LJ & KJ Shields	279	RP & RD McGregor*	311	JE & RJ Picton
249	RE & MJ Stoltenberg	280	RP & RD McGregor*	312	JE & RJ Picton
250	DW & AM Keys	281	Whitehaven Coal Mining Limited (Formerly DJ Wellwood)	313	JE & RJ Picton
251	DW & AM Keys	282	P & AC Laird	314	JE & RJ Picton
252	RA & CM Collyer	283	Boggabri Coal Pty Limited (Formerly Bank of NSW)	315	JE & RJ Picton
253	RA & CM Collyer	284	Boggabri Coal Pty Limited (Formerly NF Smith)		

^ MCC has purchased or reached an agreement for the purchase of this property.

** Entitled to acquisition upon request in Tarrawonga Mine EA* (Resource Strategies 2010).

*** Entitled to acquisition upon request in Boggabri Coal Mine EA* (Hansen Bailey 2010).

3 MODIFICATION DESCRIPTION

The components of this Modification in relation to the Project Boundary are illustrated on Figure 4. *A description of the components of this Modification, including the indicative timing, construction methods, need for the Modification and the alternatives considered is provided in this section*.

3.1 BACKGROUND

This Modification seeks approval for the construction and operation of infrastructure that was either not previously explicitly included within the Maules Creek EA and subsequently approved under PA 10_0138 or the detailed engineering design process has made minor adjustments to the alignment and location of this infrastructure as conceptually illustrated within the Maules Creek EA and an amendment to the planning approval is required.

Specifically, this Modification EA seeks approval for the following:

- Construction of approximately 5 km of high voltage transmission line (132 kV) between TransGrid's Narrabri to Boggabri East 132 kV Transmission Line;
- Construction of TransGrid's Boggabri North 132 kV Switching Station;
- Minor extension of an existing 11 kV transmission line into the Project Boundary from a location outside of the Project Boundary, to the south of the proposed water pipeline route; and
- A minor realignment of the CHPP and associated facilities as a result of detailed design development which differs marginally from that conceptually illustrated within the Maules Creek EA.

3.2 TRANSGRID TRANSMISSION LINE AND SWITCHING STATION

'Section 3.6 Power and Communication' within the Maules Creek EA described the need for the supply of electricity for the Maules Creek Coal Mine from TransGrid infrastructure located on the Kamilaroi Highway. At the time of drafting the Maules Creek EA, the design of the proposed transmission line and associated switching station was not finalised and it was anticipated that the approval for this infrastructure would be sought as part of a separate approval.

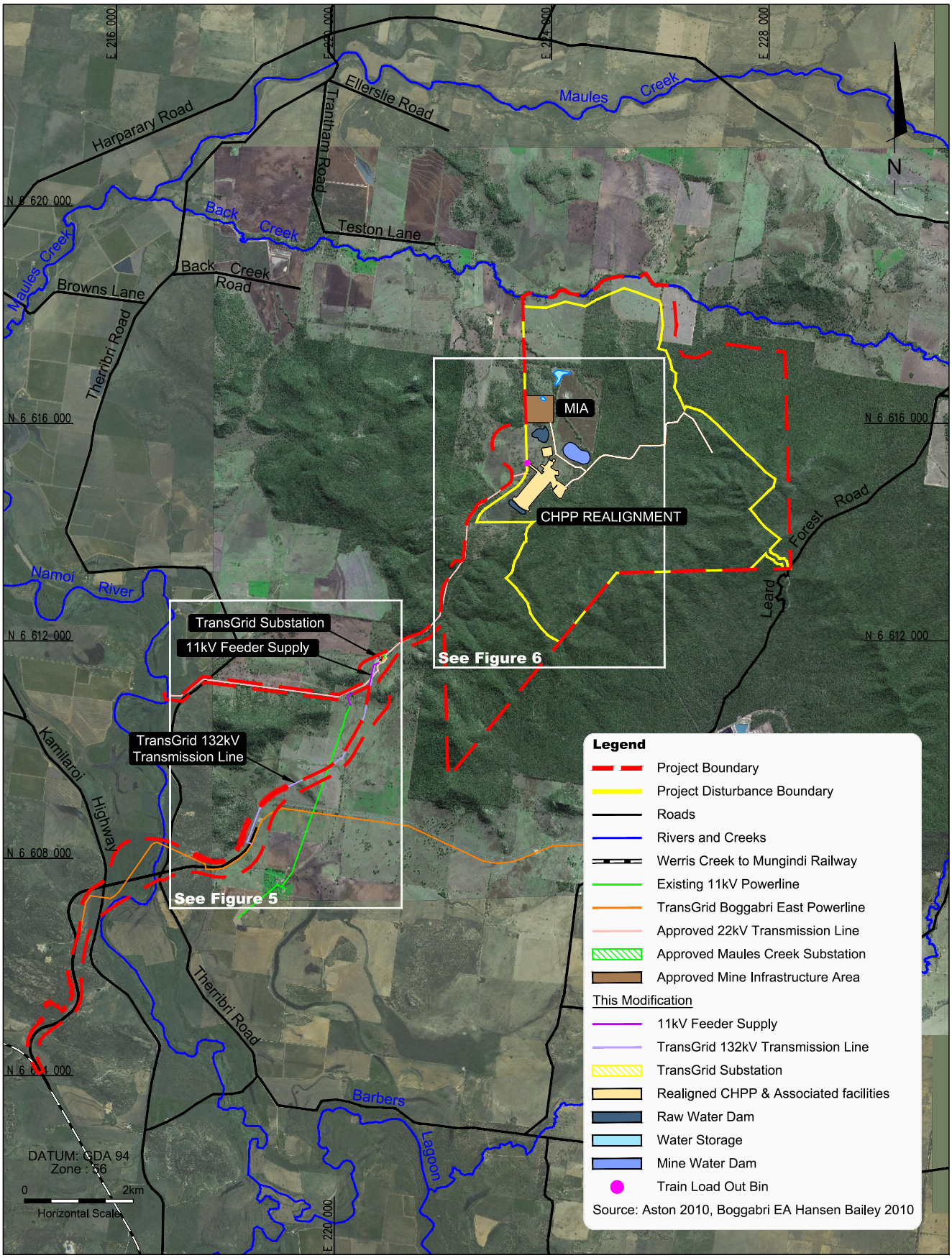
The transmission line and switching station have now been designed and MCC is seeking approval for its construction under this Modification. The transmission line and switching station are discussed further below.

3.2.1 TransGrid Transmission Line

TransGrid has been commissioned by MCC to construct a 132 kV transmission line and an associated 132 kV switching station to provide the required power supply for the Maules Creek Coal Mine.

This Modification will involve the construction of approximately 5 km of 132 kV double circuit transmission line from the Narrabri to Boggabri East 132 kV transmission line as shown on Figure 5. The 132 kV double circuit transmission line will continue in the vicinity of the Mine Access Road and Maules Creek Rail Spur to the proposed TransGrid Boggabri North 132 kV Switching Station, which will be located adjacent to the already approved water pipeline route (see Figure 5).

The Narrabri to Boggabri East 132kV Transmission line has been approved and will be constructed under a separate planning approval by a nearby mine. MCC proposes to connect its high voltage infrastructure to this approved line (Narrabri to Boggabri East 132 kV transmission line), which will avoid duplication of the line from the Kamilaroi Highway.



MAULES CREEK COAL MINE

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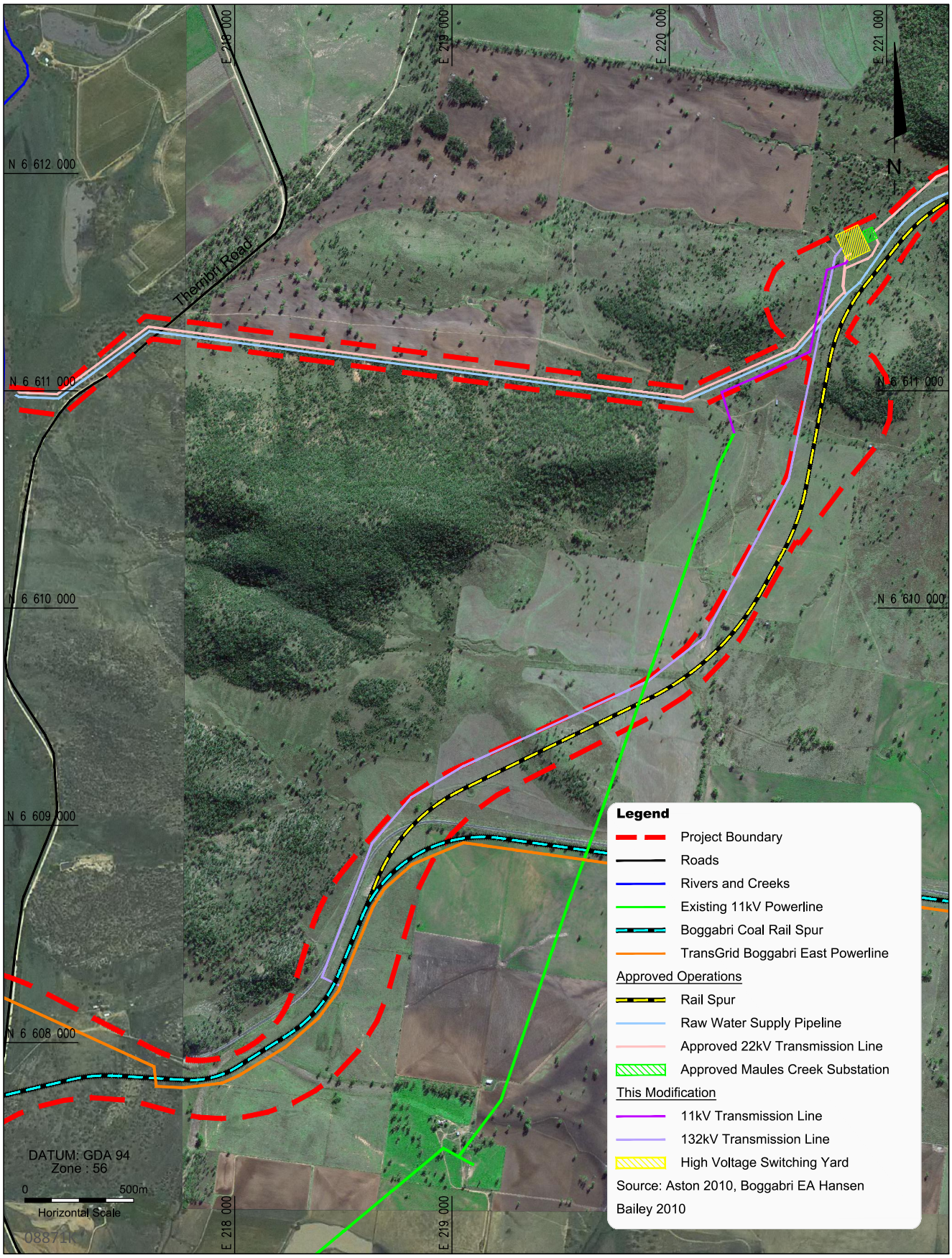
Modification Overview

FIGURE 4



MAULES CREEK COAL MINE

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Power Supply Modification

FIGURE 5

The transmission line will consist of a series of singular concrete pole suspension structures and twin concrete pole tension structures from which eight wires will be connected. Tension poles will be installed in areas where there are substantial changes in the alignment. Some tension poles will require guy wires and concrete anchors to provide further strength and support. Each suspension pole structure will support six wires (132 kV conductors) on six post insulators and also support two overhead earth wires on steel brackets. Each twin pole tension structure will support six 132 kV conductors with tension insulators and also support two overhead earth wires with steel brackets.

The concrete power poles will vary in height from approximately 24 m to 30 m. For each pole, a hole will be drilled into ground strata to approximately 3 m to 6 m in depth, and approximately 1 m in diameter. The pole will then be inserted with a crane, and either concrete backfilled or a square concrete pad footing will be installed (depending on soil conditions and the tension on the pole). The span between the pole structures will vary with the average span being approximately 260 m. The conductors are strung such that the statutory safe clearance to the ground and above road or rail crossings or other transmission lines is maintained.

An easement (15 m either side of the centre line of the transmission line alignment) will be established to ensure that sufficient clearance is maintained between any underlying vegetation and the conductors and to facilitate maintenance of the line.

Access to the transmission line during and following construction will be essential to enable its safe and efficient construction, and ongoing maintenance. Various items of heavy equipment will be required to access the transmission line alignment for construction, such as drill rigs, concrete trucks, cranes and vehicles carrying concrete power poles and other equipment. The terrain in the vicinity of the proposed alignment is slightly undulating over pre-disturbed cultivated land which will generally provide suitable access. The Mine Access Road is to be constructed to the east of the proposed transmission line alignment and will provide the primary access to the easement. A four wheel drive access track will be required, however this will only involve minor disturbance to the ground cover.

3.2.2 TransGrid Switching Station

The Boggabri North 132 kV switching station to which the high voltage transmission line will connect is part of this Modification. TransGrid has designed the switching station to provide power requirements for the Maules Creek Coal Mine as well as considering potential usage by other developments in the area into the future.

The switching station will be of typical construction as other TransGrid switching stations in operation within NSW and will generally include the following infrastructure:

- Formed level hardstand area with galvanised security palisade fence up to 3 m in height around the site;
- Two 132 kV line switchbays;
- Two 132 kV transformer switchbays;
- Three 132 kV busbar sections;
- Dry type (no oil) auxiliary transformer;
- Concrete terminal poles and lightning masts;
- Brick auxiliary services and pump house buildings;
- Paved access road and car parking area for both heavy and light vehicles;
- Drainage, equipment footings, support steelwork, earthing, cable trenches, kiosks and conduits;
- The remaining switching station area within the fence which is not paved will be surfaced with crushed aggregate;

- A metal clad modular secondary systems building and storage shed, built on galvanised steel support posts;
- Water tanks for fire systems (concrete construction) and domestic water use; and
- Septic tank (the wastewater treatment systems shall comply with the requirements of the Board of Health of New South Wales and the Local Authority).

No permanent oil containment tanks/dams are required as there are no power transformers containing large quantities of oil in the switching station.

Secondary systems will be installed as is typical for unmanned 132 kV substations. These will include substation automation and Supervisory Control and Data Acquisition (SCADA) systems, substation surveillance and condition monitoring.

The TransGrid Boggabri North switching station will be sited immediately adjacent to a 132 kV/22 kV substation that will distribute electricity to the various components of the Maules Creek Coal Mine as approved under PA 10_0138. The switching station and substation will be connected by six overhead 132 kV conductors and two earth wires.

3.2.3 Construction of High Voltage Power Supply

The construction of the high voltage transmission lines and associated TransGrid North switching station is proposed to be undertaken as expeditiously as possible in conjunction with other construction activities for the Maules Creek Coal Mine.

The indicative construction schedule for the high voltage transmission line and associated switching station is shown in Table 2. To avoid unnecessary interaction with other construction activities, the access to the construction areas will occur via the existing access to the Velyama property from Therribri Road (approximately 3.5 km north of the Mine Access Road). This existing property access is within the vicinity of where the approved water pipeline will be constructed for the Maules Creek Project and is located within the Project Boundary described in the Maules Creek EA.

Table 2
Indicative Construction Schedule High Voltage Power Supply

Action	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Site establishment	■											
Switching station earthworks and civil works	■	■	■	■	■	■	■	■				
Transmission line access track construction	■	■	■	■	■							
Erect poles and insulators			■	■	■	■	■					
Erect steelwork and install cables			■	■	■	■						
Erect buildings, fire systems and auxiliary systems			■	■	■	■	■	■	■	■		
Erect high voltage equipment	■	■	■	■	■	■	■	■	■	■		
String conductors on transmission line						■	■	■	■			
Commissioning									■	■	■	■
Energise transmission line and switching station												■

A work area will be formed at each location where a power pole is to be installed. The work area will be constructed to accommodate the pole prior to installation and a flat platform for the drill rig and/or crane to work from. Clearing of the canopy and shrub layers (if it has the potential to exceed 4 m in height and compromise the safety and operation of the high voltage transmission line) will be required at each pole location and within the easement and will continue to be maintained to ensure the safety and operation of the transmission line is not compromised. Any areas that require cut and fill works to develop a level working platform will be rehabilitated using native grass seeds at the completion of works.

During the stringing of conductors, traffic management will be required for any road crossings, particularly in the vicinity of the connection point with the Narrabri to Boggabri East Transmission line.

Construction activities for the high voltage transmission lines will generally utilise the following equipment:

- Bore rig;
- Winch;
- Puller;
- Tensioner;
- Pulley;
- Dozer;
- Roller; and
- Water Bowser.

Typical civil works will initially be completed for the TransGrid Boggabri North Switching Station. Civil works will include site preparation and bulk earthworks, drainage and major cable trenches, minor equipment footings, security fencing, temporary access roads, switching, surfacing, landscaping and the construction of the auxiliary services and secondary systems buildings. A temporary sediment basin will be developed as part of the switching station construction works. This sediment basin will be removed once the construction site has been stabilised.

Construction of the switching station and associated infrastructure is likely to utilise the following indicative equipment:

- Mobile Crane;
- Dozer;
- Roller;
- Water Bowser; and
- Grader.

3.3 EXTENSION OF 11 KV TRANSMISSION LINE

This Modification also includes a minor extension of an existing 11 kV transmission line. The extension to the transmission line is required to supply TransGrid with a secondary power supply for the operation of the TransGrid Boggabri North switching station.

Figure 5 illustrates the location of the existing 11 kV transmission line, which is located to the south of the proposed water pipeline route on the Velyama property that is owned by MCC. The proposed 11 kV transmission line will extend from the existing transmission line for a short distance to the Project Boundary, where it will travel within the approved Project Boundary, immediately adjacent the approved water pipeline, access track and 22 kV transmission line. The extension to the existing transmission line has been designed to avoid items of heritage and ecological significance.

The 11 kV transmission line extension will involve the continuation of the network of conductors and power pole support structures. A small 11 kV/240 V transformer will be mounted on the last pole adjacent to the switching station. Similar to the construction of the high voltage transmission lines, an easement will be cleared of any canopy and shrub layers to ensure suitable clearance for the transmission lines.

The final design of the 11 kV transmission line extension has been developed in order to avoid the clearance of any additional Critically Endangered Ecological Community (CEEC) to that identified within the Maules Creek EA.

The construction of the 11 kV transmission line will utilise similar equipment to that proposed for the high voltage 132 kV transmission lines. Truck mounted drill rigs, cranes and elevated work platforms will generally be used for construction of this minor extension to the existing transmission line.

3.4 REALIGNMENT OF CHPP AND ASSOCIATED FACILITIES

Figure 6 illustrates the proposed realignment of the CHPP and associated facilities to that illustrated within the Maules Creek EA following the final detailed design. Final engineering design has resulted in a minor realignment of certain facilities to ensure ongoing safety, acceptable foundation stability and maintainability of infrastructure for the life of the mine. As illustrated in Figure 6, the marginal realignment of the infrastructure will remain within the Project Disturbance Boundary, which was assessed in the Maules Creek EA to be fully disturbed by the Maules Creek Coal Mine.

The minor realignment of the CHPP has been undertaken to minimise the extent of cut and fill required to construct the level pad and will also ensure that the CHPP structure is constructed on solid ground (opposed to being constructed on foundations of much lower stability, meeting relevant construction standards). The minor realignment of the CHPP continues to utilise the natural landform to provide the height difference required to feed ROM coal into the sizers. The ROM hopper has been realigned; however it will remain generally in the same location as that illustrated in the Maules Creek EA.

The proposed minor realignment of the CHPP also improves the design and functionality of the train load out conveyor by providing a sufficient distance and incline between the coal stockpiles to the train load out bin. The original design of the train load out facility as conceptually illustrated within the Maules Creek EA did not provide a sufficient distance between the coal stockpiles and the train load out bin and was therefore not feasible. This would have resulted in the train load out conveyor to have an angle far too steep to effectively transport product coal to the train load out bin.

The construction of the CHPP and associated facilities will be generally as described within the Maules Creek EA.

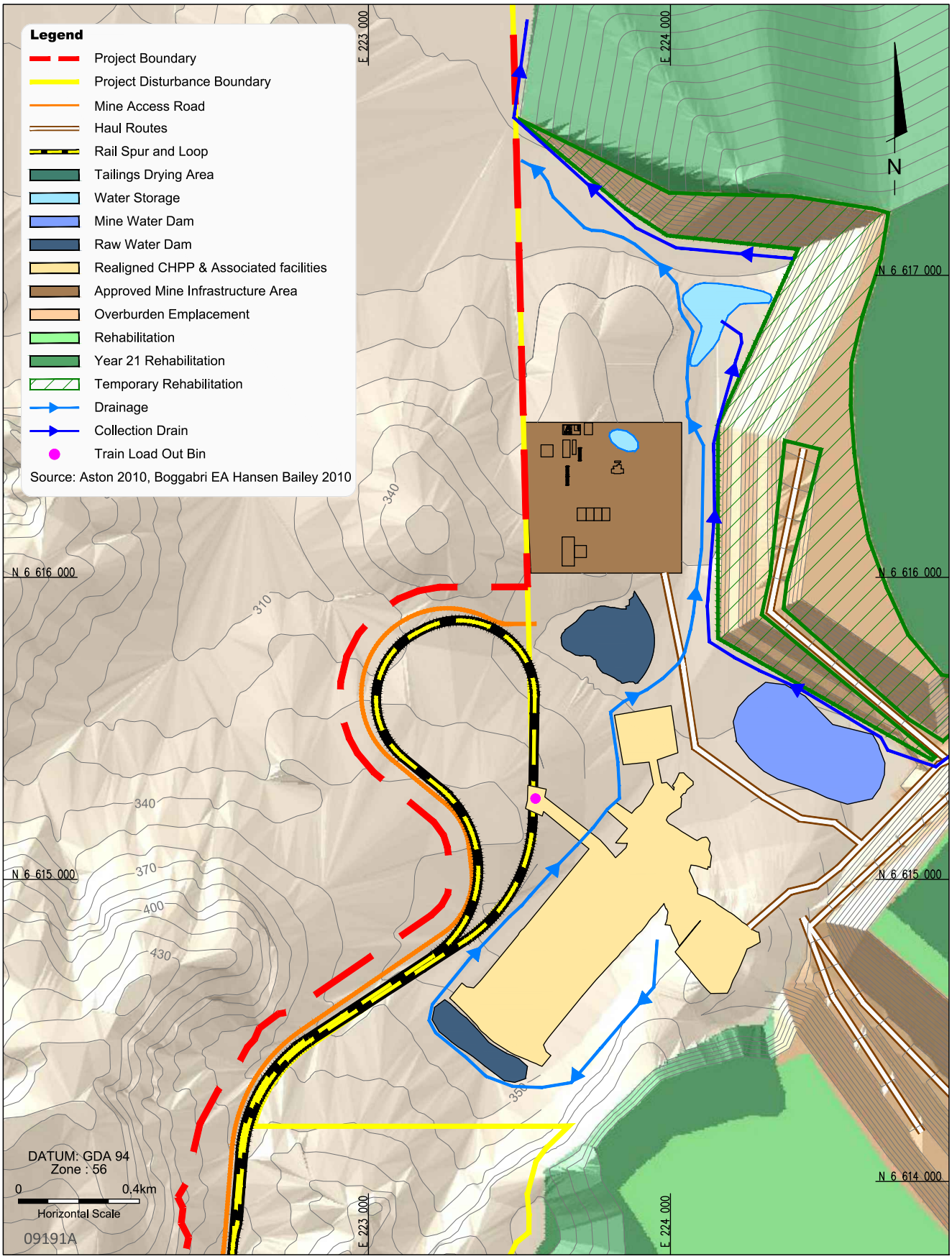
3.5 MODIFICATION NEED AND ALTERNATIVES

This Modification is required to enable the construction of the CHPP and associated facilities where the final engineering design has resulted in minor adjustments to the alignment and location of infrastructure or was not included within the Maules Creek EA. As such, this requires minor amendments to PA 10_0138. The granting of this Modification will enable the construction of the Maules Creek Coal Mine in the most efficient and safe method possible.

MCC has investigated numerous alternatives for the various components of this Modification, including:

1. Construction of the TransGrid transmission line and switching station under a separate planning approval;
2. Not linking the existing 11 kV transmission lines;
3. Construction of the CHPP and associated facilities as conceptually illustrated within the EA; and
4. Alternative configurations for the CHPP and associated facilities.

Comparing all the options, the option to proceed with this Modification was clearly the most practical and sensible option to move forward.



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Infrastructure Modification

FIGURE 6

The construction of the TransGrid 132 kV transmission line and associated 132 kV switching station will occur immediately adjacent to the mine access road and Maules Creek Rail Spur within the approved Project Boundary and will result in minimal disturbance to that indicated within the Maules Creek EA. The TransGrid 132 kV transmission line will link with infrastructure approved under the Boggabri Coal Project Approval which will avoid duplication of infrastructure required by both mining companies. It is therefore appropriate that this Modification to PA 10_0138 is the most appropriate approvals path for the construction of this infrastructure required for the Maules Creek Coal Mine.

The extension to the 11 kV transmission line is required as a secondary supply for the TransGrid Boggabri North 132kV Switch yard. The extension of the 11 kV transmission line to the Project Boundary has been designed to avoid any adverse impacts on items of heritage or ecological significance and will result in minor disturbance associated with the installation of a limited number of poles.

Section 3.3 of the Maules Creek EA indicated that the orientation of the CHPP and associated facilities would likely vary following the detailed engineering design of this infrastructure. The final design of the infrastructure has been completed and has resulted in a minor realignment of the CHPP and associated facilities to that previously illustrated within the Maules Creek EA. The final design of this infrastructure will remain entirely within the Project Disturbance Boundary which was assessed to be fully disturbed within the Maules Creek EA.

4 REGULATORY FRAMEWORK

This section of this Modification EA provides a description of the regulatory framework under which the Maules Creek Coal Mine is approved to operate relevant to this Modification. It discusses the ability of the Minister for Planning and Infrastructure to modify PA 10_0138 under Section 75W of the EP&A Act and describes the approvals process. It also discusses the consistency with the objects of the EP&A Act and any additional requirements for licences and approvals as a result of this Modification.

4.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

4.1.1 Project Approval

Aston 2 Coal Pty Ltd (a wholly owned subsidiary of Whitehaven) was granted PA 10_0138 on 23 October 2012 by the PAC as a delegate of the Minister for Planning and Infrastructure under Section 75J, Part 3A of the EP&A Act. Part 3A of the EP&A Act was repealed by the *EP&A Act Amendment Act 2011* (Part 3A Repeal Act) which commenced on 1 October 2011.

The Part 3A Repeal Act provided for the continuation of the assessment of former Part 3A Projects in respect of "*transitional Part 3A projects*". That continuation is preserved in Schedule 6A of the EP&A Act. A transitional Part 3A project includes "*an approved project*" (as defined under the former section 75A of the EP&A Act). An approved project is defined as a project to the extent that it is approved by the Minister under this Part. Maules Creek Coal Mine is an approved project as defined and therefore Maules Creek Coal Mine is a transitional Part 3A project.

PA 10_0138 was determined by the Minister at the time to be development that was "*state significant development*". The development was approved on the basis of the environmental impact assessment that was described within the Maules Creek EA. Condition 2 of PA 10_0138 requires that the development be conducted generally in accordance with the Maules Creek EA, Response to Submissions, statement of commitments and the conditions of PA 10_0138.

PA 10_0138 authorises the mining operations onsite until the end of December 2034.

Clause 3 of Schedule 6A of the EP&A Act provides:

> *"Part 3A of this Act (as in force immediately before the repeal of that Part and as modified under this Schedule after that repeal) continues to apply to and in respect of a transitional Part 3A project."*

As the Maules Creek Coal Mine is a "*transitional Part 3A project*", this application seeks to modify PA 10_0138 under Section 75W of the former Part 3A of the EP&A Act.

4.1.2 Landowner Consent and Notification

Under clause 8F of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), the consent of the landowners is not required if "*the application relates to a mining or petroleum production project…*".

However, it is a requirement that notice of the application is given "*to the public by advertisement published in a newspaper circulating in the area of the project before the end of the period of 14 days after the application is made."* Due notice of the submission of the application will therefore be provided by MCC in local newspapers.

All land which is the subject of this Modification EA is either owned by MCC, or an Agreement is being progressed by MCC with the landholder.

4.1.4 Section 75W of the EP&A Act

This Modification to PA 10_0138 is being made under Section 75W of the EP&A Act as follows:

(1) In this section:

Minister's approval means an approval to carry out a project under this Part, and includes an approval of a concept plan.

modification of approval means changing the terms of a Minister's approval, including:

(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and

(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.

(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.

(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.

(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.

(5) The proponent of a project to which section 75K applies who is dissatisfied with the determination of a request under this section with respect to the project (or with the failure of the Minister to determine the request within 40 days after it is made) may, within the time prescribed by the regulations, appeal to the Court. The Court may determine any such appeal.

In Barrick Australia Limited v Williams 2009 (Williams Case), Justice Basten found that Section 75W "*confers on the Minister an implicit obligation to be satisfied that the request falls within the scope of the section".*

In the Williams Case it was accepted that to engage *the power to modify* under Section 75W of the EP&A Act, the Minister is called upon to form a view as to whether the proposed changes amount " … *to a radical transformation of the terms of the existing development consent*". In the Williams Case it was found that this finding is a question of jurisdictional fact for the Minister.

In making that comparison between what is proposed and what is already approved, the Minister will compare what is proposed in this application with "…*the approval, with any earlier modifications, as it stood at the time of the modification request. The relevant comparison … is with the modified development consent as at the date of the modification request*." (Williams v Minister for Planning 2009 BC 200900319, page 54).

What is proposed under this Modification is not a "*radical transformation*" of what has been already approved under PA 10_0138 for the Maules Creek Coal Mine. The following essential elements of Maules Creek Coal Mine will remain unaltered by the Modification:

- Total tonnes of coal to be extracted, processed or transported does not change;
- Total annual extraction, processing and transportation of coal does not change;
- Manning levels remain the same;

- Methodology of mining, processing and transportation of coal does not change; and
- The disturbance limit generally remains as detailed in the Maules Creek EA.

It is thus evident that the Minister for Planning and Infrastructure has the power to modify PA 10_0138 under Section 75W of the EP&A Act.

4.1.5 Consistency of the Modification with Objects of the EP&A Act

The components of this Modification have been designed in order to ensure that the Modification remains consistent with the objects as specified in section 5 of the EP&A Act.

Section 5 of this Modification EA provides consideration of the management, development and conservation of resources to promote social and economic welfare of the community; the orderly and economic use of the land; and the protection of the environment.

The key principles of Ecologically Sustainable Development (ESD) have also been considered throughout the Maules Creek EA and Modification EA process and this Modification remains consistent with these principles.

4.1.6 Approvals that do not Apply

Section 75U (former) of the EP&A Act provides that certain authorisations normally required under various statutes are not required for "*an approved project*" and that the provisions of any Act that prohibit an activity without such an authority do not apply to "*an approved project*".

Accordingly, the following (relevant) authorisations will not be required for the Maules Creek Coal Mine as modified (if this application is approved):

- A permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*;
- An approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*;
- An Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*;
- An authorisation referred to in section 12 of the *Native Vegetation Act 2003* (NV Act) (or under any Act to be repealed by that Act) to clear native vegetation or State protected land;
- A bushfire safety authority under section 100B of the *Rural Fires Act 1997*; and
- A water use approval under section 89, a water management work approval under section 90 or an activity approval under section 91 of the *Water Management Act 2000* (WM Act).

The impacts and relevant considerations pertaining to the matters, which would ordinarily be addressed in connection with applications for these authorisations, have been dealt with and considered in the environmental assessment process which has been undertaken in connection with this application.

4.1.7 Approvals Which Must Be Granted

Section 75V (former) of the EP&A Act provides that an authorisation of the following kind cannot be refused if it is necessary for carrying out *an approved project*:

- A mining lease under the *Mining Act 1992* (Mining Act);
- An environment protection licence under Chapter 3 of the *Protection of the Environment Operations Act 1997* (POEO Act) (for any of the purposes referred to in section 43 of that Act); and
- Consent under section 138 of the *Roads Act 1993*.

Applications for these approvals (to the extent that they are required for the development the subject of the Modification EA) will be made after any approval of the Modification application is granted.

The impacts and relevant considerations pertaining to the matters which would ordinarily be addressed in connection with applications for these authorisations have been dealt with and considered in the environmental assessment process which has been undertaken in connection with this application.

4.2 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

An approval is required from the Commonwealth Minister for the Environment under Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for actions which are likely to have a significant impact on a Matter of National Environmental Significance (MNES).

The Maules Creek Coal Mine was previously determined as a *Controlled Action* under the EPBC Action on 9 August 2010, with further correspondence on 13 August 2010 confirming the assessment approach being the accreditation of Part 3A of the EP&A Act. The Commonwealth Minister for the Environment determined the Controlled Action approval with conditions on 11 February 2013 for the Maules Creek Coal Mine following the review of the Part 3A Project Approval and associated Assessment Report.

For the purposes of the EPBC Act, this Modification includes:

- Actions to be undertaken within the existing approved Maules Creek Coal Mine Project Boundary; and
- Actions to be undertaken within the proposed extension of the 11 kV transmission line which lies partly outside of the Project Boundary and will involve minor areas of disturbance.

The action which is the subject of this Modification will not affect additional CEEC / EEC.

Section 5.3 of this document provides further detail on the ecology review undertaken as a part of this Modification EA.

4.3 ENVIRONMENTAL PLANNING INSTRUMENTS

State Environmental Planning Policy's (SEPP) and other relevant environmental planning instruments apply to this Modification EA.

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

The aims of SEPP (Mining, Petroleum Production and Extractive Industries) 2007 (SEPP Mining) include providing for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State and to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources and to establish appropriate planning controls to encourage ESD and establishes relevant matters for consideration by a consent authority.

The considerations set out by clauses 12 to 17 of SEPP Mining (which set out matters for consideration in development applications) are examined and reported upon throughout this Modification EA and the assessments undertaken for the Maules Creek EA.

In particular, clause 12 of SEPP Mining provides:

"*Before determining an application for consent for development for the purposes of mining, petroleum production or extractive industry, the consent authority must:*

(a) consider:

(i) the existing uses and approved uses of land in the vicinity of the development, and

(ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and

(iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses; and

(b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) and (ii), and

(c) evaluate any measures proposed by the Proponent to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii)."

This Modification EA undertakes the assessments required by the consent authority in relation to considering the requirements under clause 12 of SEPP Mining.

4.3.2 Narrabri Local Environmental Plan 2012

The Project Boundary is located within the Narrabri Shire Local Government Area (LGA), in which the relevant environmental planning instrument is the *Narrabri Local Environmental Plan 2012* (Narrabri LEP). The Maules Creek EA described the recently repealed *Narrabri Local Environmental Plan 1992* which was the relevant instrument at the time.

The Modification is largely proposed within the Project Boundary which has previously been approved for the purposes of carrying out the Project. The Project Boundary is situated over land that is currently zoned under the Narrabri LEP as Rural Zone RU(1) Primary Production and RU(3) Forestry. The 11 kV transmission line lies partly outside of the Project Boundary, on land zoned as Rural Zone RU(1) Primary Production.

Agriculture is permissible without development consent on land zoned as Rural Zone RU(1) Primary Production, however is not permissible on land zoned as RU(3) Forestry. Therefore under SEPP (Mining), mining activities are permissible with development consent on land zoned as Rural Zone RU(1) Primary Production under the Narrabri LEP.

The activities associated with this Modification generally fall within the approved Project Boundary that are now zoned RU(3) Forestry. These components are within the approved Project Boundary and consequently within an area that was previously approved for mining. As such, land zoning within this area is not of relevance.

Accordingly, this Modification which is for the purposes of open cut coal mining is permissible on the subject land with development consent.

4.4 OTHER REGULATORY REQUIREMENTS

4.4.1 Protection of the Environment Operations Act 1997

The POEO Act provides for licensing of pollution by Office of Environment and Heritage (OEH) which administers the POEO Act.

MCC has applied for an Environmental Protection Licence (EPL) in respect to its currently approved mining operations and a variation is not envisaged to be required as there will be no changes or additions to licensable scheduled activities.

4.4.2 Mining Act 1992

Activities that are "*mining purposes*" are required to be authorised by a mining lease under the Mining Act. In relation to this Modification, the construction of the CHPP and associated facilities on the alternate alignment would be considered a *mining purpose* as described under the *Mining Regulation 2010*.

The realigned CHPP stockpile areas extend partly beyond the western boundary of CL 375. MCC applied for an Exploration Lease (ELA 4408) over an area of land to the west of CL 375 in February 2011. This application has recently received approval from the Department of Trade and Investment, Regional Infrastructure and Services, Division of Resources and Energy (DTIRIS-DRE). MCC has subsequently lodged a mining lease application over an area of land covered by ELA 4408.

The Construction Mining Operations Plan (MOP) which is currently being prepared for lodgement with DTIRIS-DRE will consider the proposed alignment of the CHPP as proposed in this Modification.

4.4.3 Native Vegetation Act 2003

Under the NV Act it is an offence to clear native vegetation (as defined) without development consent to do so (subject to certain exemptions).

Under section 25 of the NV Act, any clearing authorised under a designated development consent is exempt from requiring an approval under the NV Act.

The Modification will generally involve the clearing of native vegetation which is within the area that was assessed and described to be impacted by the Project. As described in Section 5.3.2, this Modification will involve some very minor clearance of Low Diversity Derived Native Grassland that currently lies outside of the Project Boundary. Should this Modification be approved as described, the relevant development consent will be held and as such approval under the NV Act is not required.

4.4.4 New England North West Strategic Regional Land Use Plan

On 11 September 2012, the NSW Government released the *Strategic Regional Land Use Plan – New England North West* (SRLUP) as part of a package which sets out a range of initiatives to better balance growth in the mining and coal seam gas industries with the need to protect important agricultural land and water resources.

The SRLUP establishes the 'Gateway' process that needs to be enacted for all proposals for new mines, as well as expansions of existing mines beyond the boundaries of existing mining leases.

The Gateway process does not apply to this Modification as there is no expansion proposed to the physical mining footprint that is currently approved under PA 10_0138.

5 IMPACTS, MANAGEMENT AND MITIGATION

The potential environmental impacts of this Modification, as identified throughout the planning and assessment process have been assessed as part of this Modification EA. The findings of the relevant environmental assessments that were undertaken for this Modification EA and a description of the measures that will be implemented to manage and mitigate potential impacts are presented below.

5.1 AIR QUALITY AND GREENHOUSE GAS

5.1.1 Introduction

Pacific Environment Limited (PEL, formerly PAE Holmes) completed the relevant level of air quality assessment for this Modification which is presented in full in Appendix A. This study is summarised below and relies heavily on the previous air quality impact assessments and information presented in the Maules Creek EA.

5.1.2 Methodology

This study considered the possible impacts during the construction and operation of the various components of this Modification. In each case, the extent of disturbance required for each component was considered and a qualitative assessment was undertaken in relation to the modelling that was completed for the Maules Creek EA.

When taking into account the possible operational impacts in relation to the realignment of the CHPP and associated facilities, the variance in prevailing winds on the coal stockpiles and the influence that this will have on the air quality experienced at surrounding private receivers and variations from the impacts originally proposed in the original Maules Creek EA study were considered.

5.1.3 Impact Assessment

High Voltage Transmission Line and Switching Station

The proposed high voltage transmission line is to continue within the near vicinity of the areas that are to be cleared for the Maules Creek Rail Spur and the Mine Access Road. Clearing associated with the construction of the high voltage transmission line will be limited to the development of limited working pads surrounding each transmission pole. This clearing will generally entail the removal of any trees or shrubs that are likely to grow more than 4 m in height rather than resulting in extensive ground disturbance that may result in the generation of dust.

Upon the completion of construction, any areas that have been disturbed will be rehabilitated using native grass seed. The areas of clearing will be within the near vicinity of the construction works for the rail spur and fit within the overall clearing that was anticipated within the Maules Creek EA.

The Boggabri North Switching Station will be located in an area immediately adjacent to an approved sub-station and is not anticipated to require any substantial disturbance beyond that which has been described within the Maules Creek EA. As a result, this component is not anticipated to result in any additional dust generation.

No substantial additional air quality impacts are anticipated beyond those identified within the Maules Creek EA as a result of these components of this Modification.

11 kV Transmission Line Extension

The proposed extension to an existing 11 kV transmission line will involve minimal surface disturbance, restricted to power pole construction. As such, negligible air quality impacts are likely to be experienced for this component of this Modification.

CHPP and Associated Facilities Realignment

Emissions from the coal stockpiles can vary according to the orientation of the stockpiles by increasing the area that is exposed to wind flows. The assessment included a review of the prevailing winds in relation to the realignment of the CHPP and associated facilities. This assessment found that the change in emissions of particulates in comparison to the Maules Creek EA is negligible.

The total dust emissions from the coal stockpiles alone represent less than 1% of the total emissions from the Maules Creek Coal Mine. Therefore any change in emissions from the re-alignment will be immaterial in the context of the entire mine site.

The proposed realignment will not change any of the conclusions of the air quality impact assessment within the Maules Creek EA.

5.1.4 Mitigation and Management

MCC has recently prepared an Air Quality and Greenhouse Gas Management Plan (AQGHGMP) for the construction and operational activities associated with the Maules Creek Coal Mine. The AQGHGMP includes various measures for the management of dust which will be implemented for the various components of this Modification to ensure that dust emissions from these activities are appropriately managed to meet the regulatory criteria at neighbouring private receivers.

No further air quality mitigation or management measures are required for this Modification.

5.2 ACOUSTICS

5.2.1 Introduction

A relevant level of noise impact assessment was undertaken for this Modification EA by Bridges Acoustics, which is summarised below. A full copy of the noise assessment is presented in Appendix B.

The noise impact assessment relies upon the noise modelling and assessment results from the Maules Creek EA completed by Bridges Acoustics in 2011, in the context of the operations proposed for this Modification.

5.2.2 Methodology

Background

The noise impact assessment was completed to determine the noise impacts for the various components of this Modification in accordance with OEH guidelines and policies.

Noise emissions from the operation of the Boggabri North 132 kV switching station were reviewed in relation to the possible noise sources within the compound, including an air conditioner for the control room and voltage transformers.

The noise impact assessment also reviewed the possible noise impacts associated with the construction of the various components of this Modification, which would occur within the same time period as the construction works for the Rail Spur, Mine Access Road and other construction works.

Noise from the proposed operation of the CHPP as per the detailed design has been assessed using a modified Maules Creek EA noise model. The Maules Creek EA noise model originally assessed two operational configurations of the CHPP according to the staging of the mine, including:

- Year 1 with a front end loader loading product coal into a hopper to feed a conveyor loading trains; and
- Years 5 to 21 with the completed stockpiles and a slewing luffing bucket wheel reclaimer operating and feeding the train loadout system.

Considering the noise emissions from the CHPP in isolation from associated mining operations, both the Year 1 and Years 5 to 21 situations assessed in the Maules Creek EA will produce similar noise levels at receiver properties. However, noise emissions from mining in Year 1 will be substantially lower than noise levels expected in subsequent years at full production. For this reason, the noise assessment for this Modification EA considers the Years 5 to 21 CHPP situations as the worst case assessment.

Mining sources have not changed as a result of this Modification and therefore have not been considered when assessing the noise from the operation of the CHPP in the proposed location.

Criterion

The Project Approval specifies in Schedule 3, Condition 7 of PA 10_0138 the operating noise criterion of 35 LAeq, 15 minute for all privately owned residences that are not currently in agreement with MCC. Construction works associated with the construction and operation of the CHPP and associated facilities will need to conform to this criterion.

Further, Schedule 3, Condition 4 of PA10_0138 specifies the relevant construction noise criterion of 40 LAeq, 15 minute for privately owned residences for the works being completed on the Maules Creek rail spur. As the construction of the transmission lines and the switching station are located immediately adjacent to the rail spur, a daytime noise criterion of 40 LAeq, 15 min has been adopted for the assessment. Should any works be required on the transmission lines beyond the daytime periods, then Schedule 3, Condition 6 of PA10_0138 will apply and the Out of Hours Work protocol will be implemented.

5.2.3 Impact Assessment

The high voltage 132 kV transmission line and associated switching station are proposed to be constructed almost adjacent to the Maules Creek rail spur and Mine Access Road. The construction of this infrastructure is likely to utilise various earthmoving machines, mechanical and electrical installation tools including mobile cranes and trucks, and various powered and unpowered hand tools similar to the construction activities of the nearby Rail Spur and Mine Access Road. Since privately-owned residences are located more than 1 km from these works, construction works will be indistinguishable and minor in comparison to the construction associated with the Rail Spur and Mine Access Road as assessed in the Maules Creek EA. Therefore, the results and conclusions relating to construction noise levels as described within the Maules Creek EA remain valid.

The worst case assessment of the noise levels that are likely to be experienced from the operation of the switching station confirmed that noise from this infrastructure would be inaudible at neighbouring receivers under noise enhancing weather conditions.

A comparison of noise contours between the noise modelling within the Maules Creek EA and the modified noise model indicates that the realigned CHPP would also produce similar maximum noise levels to those described within the Maules Creek EA. Further, there is not anticipated to be any measureable increase in the potential for sleep disturbance compared to the maximum noise levels described in the Maules Creek EA.

5.2.4 Mitigation and Management

MCC will conduct the activities under this Modification in a manner that ensures that the relevant noise assessment criteria are met for all privately owned residences.

The Noise and Blast Management Plan that has been prepared for the Maules Creek Coal Mine includes practical management measures that will be applied to operations to ensure noise emissions are minimised and regulatory criteria are met at private receivers.

5.3 ECOLOGY

5.3.1 Introduction

Cumberland Ecology Pty Ltd (Cumberland) completed a comprehensive ecological impact assessment (Maules Creek EIA) for inclusion within the Maules Creek EA. The assessment included detailed vegetation mapping across the Project Boundary and neighbouring lands owned by MCC, and seasonal field fauna surveys across the Project Boundary. The Maules Creek EIA has been utilised to make an assessment of the potential impacts that the components of this Modification will have on ecological values within the area.

Cumberland Ecology has also completed a brief assessment of the potential impacts of the 11 kV transmission line on native vegetation which extends outside of the Project Boundary. A copy of this brief letter report is provided in Appendix C and is discussed in the following sections.

5.3.2 Impact Assessment

The Maules Creek EIA determined that the area that will be impacted within the Project Boundary over the life of the mine will be approximately 2,177 ha. This consisted of approximately 1,665 ha of forest and woodland and a further 413 ha of native grassland and 99 ha of exotic grassland or crop land.

The extent of disturbance proposed for the construction of the Mine Access Road, Rail Loop and Spur, power and communications infrastructure and water pipeline was quantified within the Project Boundary. The proposed high voltage transmission line and associated switching station will be located within the Project Boundary in the vicinity of the Mine Access Road and the Maules Creek rail spur. The disturbance associated with the high voltage transmission line and associated switching station (as described in Section 3.2.1) will occur within previously cleared areas.

Therefore, the clearing required for the high voltage transmission lines (both within the easement and the work areas) and associated switching station is located within previously cleared areas and any further clearing is unlikely to entail significant tree clearing. Further, this Modification will not traverse any areas of Box Gum Woodland and Derived Native Grassland CEEC/ EEC.

The 11 kV transmission line is to be extended approximately 180 m from an existing transmission line into the Project Boundary. It will then travel along the approved water pipeline and associated track to feed an approved sub-station located immediately adjacent to the high voltage switching station.

Similar to the high voltage transmission line, the disturbance associated with the installation of the 11 kV transmission line will generally comprise forming suitable working pads to install poles along the alignment and clearing any trees or shrubs that are likely to cause clearance concerns with the transmission line.

The design of the 11 kV transmission line has been developed in the field in order to avoid areas where trees or tall shrubs exist as well as to avoid impacts to vegetation conforming to Box Gum Woodland.

Cumberland Ecology has confirmed that the 11 kV transmission line crosses vegetation that has been mapped as Derived Native Grassland (Low Diversity – White Box Woodland) (see Appendix C). This vegetation community does not conform to the Box Gum Woodland and it does not conform to Derived Grassland listed as an Endangered Ecological Community (EEC) under the *Threatened Species Conservation Act 1995* (TSC Act). Similar to the High Voltage Power Line, the route of the 11 kV line occurs in previously cleared areas and therefore will not have a significant effect on native flora and fauna.

The Project Disturbance Boundary (as illustrated on Figure 2) covered the proposed MIA, CHPP and associated facilities, Northern OEA, the open cut pit, water management structures and the other associated facilities. The Project Disturbance Boundary was developed to allow for the realignment of the MIA, CHPP and other associated infrastructure following the detailed design of this infrastructure. Despite this entire area being assessed to be fully disturbed (and appropriately offset), MCC made a commitment within the Maules Creek EA to minimise the direct disturbance of CEEC as a result of the ultimate design and construction of various infrastructure required for the Project, where practical.

As explained in Section 3.4, MCC has undertaken the detailed design of the CHPP that is required as part of the Project. The detailed design process considered a number of constraints, including:

- Engineering principles for safe, stable and practical structures, including the need for:
    - Constructing large structures (such as reclaimers, CHPP buildings and conveyors) into solid strata to minimise the cost of large footings; and
    - The infrastructure design to satisfy operational requirements (i.e. angle of conveyors to train load out bin, location in relation to mining operations);
- Environmental considerations such as minimising impacts to native vegetation (including CEEC), ensuring sufficient water drainage is achievable, and reducing possible impacts in relation to location and alignment; and
- Locating infrastructure within the approved disturbance areas (Project Disturbance Boundary).

When considering the above in relation to the design of infrastructure, it is clear that the proposed minor realignment alignment of the CHPP (as outlined in this Modification) is the most suitable design that will balance the various constraints.

5.3.3 Mitigation and Management

This Modification is not anticipated to result in any material additional disturbance to that previously assessed and approved under PA 10_0138.

The high voltage transmission lines and associated high voltage switching station will be located within the disturbance limits as approved for the Mine Access Road and rail spur. The realigned CHPP will remain within the Project Disturbance Boundary as approved to be disturbed under PA 10_0138.

To manage the impacts to the flora and fauna predicted to occur as a result of this Modification, MCC will continue to follow the mitigation and management measures detailed in the Maules Creek EA. These mitigation and management measures will be further explained within the Biodiversity Management Plan which will be prepared to the satisfaction of DP&I.

The Biodiversity Management Plan will include (at least): a Land Disturbance Protocol which will minimise impacts to CEECs where practical, delineate clearing, specify seed collection techniques, and the process for translocation of habitat features within rehabilitation areas.

5.4 ABORIGINAL ARCHAEOLOGY AND CULTURAL HERITAGE

5.4.1 Introduction

A review was completed of the Aboriginal Archaeology and Cultural Heritage Impact Assessment that was undertaken by AECOM Australia Pty Limited (AECOM, 2010) for inclusion within the Maules Creek EA in order to assess any potential for impacts from this Modification on items of Aboriginal archaeological and cultural heritage significance. The following sections describe the findings from the review as relevant to the assessment of this Modification.

5.4.2 Methodology

The Aboriginal Archaeology and Cultural Heritage Impact Assessment assessed the nature of the archaeological landscape of the Project Boundary and the potential impacts that the Maules Creek Coal Mine may have on Aboriginal cultural heritage values. The assessment was completed in accordance with the relevant regulatory requirements, including:

- *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005);
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a); and
- *Code of Practice for Archaeological Investigation for Aboriginal Objects in NSW* (DECCW, 2010b).

This Modification is located entirely within the area that was studied by AECOM for the Maules Creek EA Aboriginal Archaeology and Cultural Heritage Impact Assessment. The area studied included the entire Project Boundary and land immediately adjacent to the Project Boundary that was owned by MCC at the time.

The archaeological context of the site and the findings of all previous field surveys undertaken in the local area were also reviewed to determine whether any known items or sites of Aboriginal cultural heritage significance were present within the areas proposed for this Modification.

5.4.3 Impact Assessment

The review of the Maules Creek EA showed that all items of Aboriginal Heritage that are located within the areas for this Modification were anticipated to be in an area that was assessed to be disturbed as part of the Project and hence will be collected during the salvage program.

A single artefact scatter site (MC11 which was identified of low archaeological (scientific) significance) was located within the vicinity of the proposed high voltage transmission line. This site was anticipated within the Maules Creek EA to be impacted by the rail spur line. The assessment completed for the Maules Creek EA covered the area of the proposed 11 kV transmission line. No items of Aboriginal Heritage were identified within this area.

The construction of the CHPP on the alignment as per the detailed design will impact upon four sites which were classified as artefact scatter sites. The assessment within the Maules Creek EA found these artefact scatter sites to be of low archaeological (scientific) significance, with exception of MC4 which was identified as being of moderate archaeological (scientific) significance. These sites were located within the Project Disturbance Boundary and were assessed as being disturbed as a consequence of the Project. These four sites were described within the Maules Creek EA to be part of the salvage program involving the surface collection of artefacts.

5.4.4 Mitigation and Management

No items of Aboriginal heritage additional to those assessed within the Maules Creek EA are required to be disturbed by the various components of this Modification.

Management of items of Aboriginal heritage within the Project Boundary will be undertaken in accordance with the measures described within the Aboriginal Archaeology and Cultural Heritage Management Plan (ACHMP) which has been developed for the Project and recently submitted to DP&I for approval. The ACHMP has been developed in consultation with the Registered Aboriginal Parties, OEH and to the satisfaction of DP&I.

5.5 NON-INDIGENOUS HERITAGE

5.5.1 Introduction

A review of the Non-Indigenous Heritage Impact Assessment completed by Archaeology Australia (2010) for inclusion within the Maules Creek EA was undertaken in relation to this Modification. The review was carried out to assess any potential for impacts of the components of this Modification on items of Non-Indigenous heritage.

5.5.2 Methodology

The Non-Indigenous Heritage Impact Assessment completed for the Maules Creek EA was undertaken in accordance with the NSW Heritage Office *Guidelines for Heritage Impact Studies* (2001), the NSW Heritage Manual (NSW Heritage Council, 1996) and the NSW Heritage Branch Department of Planning 2009 publication, *Assessing Significance for Historical Archaeological Sites and Relics*.

5.5.3 Impact Assessment

The Assessment completed for the Maules Creek EA found no sites of significance within the Project Boundary, however there were five sites of local heritage significance identified on land owned by MCC.

The 11 kV transmission line extension into the Project Boundary passes on the western side of the Velyama Homestead site. The Velyama Homestead was erected for the artist, Blagden Chambers in around 1904. The building was relocated in 1980 where it has been restored at Gulgong NSW.

The proposed 11 kV transmission line has been specifically designed so as to avoid impacts to the Velyama Homestead and gardens. No visual impacts are anticipated to the Velyama Homestead site since the existing 11 kV transmission line that will be extended is located within the near vicinity. Any extension to this existing transmission line will not significantly impair the visual setting that is currently experienced from this site.

5.5.4 Mitigation and Management

No impacts are anticipated on items of Non-Indigenous Heritage as a result of this Modification. MCC will continue to manage items of Non-Indigenous Heritage within the Project Boundary and on land owned by MCC in accordance with its Heritage Management Plan which is being prepared for the Project. Employees and contractors will complete various training and induction packages prior to completing works on the Project. These induction packages will include the relevant detail on the items of Non-Indigenous Heritage known to occur within the vicinity of the Project and their responsibilities to conduct works to limit any potential impacts upon these items.

5.7 SOILS AND LAND CAPABILITY

5.7.1 Introduction

GSS Environmental (GSSE) completed the Soils and Land Capability Assessment (GSSE 2010) for inclusion within the Maules Creek EA. For the purposes of this Modification EA, a review of the previous Soils and Land Capability Assessment was completed to determine the potential impacts that the components of this Modification would have on soils and the land capability of the land.

5.7.2 Methodology

The assessment completed for the Maules Creek EA included soil mapping and profiling, a soil field assessment and soil laboratory testing to determine soil type and classification, land capability and agricultural suitability. The findings relevant to the assessment completed for the Maules Creek EA have been reviewed to determine to potential impacts of this Modification and to implement any management and mitigation measures to ensure impacts are managed appropriately.

5.7.3 Impact Assessment

Soil Type & Characteristics

The easement for the 132 kV transmission line will cover land comprising the following soils: Black and Grey Vertosols, Brown and Grey Vertosols, and Sodic Brown Solosols and Dermosols. All these soil types are moderately to poorly drained soils that become alkaline with depth and may become slightly sodic. Topsoils of these soil types are useful for rehabilitation activities. However, due to the high clay content of the sub-soil and lack of organic matter, the sub-soil may become dispersive and lead to erosion under very wet conditions if the topsoil is stripped.

The easement of the 11 kV transmission line extension lies on land containing Black and Grey Vertosols and Brown and Grey Vertosols.

The CHPP realignment is proposed to occur on land with Black and Grey Vertosols, Red Chromosols, Brown and Grey Vertosols, and Brown and Grey Chromosols. Red Chromosols are moderately well drained soils and are alkaline throughout the profile. The sub-soils are both non-saline and non-sodic and have moderate fertility characteristics. The topsoil contains a high stone content, so it is marginally suitable for reuse for topdressing on rehabilitation areas. Brown and Grey Chromosols are moderately well drained soils and are generally neutral, however become acidic with depth. These soils may also become saline and slightly sodic at depth. The topsoil is suitable for use on rehabilitation; however dispersive sub-soil is not useful within rehabilitation areas.

Land Capability

The land capability classifications within the areas of this Modification range from Class II (within the vicinity of the southern portion of the high voltage transmission line) to Class V (along the easement of the high voltage transmission line). The proposed disturbance from the components of this Modification occurs within the disturbance limits assessed and described within the Maules Creek EA. There will be a general reduction in the disturbance to land Class II, as a result of the disturbance that was assumed within the Maules Creek EA for the southern part of the Rail Spur and Mine Access Road across the Namoi River floodplain.

Agricultural Suitability

The pre-mining agricultural suitability over the area of this Modification will be located on land classed as 1, 2, 3 and 5. Class 1 land is located within the area where the high voltage transmission line is proposed. The Class 2 and 3 land is located along the length of the proposed high voltage transmission line, the 11 kV transmission line and also within the area of the CHPP realignment. Class 5 land is within the south western part of the CHPP realignment.

The proposed disturbance from the components of this Modification will occur within the disturbance limits assessed in the Maules Creek EA. There will be a general reduction in the disturbance to land Class 1 for this Modification when compared to the disturbance assumed within the Maules Creek EA (for the southern part of the Rail Spur and Mine Access Road across the Namoi River floodplain).

5.7.4 Mitigation and Management

The existing mitigation and management measures as described within the Maules Creek EA will continue to be employed for this Modification. These mitigation and management measures will be described within the Soils Management Plan which will be completed as part of the Rehabilitation Management Plan and will include:

- Procedures for the correct stripping, handling and stockpiling of topsoil materials;
- Procedures for the correct re-spreading of topsoils; and
- Rehabilitation design, development procedures, including measures to promote effective landform design, erosion and sediment control management, and seedbed preparation.

Further to this, a Land Disturbance Protocol (contained within the Biodiversity Management Plan) is in place to identify soils to be stripped and provides for the implementation of management measures for the stripping and stockpiling of topsoil resources. Further, possible land degradation issues requiring management will be identified and management measures adopted prior to vegetation clearance.

5.8 SURFACE WATER

5.8.1 Introduction

WRM Water & Environment prepared a Surface Water Impact Assessment for the Project for the Maules Creek EA. The Surface Water Impact Assessment was reviewed in relation to the various components of this Modification to determine the possible impacts that are likely to result on surface water resources.

5.8.2 Impact Assessment

The construction of the transmission lines and associated switching station are not likely to affect any components of the water balance, however there will be similar erosion and sediment control issues and design constraints that will require consideration during the construction of this infrastructure.

The realignment of the CHPP is anticipated to result in some minor changes in catchment for water collected for use within the water management system. The Water Management Plan currently prepared and submitted to the DP&I for approval presents an updated water balance in relation to the final design of the Maules Creek Coal Mine. The approved Water Management Plan demonstrates that no substantial changes are anticipated to the site water balance as a result of the final design.

5.8.3 Mitigation and Management

The Water Management Plan includes details of the mine site water management system, a sediment and erosion control plan, and surface water and groundwater monitoring programs to ensure that impacts from the Maules Creek Coal Mine are managed appropriately. The potential impacts to surface water during the construction and operation of the various components of this Modification will be managed according to the Water Management Plan.

5.9 VISUAL AND LIGHTING

The relevant level of visual impact assessment has been completed for this Modification based on the findings of the visual impact assessment completed by Integral Landscape Architecture and Visual Planning (Integral) within the Maules Creek EA.

The high voltage transmission lines are proposed to be constructed within close vicinity to the Rail Spur and Mine Access Road. These approved components were assessed within the Maules Creek EA to exhibit low visual impacts as a result of the large viewing distance between the closest receiver with a line of sight to this infrastructure. The construction of the high voltage transmission line adjacent to this approved infrastructure is not anticipated to result in any greater visual effects.

The 11 kV transmission line is located within an area that is generally shielded by nearby neighbouring receivers. As such, this infrastructure is unlikely to result in any adverse visual effects to near neighbours. As mentioned within Section 5.5.3, the extension to the 11 kV transmission line is unlikely to result in any significant visual effects on the grounds of the former Velyama Homestead as the existing transmission line is within the current visual setting.

The construction of the CHPP as per the detailed design will generally result in the infrastructure to be constructed at a similar level to that illustrated within the Maules Creek EA. The ROM hopper will be located in the same area of high topography adjacent to the CHPP as described within the Maules Creek EA. It will continue to be screened by the intervening topography of the neighbouring hills with exception of a small area to the north-west. This view is unlikely to result in any adverse visual impacts or direct lighting effects.

No additional visual management or mitigation measures are required to those already in place for the Maules Creek Coal Mine.

6 STATEMENT OF COMMITMENTS

No additional commitments to that attached to PA 10_0138 are required as a result of this Modification. MCC will continue to manage the impacts according to the plans and strategies as required under PA 10_0138.

7 CONCLUSION

This section provides conclusions with regard to this Modification application and its environmental assessment.

7.1 REASON FOR THE APPLICATION

This Modification to PA 10_0138 is required to enable the construction and operation of infrastructure required to provide power for use in the Maules Creek Coal Mine. This Modification also seeks approval to construct and operate the CHPP and associated facilities on the alignment determined by the detailed engineering design of the infrastructure.

7.2 THE APPLICATION

This Modification is supported by this Modification EA and is sought to facilitate the construction and operation of the Maules Creek Coal Mine and is consistent with that described within the Maules Creek EA. The Maules Creek Coal Mine (following any approval of this Modification) will have approval for the following:

- The construction and operation of an open cut mining operation extracting up to 13 Mtpa ROM coal to the Templemore Seam;
- Open cut mining fleet including excavator / shovels and fleet of haul trucks, dozers, graders and water carts utilising up to 470 permanent employees;
- The construction and operation of a CHPP (on an alignment determined following detailed design) with a throughput capacity of 13 Mtpa ROM coal;
- The construction and operation of a Tailings Drying Area;
- The construction and operation of a rail spur, rail loop, associated load out facility and connection to the Werris Creek to Mungindi Railway Line via a shared rail spur with Boggabri Coal;
- The construction and operation of a Mine Access Road;
- The construction and operation of administration, workshop and related facilities on an alignment as determined during the detailed design;
- The construction and operation of water management infrastructure including a water pipeline, pumping station and associated infrastructure for access to water from the Namoi River;
- The installation of supporting power and communications infrastructure, including a 132 kV high voltage transmission line and associated switching station, and the extension of an existing 11 kV transmission lines for use with the Maules Creek Coal Mine; and
- The construction and operation of explosive magazine and explosives storage areas.

7.3 POWER TO MODIFY

The components sought to be approved by this Modification are located entirely on the land the subject of PA 10_0138.

This Modification application includes some power related and coal processing infrastructure for the Maules Creek Coal Mine in which the details were in conceptual form or not finalised for inclusion within the Maules Creek EA.

The operation of the Maules Creek Coal Mine will continue to be undertaken as described within the Maules Creek EA and as approved under PA 10_0138, including utilising the same mining methods, schedules, plant and equipment.

The development sought to be approved by this Modification falls within the term 'modify' in Section 75W of the EP&A Act and there is the power and it is appropriate for the Minister as the approval body to approve this Modification application.

7.4 ENVIRONMENTAL ASSESSMENT

The need for the high voltage transmission line for the operation of the Maules Creek Coal Mine was described within the Maules Creek EA, however due to the detailed design not being finalised at the time of preparing the Maules Creek EA, a separate planning approval would be sought for the construction and operation of this infrastructure.

The possible realignment of the CHPP following the detailed engineering design was always envisaged during the preparation of the Maules Creek EA. This is one of the primary reasons for developing the Project Disturbance Boundary around the proposed mining areas, OEAs, water management infrastructure and CHPP and MIA infrastructure. The Project Disturbance Boundary was assessed within the Maules Creek EA to be fully disturbed as a worst case assessment.

No material additional noise impacts to those previously described within the Maules Creek EA are likely to occur as a result of this Modification. The noise associated with the construction of the high voltage transmission line, 11 kV transmission line and the high voltage switching station will generally be undistinguishable from noise generated from the construction of the Rail Spur and Mine Access Road.

Noise emissions from the CHPP constructed in the location as per the detailed design are likely to slightly reduce noise impacts to the north with some very small increases in noise to receivers to the north-west, however this change will be undetectable.

Air quality impacts as a result of the construction and operation of the various components of this Modification are not anticipated to result in any material impacts on neighbouring receivers. The construction activities for the various components of this Modification will be managed consistent with the management of other currently approved construction works to ensure that impacts to neighbouring receivers are minimised.

The vegetation disturbance required for the construction of the various components of this Modification will generally remain within the 2,177 ha of land that was assessed and approved to be disturbed by the Maules Creek Coal Mine. This vegetation does not conform to a CEEC under the EPBC Act, nor does it conform to an EEC under the TSC Act.

As it has been demonstrated within this EA, the likely environmental impacts resulting from this Modification will remain consistent with those previously assessed and approved within the Maules Creek EA.

7.5 ENVIRONMENTAL PLANNING AND SOCIAL CONTEXT

As explained throughout this Modification EA, the need for the high voltage transmission line and associated switching station, power reticulation from existing infrastructure and the realignment of the CHPP following detailed engineering design has always been foreseen from the preparation of the Maules Creek EA.

The high voltage transmission line was described within the Maules Creek EA to be part of a further planning approval application once the detailed design was completed by TransGrid. This detailed design work on the Maules Creek Coal Mine power supply has now been completed and they are included as components of this Modification.

MCC considered that the construction of the CHPP on the final design would fit within the definition that it is generally consistent with that described with the Maules Creek EA and that no further planning approval was required. This minor realignment has been included in this Modification on the advice of DP&I.

MCC was granted PA 10_0138 on 23 October 2012, and was granted the Controlled Action Approval under the EPBC Act on 11 February 2013 and is preparing to commence construction upon the approval of the required post approvals (i.e. management plans and strategies, mining leases, environmental protection licence, etc).

This Modification is consistent with that described within the Maules Creek EA and is not anticipated to result in any additional material environmental impacts as a result of considering the required components for the Maules Creek Coal Mine.

This Modification as described throughout this Modification EA provides a balanced consideration of all potential environmental, social and economic impacts, consistent with the principles of ESD.

Substantial engineering investigations and options analyses have identified that the infrastructure proposed for this Modification provides the most efficient and practical options available and will enable the most expedient construction of the Maules Creek Coal Mine to meet the objects of the EP&A Act.

7.6 JUSTIFICATION

The components of this Modification are entirely consistent with that previously assessed and approved under PA 10_0138 in that the following components were described within the supporting Maules Creek EA:

- Approval for the high voltage transmission lines and associated switching station for the Maules Creek Coal Mine was anticipated to be sought under a separate planning approval application;
- Power reticulation throughout the Project Boundary was described to be developed to deliver power around the Maules Creek Coal Mine; and
- The CHPP and associated facilities were envisaged to be constructed on the location and alignment as determined following the detailed design of this infrastructure.

The timely approval of this Modification will enable the construction of the Maules Creek Coal Mine to commence and to be undertaken in an efficient manner. The timely approval of this Modification will minimise the possible impacts associated with delays to the construction program for the Maules Creek Coal Mine and will ensure that the benefits of the Project will be experienced in the shorter term.

This Modification (if approved) will sustain and enable the construction of the final components of the Maules Creek Coal Mine without material changes to the approved impacts and therefore the objects of the EP&A Act will be satisfied and will be furthered by approving this Modification.

8 ABBREVIATIONS

Abbreviation	Description
A	Authorisation
AWS	Automatic Weather Station
Boggabri Coal	Boggabri Coal Pty Limited
CEEC	Critically Endangered Ecological Community
CHPP	Coal Handling and Preparation Plant
CL	Coal Lease
DMC	Dense Medium Cyclone
DP&I	NSW Department of Planning and Infrastructure
DGRs	Director-General's Requirements
DTIRIS – DRE	Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy
EA	Environmental Assessment
ELA	Exploration Lease Application
EMP	Environmental Management Plan
EMS	Environmental Management Strategy
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth)
EPL	Environmental Protection Licence
ESD	Ecologically Sustainable Development
ha	Hectare
Hansen Bailey	Hansen Bailey Environmental Consultants
LGA	Local Government Area
MCC	Maules Creek Coal Pty Ltd
Maules Creek EA	*Maules Creek Coal Project Environmental Assessment* dated July 2011 (Hansen Bailey, 2011)
Modification EA	This Environmental Assessment Modification document
MIA	Mine Infrastructure Area
Mining Act	*Mining Act 1992*
MOP	Mining Operations Plan
Mtpa	Million tonnes per annum
Narrabri LEP	*Narrabri Local Environmental Plan 2012*
NPW Act	*National Parks and Wildlife Act 1974*
NV Act	*Native Vegetation Act 2003*
OEA	Overburden Emplacement Area
OEH	Office of Environment and Heritage
PAC	Planning Assessment Commission
PA	Project Approval
POEO Act	*Protection of the Environment Operations Act 1997*
RAP	Registered Aboriginal Party
ROM	Run of Mine
SEWPaC	Department of Sustainability, Environment, Water, Population and Communities

Abbreviation	Description
The Project	Maules Creek Coal Project
TSC Act	*Threatened Species Conservation Act 1995*
Whitehaven	Whitehaven Coal Mining Limited

9 REFERENCES

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10 MODIFICATION EA STUDY TEAM

Section	Title / Modification EA Component	Team Member and Company	
Project Management			
	Executive General Manager – Corporate Services	Lance Muir	Whitehaven Coal Limited
	Executive General Manager – Project Delivery	Brian Cole	Whitehaven Coal Limited
	Area Manager Services – Maules Creek	Craig Simmons	Whitehaven Coal Limited
	Environmental Manager – Maules Creek	Daniel Martin	Whitehaven Coal Limited
Modification EA Management			
	Project Director	James Bailey	Hansen Bailey
	Project Manager	Nathan Cooper	
	Project Coordinators	Renee Attard/ Joanna Graham	
	Peer Review	Dianne Munro	
Modification EA Sections			
1	Overview	Nathan Cooper	Hansen Bailey
2	Approved Operations	Nathan Cooper	
3	Modification Description	Nathan Cooper	
4	Regulatory Framework	Nathan Cooper	
5	Impacts, Management and Mitigation	Nathan Cooper, Renee Attard, Joanna Graham	
6	Statement of Commitments	Nathan Cooper	
7	Conclusion	James Bailey	
8	Abbreviations		
9	References		
10	Modification EA Study Team		
Appendix A	Air Quality Impact Assessment	Ronan Kellaghan	Pacific Environment Limited
Appendix B	Acoustic Impact Assessment	Mark Bridges	Bridges Acoustics
Appendix C	Ecology Review	David Robertson	Cumberland Ecology
Figures provided by Pegasus Technical			

APPENDIX A

Air Quality Impact Assessment

Pacific Environment Limited
Consulting • Technologies • Monitoring • Toxicology

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27 March 2012

Nathan Cooper
Hansen Bailey
by email: ncooper@hansenbailey.com.au

MAULES CREEK COAL PROJECT MODIFICATION

1. INTRODUCTION

The Maules Creek Coal Mine (the Project) is located in the Gunnedah Coal basin approximately 20 km to the north-east of Boggabri in the north-west region of NSW within the Narrabri Local Government Area (LGA). The Maules Creek Coal Mine is currently owned by Maules Creek Coal Pty Limited (MCC), a joint venture between Aston Coal 2 Pty Limited (a wholly owned subsidiary of Whitehaven Coal Limited (Whitehaven)) (75%), ICRA MC Pty Ltd(15%) and J-Power Australia Pty Limited (10%).

Key aspects of the approval are:

- The construction and operation of an open cut mining operation extracting up to 13 Million tonnes per annum (Mtpa) Run of Mine (ROM) coal to the Templemore Seam;
- Open cut mining fleet including excavator / shovels and fleet of haul trucks, dozers, graders and water carts utilising a workforce of approximately 470 permanent employees;
- The construction and operation of a Coal Handling and Preparation Plant (CHPP);
- The construction and operation of Tailings Drying Areas;
- The construction and operation of a rail spur, rail loop, associated load out facility and connection to the Werris Creek to Mungindi Railway Line;
- The construction and upgrade of local access roads to the mine;
- The construction and operation of administration, workshop and related facilities;
- The construction and operation of water management infrastructure including a water pipeline, pumping station and associated infrastructure for access to water from the Namoi River; and
- The installation of supporting power and communications infrastructure.

A modification to the approval is sought for the construction of the transmission line (132 kV and 11kV), associated switching station required to supply the Project with power. Approval is also sought for a minor realignment to the approved CHPP and associated facilities.

The following report discusses the potential impacts on local air quality as a result of the modification.

2. OVERVIEW OF MODIFICATION FOR WHICH APPROVAL IS SOUGHT

TransGrid Transmission Line and Switchyard

The Maules Creek EA which supports PA 10_0138 describes the 132 kV transmission lines and associated switching station to be constructed under a separate approval to be sought by TransGrid. At the time of drafting the Maules Creek EA, the design of the proposed transmission line and associated switching station had not been completed.

The proposed alignment of the 132 kV transmission line will connect with the Narrabri to Boggabri East 132 kV transmission line that TransGrid is constructing for the neighbouring Boggabri Coal Mine, in the vicinity of the connection of the Maules Creek Spur Line (refer **Figure 1**). The transmission line will continue up the western side of the mine access road and Maules Creek Rail Spur line to an area within the Project Boundary where the TransGrid Boggabri North switchyard will be constructed. The switchyard will be located immediately adjacent to a sub-station that is currently approved and proposed for the Project.

The 132kV Transmission line and switch yard will be constructed within the Project Boundary as approved under PA 10_0138 and there will be no additional disturbance required from that described within the EA.

11 kV Extension

Maules Creek Coal also require a minor extension of an existing 11 kV transmission line to supply a secondary power supply to the 132kV switchyard as required by Transgrid. The minor extension is partially outside the Project Boundary, however on the same portion of land to which PA 10_0138 applies. The 11kV with be extend in to the Project Boundary south of the water pipeline up to the TransGrid Boggabri North switchyard. This transmission line extension will involve minor disturbance. (refer **Figure 1**).

CHPP and Infrastructure Re-Alignment

At the time of preparation of the EA, it was understood that the orientation of the CHPP and associated facilities may change following detailed engineering design. The alignment presented in the EA and the proposed changes under the modification are presented in **Figure 2**.

The proposed re-alignment of this infrastructure has already been accounted for within Project Disturbance Boundary assessed in the EA.

3. DISCUSSION OF IMPACTS

TransGrid Transmission Line and Switchyard

The proposed TransGrid transmission line and switchyard would be located within the corridor to be cleared for the Mine Access Road and Rail Spur. Only a very small area of disturbance would be required for each pole. The Transmission line will be constructed over previously cultivated land and as such minimal clearing will be required. Ongoing maintenance of the canopy and shrub layers, if it has the potential to exceed 4 m in height and compromise the safety and operation of the high voltage transmission line, will be required. The switch yard will not require any additional disturbance from that calculated and described within the EA. As very little additional disturbance is required, there would be only minor additional dust emissions during construction, primarily from excavation, spoil handling and heavy vehicle movements.

A review of the land ownership (see **Figure 3**) indicates that the closest private receptor to the proposed TransGrid transmission line construction corridor (and access road and rail spur construction corridor) are located at distances of more than 1,000m. Given this separation distance, construction dust impacts would be minor. Nevertheless, construction dust management measures for the Project have been outlined in the Air Quality and Greenhouse Gas Management Plan (AQGHGMP) for the Project (**PAEHolmes, 2012**) and it is anticipated that TransGrid would adopt the measures outlined in the AQGHGMP to ensure any additional dust emissions are kept to a minimum.

11 kV Extension

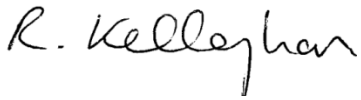
The extension of an existing 11 kV transmission line will involve minor disturbance, restricted to power pole construction. As above, measures outlined in the AQGHGMP would be adopted to ensure additional dust emissions are kept to a minimum. This, combined with significant separation distances to private receptors, will results in negligible impact from this modification.

CHPP and Infrastructure Re-Alignment

Emissions from stockpiles can vary according to pile orientation (for example by exposing larger surface areas to wind flows); however, based on a review of the prevailing winds the change in emissions from the re-alignment is expected to be negligible. Further emission estimates presented in the EA were calculated using the total surface area of the stockpiles, therefore any change to the orientation of the CHPP stockpiles would not materially change the results that have been presented. The total dust emissions from stockpiles represent less than 1% of the total emissions from the site, and any change in emissions from the re-alignment will be immaterial in the context of the site. Therefore the re-alignment would not change any of the conclusions of the EA. Similarly, the change in emission source locations would not significantly alter the dispersion of emissions (or resultant ground level concentrations) and would not change any of the conclusions of the EA.

4. CONCLUSION

A review of the potential impacts on local air quality, as a result of the modification, indicate that minor additional dust emissions from the construction of TransGrid transmission line and switchyard would be easily controllable through commonly applied dust management measures described within the Maules Creek Air Quality and Greenhouse Gas Management Plan (AQGHGMP). The re-alignment of the CHPP and associated facilities would not change any of the conclusions of the EA.



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5. REFERENCES

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PAEHolmes (2012) "Air Quality and Greenhouse Gas Management Plan: Maules Creek Coal Project " 30 October 2012.

APPENDIX A: FIGURES

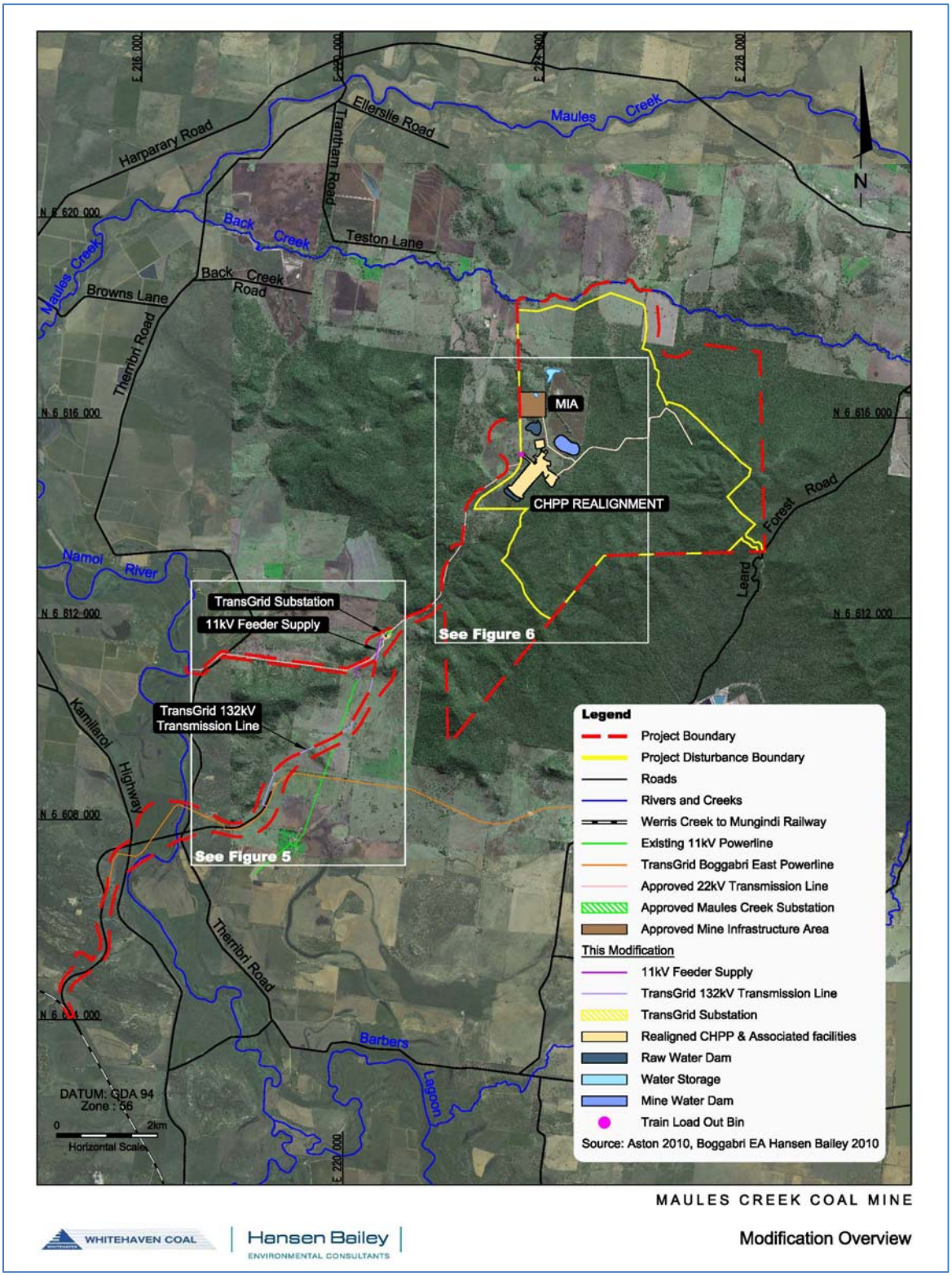

Figure 1: Overview of Modification

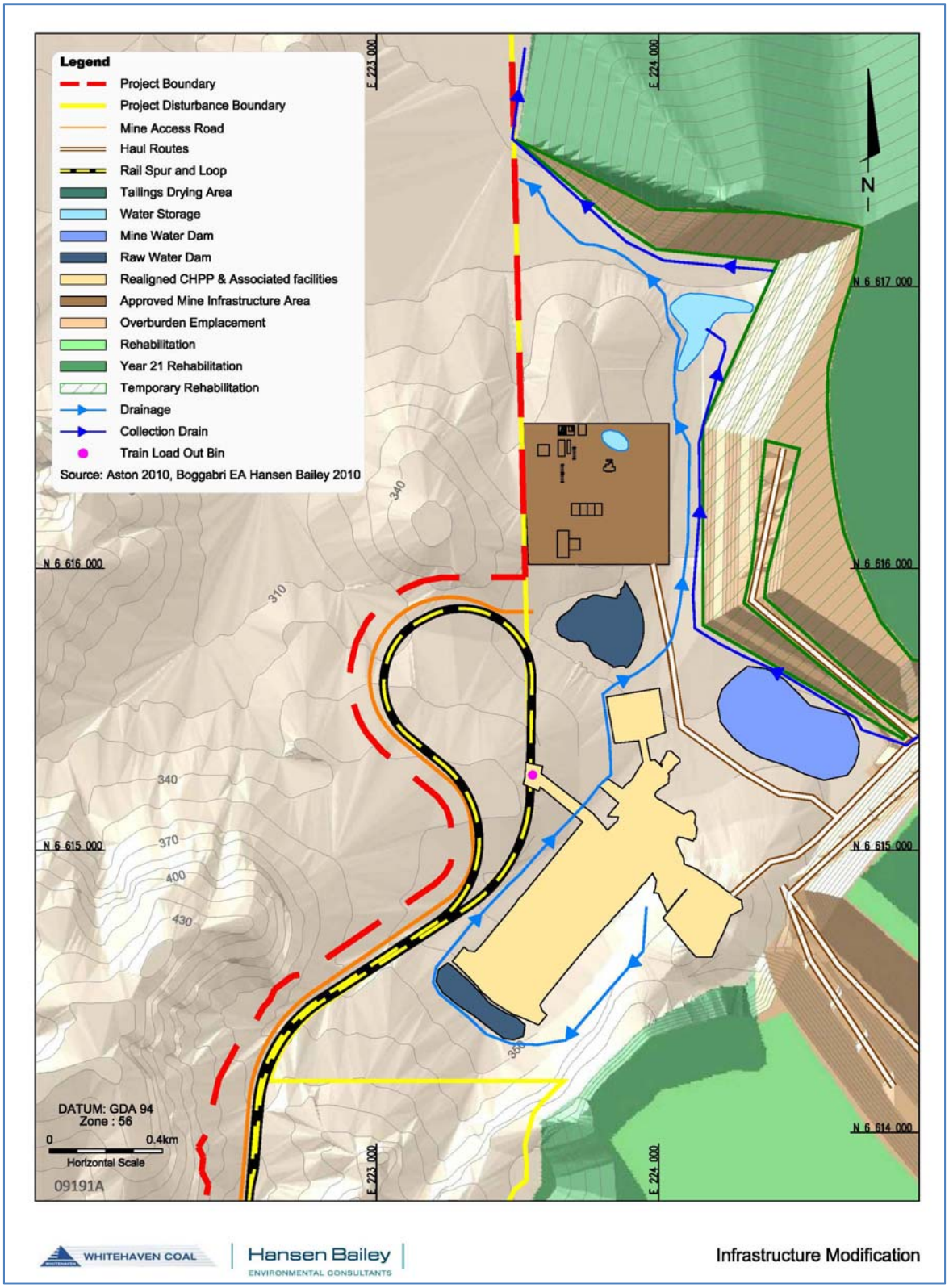

Figure 2: Infrastructure Modification

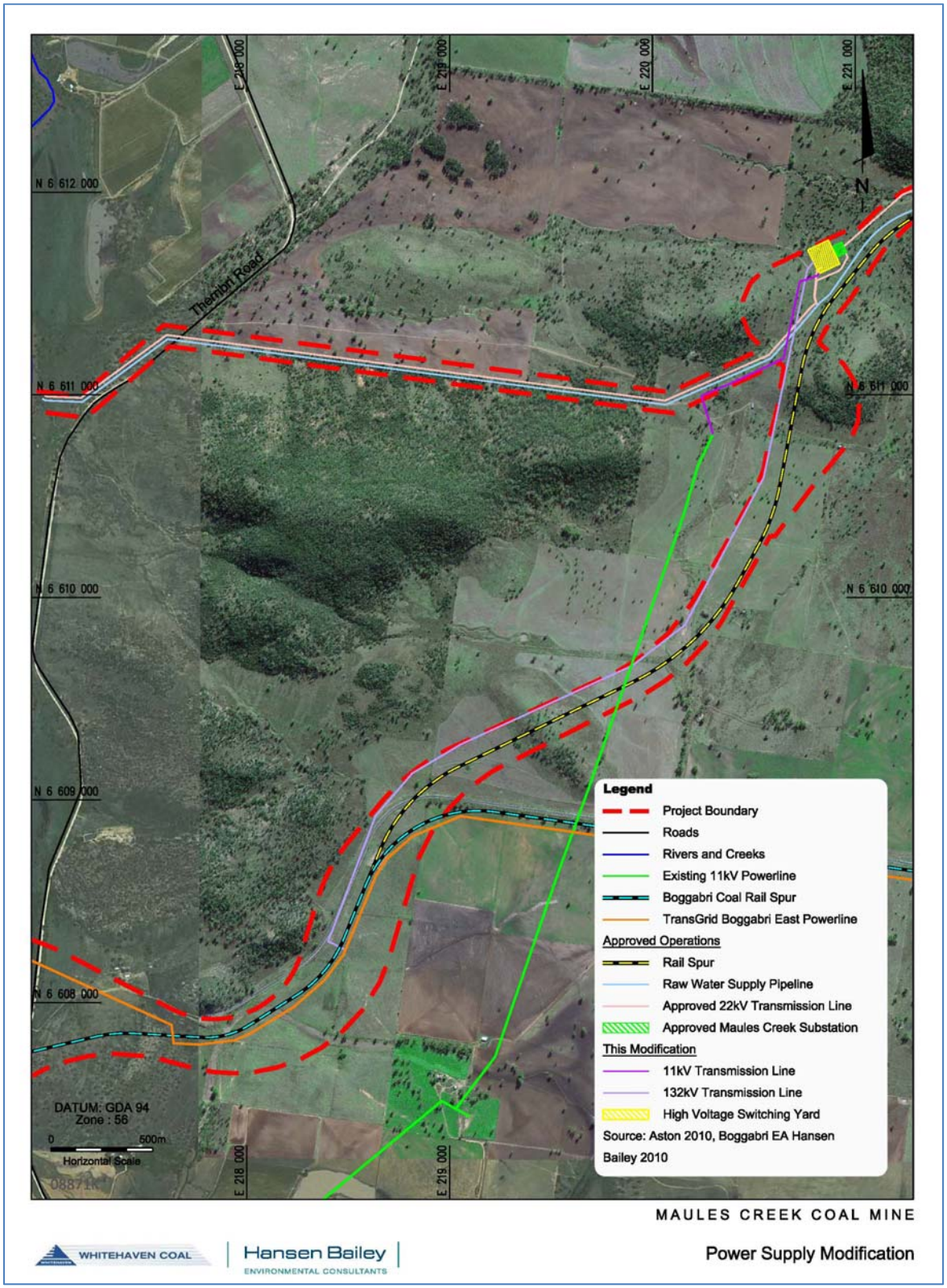

Figure 3: Power Supply Modification

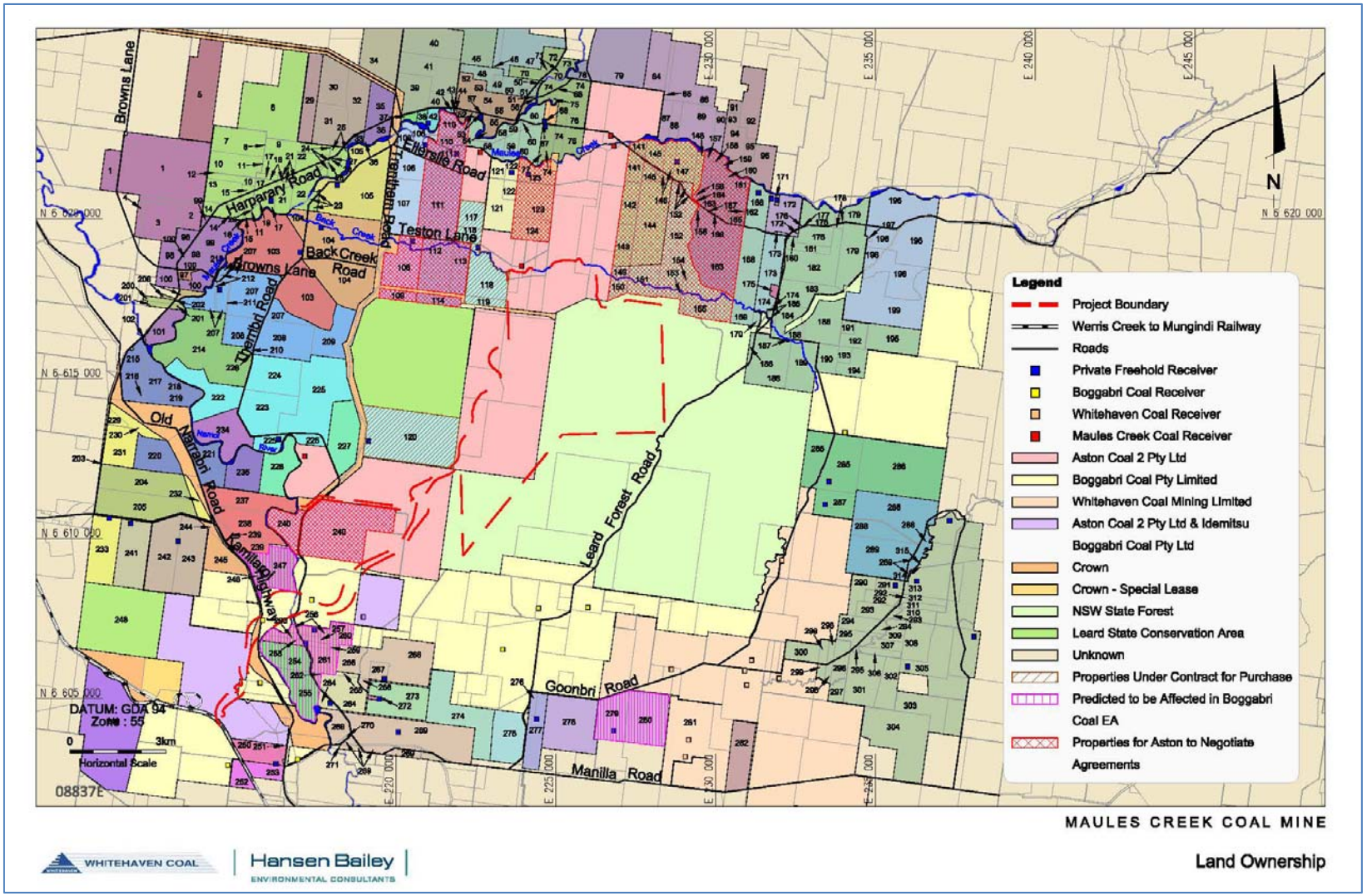

Figure 4: Land Ownership

APPENDIX B

Acoustics Impact Assessment

BRIDGES
ACOUSTICS

ABN: 73 254 053 305

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28 March 2013
Ref: J0130-60-L2

Hansen Bailey Pty Ltd
P.O. Box 473
SINGLETON NSW 2330

Attn: Mr Nathan Cooper

Dear Nathan,

MODIFICATION TO THE MAULES CREEK COAL MINE PROJECT APPROVAL

BACKGROUND

The Maules Creek Coal Mine is a proposed open cut coal mine located approximately 15 km north east of Boggabri in the Gunnedah Basin of New South Wales. The proponent for the project is Aston Coal 2 Pty Limited, a wholly owned subsidiary of Whitehaven Coal Pty Limited (Whitehaven). Whitehaven manages the mine on behalf of Maules Creek Coal Pty Limited (MCC) which is a joint venture between Whitehaven (75%), ICRA MC Pty Ltd (15%) and J-Power Corporation (10%).

An application for Project Approval under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), including the Maules Creek Project Environmental Assessment (Maules Creek EA) (Hansen Bailey, 2011) was submitted to the NSW Department of Planning & Infrastructure (DP&I) in July 2011. Project Approval (PA) 10_0138 was granted on 23 October 2012.

The Maules Creek EA describes the 132kV transmission lines and associated switching station to be constructed under a separate approval to be sought from TransGrid. At the time of drafting the Maules Creek EA, the design of the proposed transmission line and associated switching station had not been completed. The Modification is sought to obtain the appropriate approval for the construction and operation of the high voltage transmission lines and associated switching station.

This letter describes an assessment of acoustic issues associated with the construction and operation of the high voltage power supply system for the mine. The assessment has also considered the realignment of the Coal Handling and Preparation Plant (CHPP) and other associated facilities arising from detailed design work that has been completed since PA 10_0138 was granted.

THE PROJECT

This assessment considers acoustic issues associated with the following components:

- Construction of approximately 5 km of high voltage transmission line 132 kV) between TransGrid's Narrabri to Boggabri East 132 kV Transmission Line and the proposed TransGrid Boggabri North 132 kV Switching Station;
- Construction of TransGrid's Boggabri North 132 kV Switching Station;
- Extension of an existing 11 kV transmission line to the Transgrid Boggabri North Switching Station; and

- Construction of the CHPP and associated facilities according to a realigned plan as a result of detailed design which differs from that conceptually illustrated within the Maules Creek EA.

NOISE CRITERIA

The Project Approval for the Maules Creek Project includes Condition 7 of Schedule 3 which specifies an operating noise criterion of 35 LAeq,15min at all privately owned residences that are not subject to an agreement with MCC.

Condition 4 of Schedule 3 specifies a construction noise criterion of 40 LAeq,15min at all privately owned residences from construction work associated with the rail spur. Construction work associated with the Maules Creek Mine, including the Mine Infrastructure Area (MIA) and CHPP, is subject to normal operational noise criteria. As the transmission lines and switching station would be constructed in conjunction with and immediately adjacent to the rail spur, a daytime construction noise criterion of 40 LAeq,15min has been adopted for this work.

Adopted noise criteria are consistent with, or more stringent than, the NSW INP and the Interim Construction Noise Guideline.

ASSESSMENT

CHPP NOISE

Noise from the realigned CHPP has been assessed using a modified EA noise model. The EA included results from a noise model of the concept mine plan, including the concept design for the CHPP and associated facilities. Detailed design work has progressed since the EA was completed, resulting in a relatively minor realignment of the CHPP and associated facilities. The EA assessed two CHPP configurations:

- Year 1, with a front end loader loading product coal into a hopper for conveying to the rail load out system. This temporary situation was proposed due to the cost and long lead time required to purchase a slewing luffing bucket wheel reclaimer for the product stockpile; and
- Years 5-21, with the completed stockpiles and a slewing luffing bucket wheel reclaimer operating.

Considering the CHPP in isolation, both the Year 1 and Years 5-21 situations assessed in the EA would produce similar noise levels at receiver properties. Additional noise from the reclaimer and an additional ROM bin and primary sizers in Years 5-21 would be approximately balanced by removal of the Year 1 front end loader from the product coal stockpile. However, as mining in Year 1 would not yet ramp up to full production, total project noise levels in Year 1 including noise from mining sources are substantially lower than in subsequent years. This assessment therefore considers only the Years 5-21 CHPP situation.

The conceptual CHPP alignment considered in the EA and the Modification CHPP alignment and associated modelled noise sources are shown in Figures A1 and A2 in Appendix A. Mining sources have not changed and have therefore not been considered. Noise levels have been calculated for the most critical evening/night prevailing weather conditions considered in the EA, as shown in Table 1.

The equivalent inversion strength shown in the last row of Table 1 has been calculated for downwind receivers according to Equation 1, which describes the relationship between the noise enhancing effect of winds and inversions in the noise model software.

Equivalent Inversion °/100m = Inversion °/100m + 2.5 x Wind speed m/s. *Equation 1.*

An equivalent inversion of 8 °C/100m would cause significant noise enhancement and would be consistent with, or stronger than, a G class inversion. Separate model results for a G class inversion are therefore not required.

Table 1: Modelled Weather Conditions, Evening/Night Prevailing.

Atmospheric Parameter	Evening and Night		
	Inversion No Wind	Inversion ESE Wind	Inversion SSE Wind
Temperature, °C	10	10	10
Relative Humidity, %	90	90	90
Wind Speed, m/s	0	2	2
Wind Direction	-	ESE	SSE
Temp Gradient, °C/100m	3	3	3
Equivalent Inversion °C/100m	3	8	8

Noise contours for both the EA and Modification situations, considering only noise from the CHPP, are included in Figures A3 and A4 in Appendix A for the EA alignment and the Modification alignment, respectively. The closest residences to the CHPP are:

- Residences 108, 118, 123 and 126 have been acquired by MCC, are subject to an agreement with MCC, or are subject to acquisition under current conditions of PA 10_0138, and are therefore not considered to be sensitive receivers for the purposes of this assessment; and
- Residence 122 is predicted to receive a CHPP noise reduction of approximately 0.4 dBA, and a total noise reduction of approximately 0.1 dBA, as a result of the Modification.

All other residences are further from the CHPP and would receive insignificant, and therefore acceptable, noise from the CHPP.

The realigned CHPP would also produce similar, and acceptable, maximum noise levels to the conceptual CHPP alignment described in the EA. No increase in the potential for sleep disturbance is therefore expected to occur compared to the maximum noise levels described in the EA.

SWITCHING STATION NOISE

The Boggabri North 132kV Switching Station is expected to include the following components:

- Overhead feeders;
- High voltage switchgear, including emergency isolation switches;
- Voltage transformers to identify any phase imbalances; and
- Control and monitoring equipment, including a control room fitted with an air conditioner.

The overhead feeders, switches and control and monitoring equipment do not produce significant noise. Typical sound power levels of significant equipment, based on previous assessments in high voltage substations operated by others, include:

- Voltage transformer – typically inaudible, 51 dBA for an unusually noisy unit; and
- Control room air conditioner – up to 85 dBA.

A total sound power level of up to 85 dBA may occur as the control room air conditioner is operated, which typically only occurs for short periods when the station is manned and rarely occurs during the night. Nevertheless, the worst case situation with the air conditioner operating at night has been considered. Up to 6 voltage transformers are anticipated to be installed within the substation to provide control and monitoring signals, however noise from these small transformers would be insignificant compared to an air conditioner and would not normally be audible outside the substation boundary.

The nearest receiver to the substation is Residence 120 located approximately 2.2 km to the north west, although this residence is subject to an agreement with MCC. Residence 120 is expected to

receive 10 dBA from operation of the switching station, although noise enhancement during the night may increase received noise levels up to 20 dBA.

Noise levels at Receiver 225, which is the closest privately owned receiver that is not subject to an agreement with MCC, would typically not exceed 3 dBA but may reach 13 dBA during strongly noise enhancing weather conditions. Noise from operation of the substation and transmission lines would therefore be inaudible at all receivers under all conditions.

POWER SUPPLY CONSTRUCTION NOISE

The Boggabri North 132kV Switching Station and associated 132 kV and 11 kV high voltage transmission lines would be constructed over a period of approximately 12 months and would require various earthmoving machines, mechanical and electrical installation tools including mobile cranes and trucks, and various powered and unpowered hand tools.

The transmission line routes would remain within approximately 100 m from the rail spur and mine access road routes, while the southern side of the switching station is less than 50 m from the rail spur. As all privately owned residences are more than one kilometre from the rail spur, construction work associated with the power lines and substation would be indistinguishable from, and relatively minor compared to, construction work associated with the rail spur and mine access road as assessed in the EA. No appreciable change in the construction noise levels predicted in the EA is therefore expected.

Any evening or night construction work associated with the power supply system should be completed according to the Noise and Blast Management Plan, or an equivalent plan developed by the construction contractor.

CONCLUSION

This assessment has indicated noise levels from the relocated CHPP would be very similar to noise levels from the CHPP as assessed in the EA, with a noise reduction of up to 0.1 dBA predicted at the closest receiver due to the realigned CHPP.

Noise levels from operation of the proposed power supply switching station and associated transmission lines would remain less than 20 dBA at any receiver, which will ensure operational noise from the power supply system will remain inaudible under all circumstances.

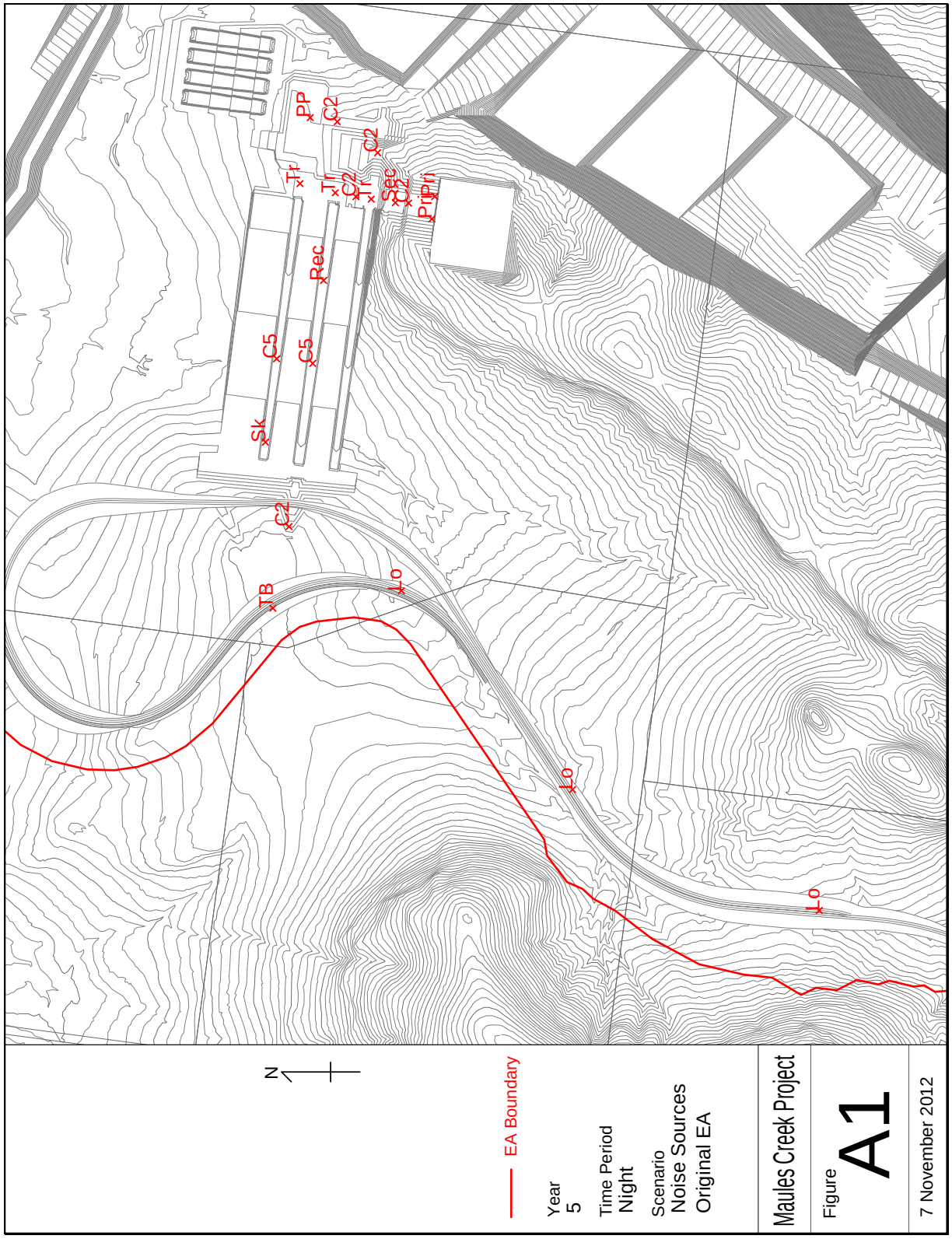
Construction noise associated with the power supply system would be audible at closest residences at times, however would be indistinguishable from and relatively minor compared to construction work associated with the adjacent rail spur and mine access road. The construction noise assessment in the EA, and results and conclusions from that assessment, would therefore remain valid.

We trust this assessment provides sufficient information to assist in determining the Modification. Please contact the undersigned for any further information or discussion.

Yours faithfully,

MARK BRIDGES BE (Mech) (Hons) MAAS
Principal Consultant

APPENDIX A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EA Boundary
Year
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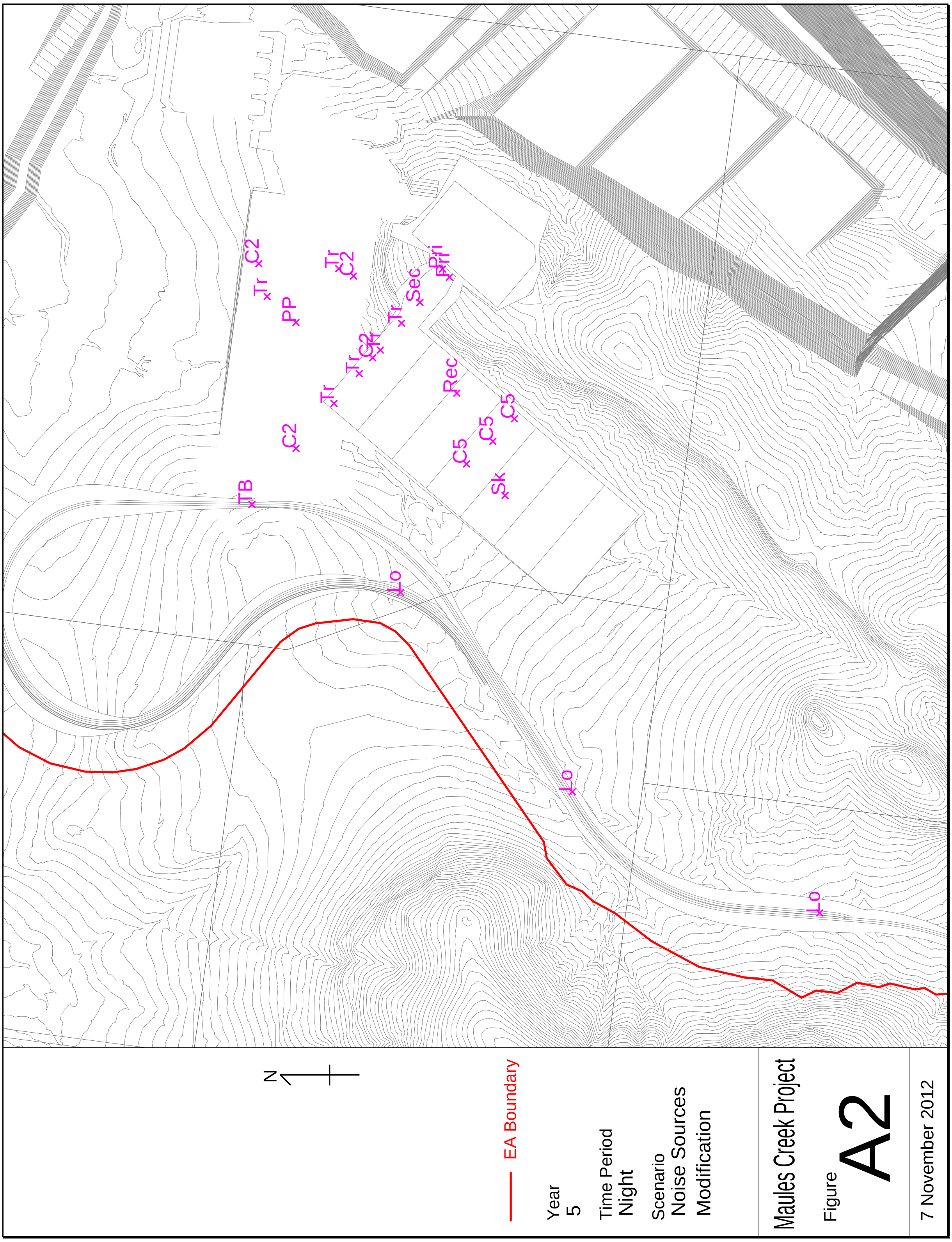
Time Period
Night
Scenario
Noise Sources
Original EA
Maules Creek Project
Figure
A1
7 November 2012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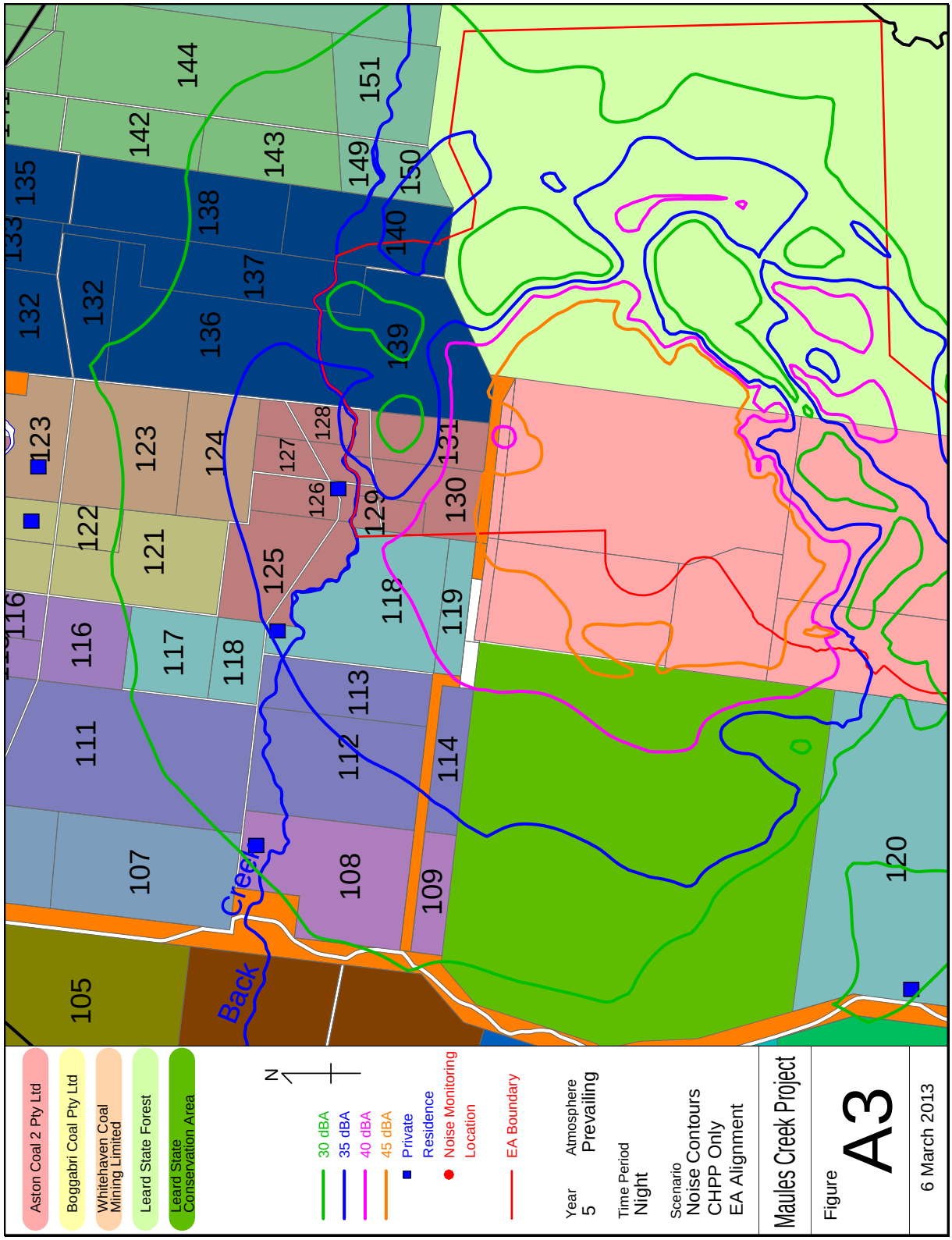
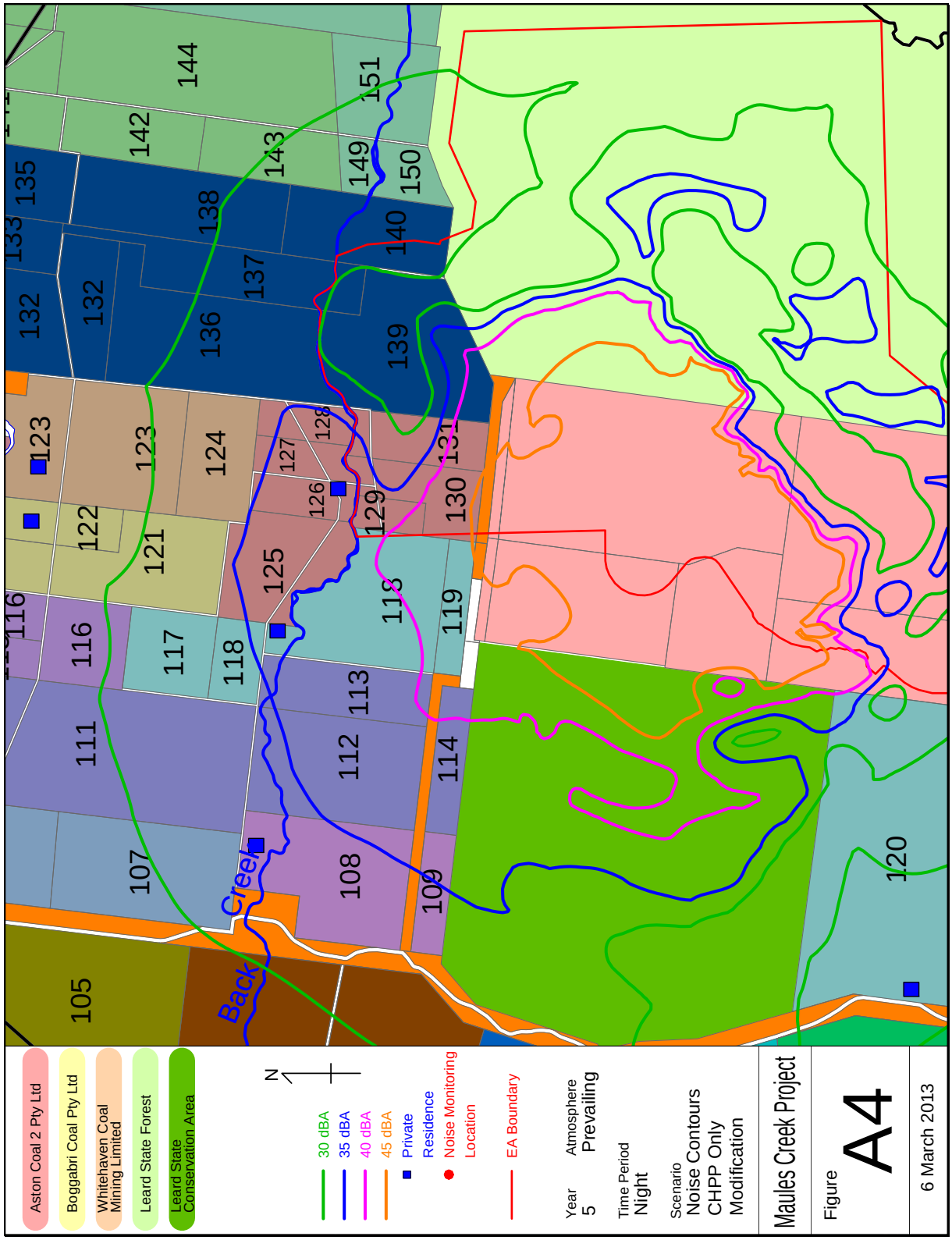

Aston Coal 2 Pty Ltd
Boggabri Coal Pty Ltd
Whitehaven Coal Mining Limited
Leard State Forest
Leard State Conservation Area
N
30 dBA
35 dBA
40 dBA
45 dBA
Private Residence
Noise Monitoring Location
EA Boundary
Year 5
Atmosphere Prevailing
Time Period Night
Scenario Noise Contours CHPP Only EA Alignment
Maules Creek Project
Figure A3
6 March 2013
Back Creek


Aston Coal 2 Pty Ltd
Boggabri Coal Pty Ltd
Whitehaven Coal Mining Limited
Leard State Forest
Leard State Conservation Area
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30 dBA
35 dBA
40 dBA
45 dBA
Private Residence
Noise Monitoring Location
EA Boundary
Year 5
Atmosphere Prevailing
Time Period Night
Scenario Noise Contours CHPP Only Modification
Maules Creek Project
Figure A4
6 March 2013
Back Creek

APPENDIX C

Ecology Review

28 March 2013

Nathan Cooper
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ECOLOGICAL IMPACT ASSESSMENT OF MAULES CREEK MODIFICATION: EXTENSION OF THE 11KV LINE TO THE PROPOSED SUBSTATION

Dear Nathan,

We understand that an application for the Modification of the Maules Creek Coal Mine (PA 10_0138) is being prepared under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This Modification is required to enable the construction of infrastructure, where the final engineering design has resulted in minor adjustments to the alignment and location of infrastructure as presented in the Maules Creek Environmental Assessment (EA), and thus requires a modification to application to be sought to PA 10_0138.

This letter provides an ecological assessment of the Modification. The purpose of this assessment is to determine whether the Modification is likely to result in any significant or unforeseen changes to the impacts predicted in the Maules Creek EA. The assessment focuses particularly upon threatened flora and fauna listed by the NSW *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1. The Modification

A detailed description of the Modification components and the construction methods is provided in the Project Approval Modification Environmental Assessment (the Modification EA). The Modification includes the following components:

- Construction of a 132kV switching station adjacent to the approved Maules Creek water pipeline route (i.e. the Boggabri North 132kV switching station);

- Construction of approximately 5 km of high voltage transmission line (132kV) from the Boggabri North 132kV switching station to the Narrabri to Boggabri East 132kV transmission line;

- An extension of an existing 11kV transmission line that is currently located outside of the Maules Creek Project Boundary to connect to the Boggabri North 132kV switch station; and

- Realignment of the Coal Handling and Preparation Plant (CHPP) and associated facilities from that shown conceptually in the Maules Creek EA.

We note that the realignment of the CHPP and associated infrastructure will remain within the Project Disturbance Boundary that was approved for PA 10_0138. As such, the realignment of the CHPP and associated infrastructure will effectively not change the ecological impacts that were predicted in the Maules Creek EA. Our assessment focuses on those components that are located outside the area of predicted impact; primarily the extension of the 11kV transmission line and the 5 km 132kV transmission line.

The extension of the 11kV transmission line will require the construction of power poles and the construction of the 132kV transmission line will require a series of singular pole suspension structures and twin pole tension structures.

The construction of the 132kV and 11kV transmission lines will require minimal removal of trees and shrubs. Localised clearing around each transmission pole will be required for a work area to facilitate installation of the pole as well as within 15 m from the centre line of the 132kV transmission line. These areas will be maintained as a transmission line easement when construction is completed.

Any areas that require cut and fill works to develop a level platform will be rehabilitated using native grass seeds at the completion of works.

Primary access will be from the approved Mine Access Road with minor gravel access tracks from the Mine Access Road to the easement.

2. Baseline Ecological Information Used in this Assessment

Cumberland Ecology prepared the flora and fauna assessments for the Maules Creek EA. As part of that assessment, a vegetation map was developed for the Project Boundary and most of the properties surrounding the linear infrastructure corridor. These properties were assessed with respect to threatened species, species habitat and threatened ecological communities. Therefore, the biodiversity values for the land in which the Modification components are located are well known. We have drawn upon this information to assess the potential biodiversity impacts of the Modification.

3. Ecological Impact of the Proposed Modification

The main biodiversity value that has potential to be impacted by the Modification is Box Gum Woodland and Derived Native Grassland. Box Gum Woodland and Derived Native Grassland is listed as a Critically Endangered Ecological Community (CEEC) under the EPBC Act and Endangered Ecological Community (EEC) under the TSC Act.

The Boggabri North 132kV switching station and the proposed routes for the 132kV and extended 11kV transmission lines all occur in cleared areas and do not intersect any areas of woodland or forest vegetation. Our existing vegetation mapping indicates that these components will be located largely in low diversity derived native grassland; areas cleared for crop planting; exotic pastures; and improved native pastures. Although some of the low diversity native grassland areas are derived from the clearing of Box Gum Woodland and Derived Native Grassland, these areas do not form part of the CEEC / EEC.

As the Boggabri North 132kV switching station and the proposed routes for the 132kV and extended 11kV transmission lines occur in cleared areas, the clearance of trees and shrubs for the works areas (approx. 30 m x 30 m) around the power poles and the establishment and maintenance of the transmission line easement is anticipated to be minimal. No threatened plants occur, or are likely to occur within the area of the proposed Modification and no threatened fauna species are considered likely to make significant use of such habitats.

4. Conclusion

The Modification is located in cleared areas; therefore the clearing of trees and shrubs during construction of the switching station and transmission lines and as part of the continued maintenance of the easement is unlikely to entail significant tree clearing.

The Modification is unlikely to have a significant impact on Box Gum Woodland or habitat for threatened species. The Modification components will be located in cleared areas that include low diversity derived native grassland, crop land, exotic pastures and improved native pastures. The Modification components will not traverse any areas of derived native grassland that is sufficiently diverse to be included as part of the Box Gum Woodland and Derived Native Grassland CEEC / EEC.

We therefore conclude that the proposed modification will have no significant impact upon native flora and fauna, and in particular will have no significant impact upon threatened biota (communities, species and populations). We note that the proposed Modification does not differ in substantive terms from the original approved elements in terms of their ecological impacts.

Yours sincerely,

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