

Appendix 3 – Current Austar Coal Mine Operations

1.0 Summary of Current Mining Operations

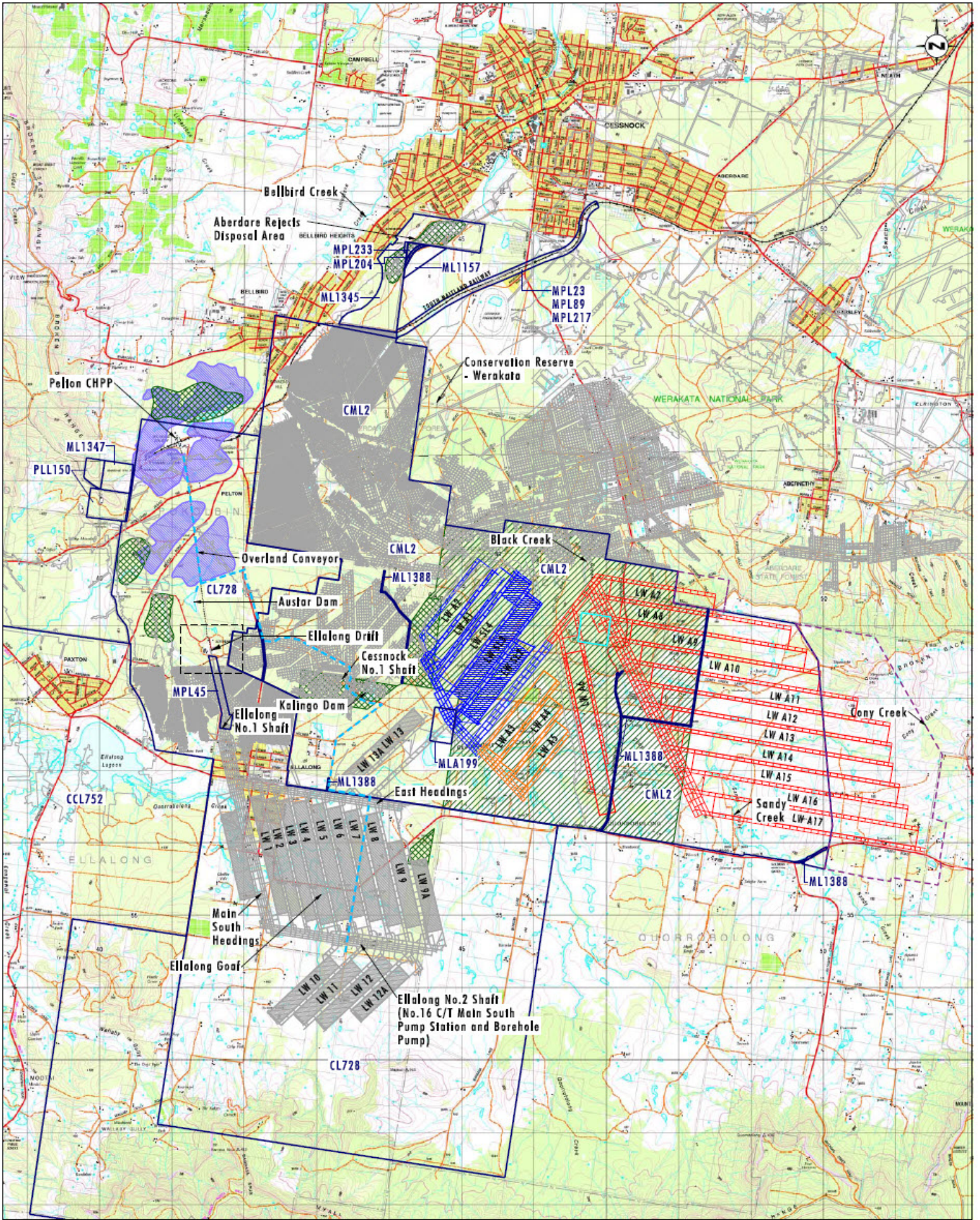
The essential features of the Austar mine are particularised in **Table 1**.

Table 1 – Summary of Approved Operations

	Approved Operations
Approved Production	Production of 3 Mtpa of coal per year
Operating Hours	24 hours, 7 days per week
Number of Employees	200 to 275
Mining Methods	Conventional retreat long wall mining and LTCC
Infrastructure	<ul style="list-style-type: none"> • Drift sites at Ellalong and Pelton Collieries; • CHPP at Pelton; • Overland conveyor from Ellalong to Pelton CHPP; • Rail loading facility and rail spur adjacent to Pelton Colliery; • Various ventilation and access shafts – (including Ellalong No.1 Shaft, Ellalong No.2 Shaft, an upcast ventilation fan at Shaft No. 3 and Downcast at Shaft No.4 both located at the Kalingo infrastructure site) (refer Figure 1); • Offices and amenity buildings at Ellalong and Pelton Collieries, No. 1 and No.2 shafts; • Water management systems including: drains, diversion banks, sedimentation, treatment and clean water dams, lime treatment plant and water treatment plant; • Electrical substations and compressors; • Nitrogen inertisation plant; and • Diesel and emulsion fluid storage area and dispatch system.
Coal Processing	All coal is processed at the Pelton CHPP which has a nameplate capacity of 600 tonnes per hour. The plant currently processes up to approximately 520 tonnes per hour giving it a functional production capacity of approximately 4.2 Mt per year.
Tailings and Reject Management	Reject and tailings are emplaced at the disused Aberdare Extended Open Cut voids, and at Pelton Colliery in approved areas shown in Figure 1 . As shown on Figure 1 , additional reject emplacement areas have development consent and may be utilised if required.
External Coal Transport	Product coal can be transported by rail to the Port of Newcastle at a rate of up to 3.0 Mtpa (using up to 6 trains per day). Up to 60,000 tonnes per annum can be transported by road.
Underground Access	Main mine entrance is at the Ellalong Drift and Pit Top, Middle Road, which runs off Wollombi Road (refer Figure 1).

2.0 History of Austar Coal Mine

Underground coal mining commenced at the Pelton Colliery in 1916. The Pelton CHPP was constructed in about 1960/1961 for the washing of Pelton Colliery coal. No development consent or other planning approval for the initial construction of the Pelton Colliery or the Pelton CHPP has been located. As the Pelton Colliery was commenced in 1916 well before



Source: LPI NSW, 2005

0 1 2 2.5 km
1:50 000

- Legend**
- Layout for Stage 1 Longwall Panels
 - Layout for Stage 2 Longwall Panels
 - Conceptual Layout for Stage 3 Longwall Panels
 - Old Workings
 - Mining Leases
 - Proposed Stage 3 Extension Boundary
 - Surface Application Area (DA 29/95)
 - Subsurface Application Area (DA 29/95)
 - Water Pipeline
 - Reject Placement Area (DA 74/75/79)

FIGURE 1
Existing Austar Infrastructure

the commencement of planning controls in all likelihood no planning approval for the initial construction exists or was required.

In 1975 development consent for the Ellalong Colliery was granted under Part X11 of the *Local Government Act 1919* and the mine was officially opened in July 1979. The 1975 development consent envisaged that coal from the Ellalong Colliery would be transported by conveyor from the Ellalong Drift and Pit Top to the Pelton CHPP. The location of underground workings associated with Pelton and Ellalong Collieries are shown on **Figure 2**.

In early 1994 high gas levels were encountered in the southern part of the Ellalong Colliery. In 1996 development consent was granted to extend the Ellalong Colliery into the Bellbird South area to allow development in an area not affected by high levels of coal seam gas.

In 1998 Southland Coal Pty Limited acquired the Ellalong and Pelton Collieries and amalgamated them with Bellbird South. Ellalong, Pelton and Bellbird South Collieries became known as the Southland Colliery. The mine was operated until 2003 when fire broke out in the underground workings. Subsequently, the mine was placed into receivership and operations were placed on care and maintenance.

In December 2004 YanCoal Australia purchased the Southland Coal assets and changed the name of the mine to the Astar Coal Mine. The location of Astar mine infrastructure and previous underground workings is shown on **Figures 1 and 2**.

Mining proceeded in the reconfigured Stage 1 which was approved by a modification of the 1996 Minister's Consent to allow for the extraction of coal by Longwall Top Coal Caving (LTCC) method. A further section 96 modification (Stage 2) has been lodged to allow LTCC extraction of longwall panels A3 to A5. This modification is awaiting determination by the Minister for Planning.

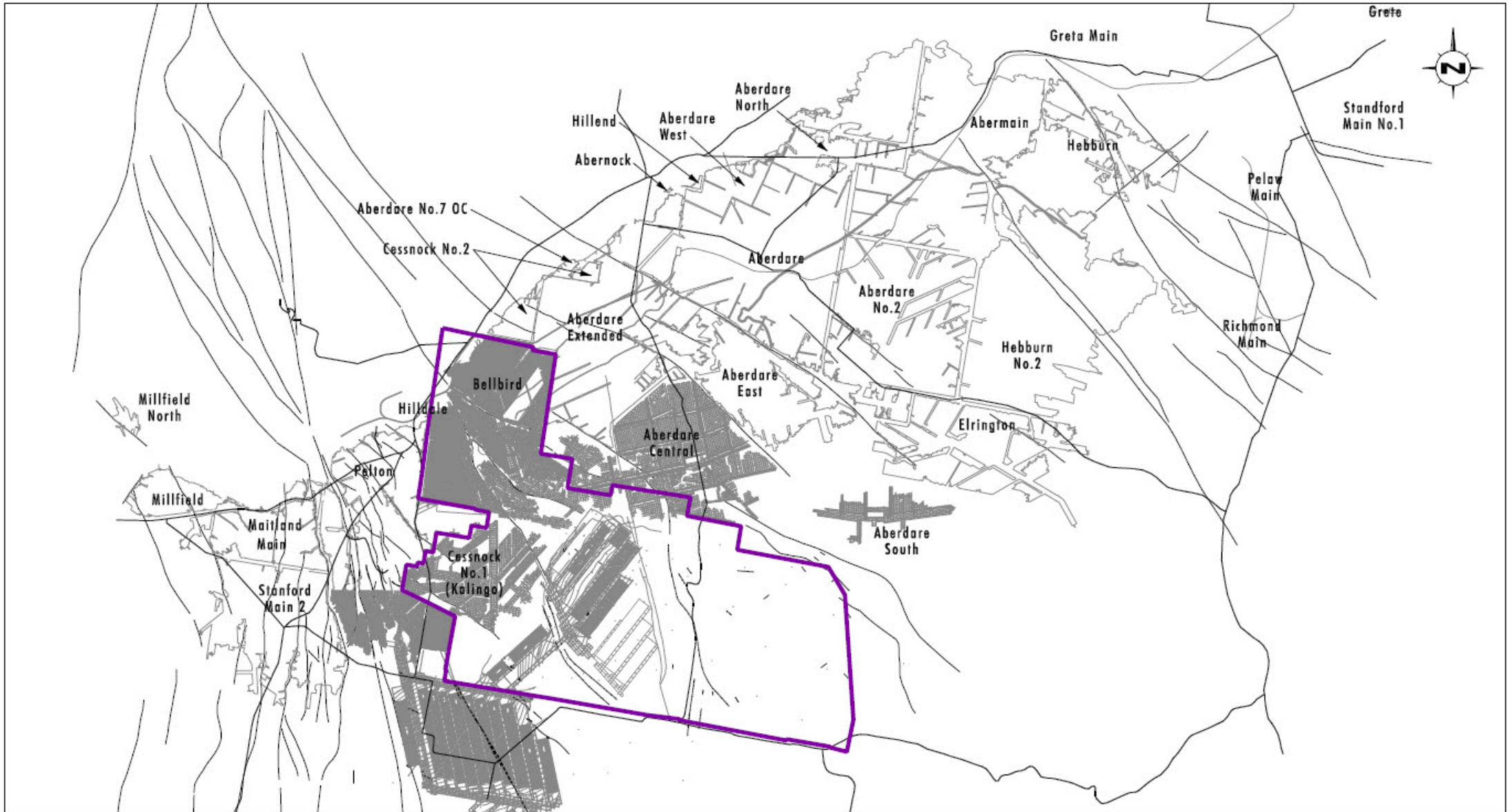
3.0 Current and Proposed Future Mining

Mining is currently taking place in the Bellbird South extension area pursuant to the 1996 Minister's Consent (as modified in 2006) where longwall panel A2 is being extracted using LTCC techniques. Mining of Longwall A1 was completed in August 2007 and mining of Longwall A2 commenced in November 2007. Approximately 3.8 Mt of coal will be mined from Longwalls A1 and A2. This is described as Stage 1.

Coal from Stage 1 is brought to the surface at the Pit Top, conveyed to the Pelton CHPP, processed and handled at the Pelton CHPP and railed or transported by road to the Port of Newcastle via Astar Rail Line and the South Maitland Railway as well as the Main Northern Rail Line. In addition specialty coal product is also transported by road to other destinations.

A further Section 96 modification of the 1996 Minister's Consent is presently awaiting determination which (subject to approval by the Minister) will allow the extraction of coal by LTCC methods in longwall panels A3 to A5. This is described as Stage 2 and will involve mining approximately 5 Mt of coal.

At the end of Stage 2 approximately 11.4 Mt of the identified 98 Mt of coal within the Bellbird South extension will have been extracted. The extraction of the remainder of this coal and coal from the proposed extension to mining lease CML2 is described as Stage 3 and is the subject of this project approval application. Coal mined from Stage 3 will be transported to the surface, processed and transported off-site in the same manner as coal from Stages 1 and 2. At the end of Stage 3 approximately 63 Mt of the identified 98 Mt of coal within the former Bellbird South extension will have been extracted.



Source: Auster Coal Mine

0 1000 2500 3000m
1:100 000

Legend
 Consolidated Mining Lease (CML) 2

FIGURE 2
Previous Underground Workings

4.0 Ellalong Drift and Pit Top Facilities

The location of the existing Ellalong Drift and Pit Top facility for the mine is shown on **Figure 1**. The layout of Ellalong Drift and Pit Top facilities is shown on **Figure 3**. This facility will be retained and continue to function as the main access point for large equipment and maintenance of the mine. The existing pit top facilities at this location include:

- administration buildings including amenities, training room, bathhouse, first aid room;
- ambulance access and helipad;
- car parks;
- explosive storage area;
- equipment compound;
- fuel and oil storages;
- bulk store;
- rescue station;
- electricity substation;
- coal handling facilities including bins, winder house, overland conveyor;
- sewage treatment facility;
- water storage tanks; and
- various sheds, equipment and materials storages.

4.1 Materials Access

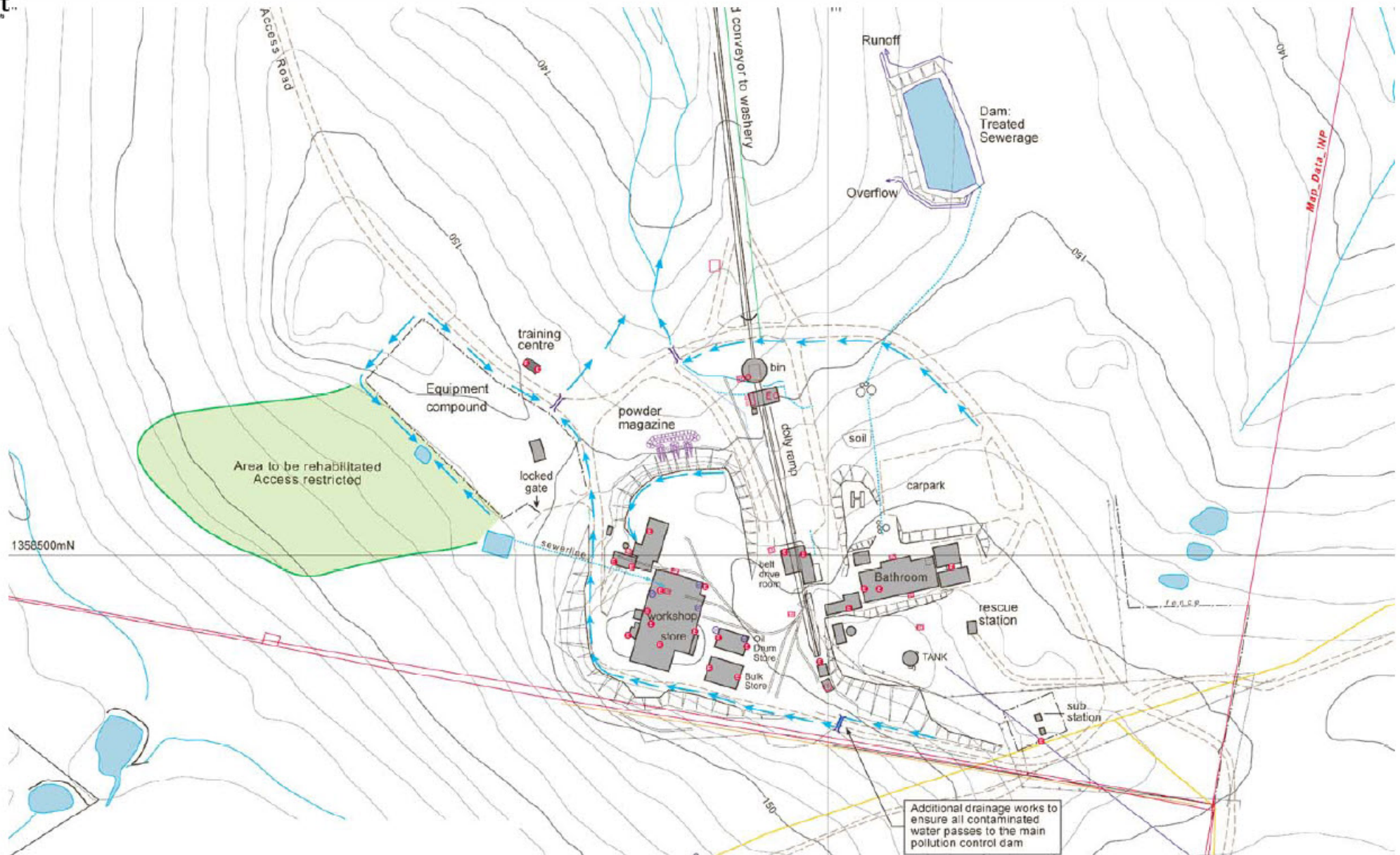
Access to the underground workings is via the Ellalong drift which is 1200 metres long at a grade of 1 in 3.5. The drift houses a conveyor that removes mined coal and a slope haulage system which provides man and materials access. The drift also contains a pumping station and rising main pump line.

4.2 Air Ventilation Systems

Air ventilation systems at the mine consist of the following:

4.2.1 Intakes

- The Ellalong drift which is 1200 metres long, 6.0 metres wide with a nominal 3.1 metre radius arched profile connects the surface to the pit bottom area;
- Ellalong No. 1 Shaft – Consists of a downcast shaft and second egress winder. The shaft is approximately 5.5 metres diameter and 270 metres deep and is located adjacent to the existing pit bottom area; and



- Road / track
- Drain
- Fire fighting equipment
- Spill station
- Power line
- Area to be rehabilitated Access restricted
- Dirty water flow direction
- Culvert

FIGURE 3

Existing Ellalong Drift and Pit Top Facilities

February 2005

Source: Southland Colliery / Geospectrum 1998 Adapted from Figure 3, 2005 Auster MOP

File Name (A4): R10_V1/2274_631.dgn

- The No. 4 Downcast shaft – consists of a 2.44 metre diameter shaft and is 453 metres deep. This shaft solely provides fresh air to the current mine workings area.

4.2.2 Return

- Upcast Ventilation Fan at No. 3 Shaft Site – The facility includes 2 x 750 kW centrifugal fans capable of each supplying 200 m³/s at 5 kPa.

The locations of each of the air ventilation systems are shown in **Figure 1**.

5.0 Coal Handling Preparation Plant

Coal from current underground mining operations (Stage 1) is loaded onto an underground conveyor system and transported along the Ellalong drift to the Ellalong Pit Top where it is transferred to an overland conveyor and transported to the Pelton CHPP.

The existing Pelton CHPP is a single module design which utilises dense medium cyclones and spirals to treat the coal. The CHPP has a nameplate capacity to wash and handle 600 tonnes of coal per hour and currently processes up to 520 tonnes per hour of ROM coal making its maximum annual production capacity approximately 4.2 Mtpa of ROM coal or approximately 3.6 Mtpa to approximately 3.8 Mtpa of product coal. The CHPP can operate 24 hours per day, 7 days per week, 52 weeks per year with current operations restricted by export capacity at the Port of Newcastle.

Austar's ROM stockpile capacity consists of a primary and secondary stockpiles located immediately west of the Pelton CHPP. The ROM stockpile has a live capacity of 5000 tonnes and an overall capacity of 300,000 tonnes. Under normal conditions the maximum amount of coal that is stored in the stockpile is around 100,000 tonnes. All coal stored in excess of the live storage capacity of the system is handled using tracked bulldozers. Secondary products from the Pelton CHPP consist of specialty sized coal products which are collected in a 300 tonne coal bin located to the east of the CHPP.

The washed coal stockpile is located immediately north of the Pelton CHPP and has a maximum capacity of 250,000 tonnes. Under typical conditions, the washed coal stockpile is maintained at less than 100,000 tonnes. The conveyor system under the stockpile has a reclaim capacity of up to 1200 tonnes per hour.

Coal from the Stage 3 workings will be delivered to the existing underground conveyor system which delivers coal to a 2000 tonne surface storage bin at Austar Pit Top. Coal will then be transported by an existing overland conveyor to the Pelton CHPP for processing.

6.0 Coal Transportation

Up to 3 Mtpa of product coal is transported by rail to the Port of Newcastle. The rail line begins at the Pelton CHPP site and extends 9.5 kilometres along the Austar Rail Line before joining the South Maitland Rail Line and then the Great Northern Line at Maitland Junction.

The rail system allows 4 x 48 Class diesel locomotives and 38 wagons, making a train unit of 2200 tonnes. Up to six trains per day can be loaded.

Coal loading capacity at the Port of Newcastle is currently restricting the amount of coal that is transported from Austar Coal Mine. It is expected that the current restrictions and the lack

of capacity at the Port of Newcastle will be resolved in the near future. Once additional capacity is available at the Port, the mine will be able to move into full production, and transport up to 3 Mtpa. It is envisaged at that this may occur by late 2011.

Up to 60,000 tpa of specialty sized coal and other special coal product is loaded by front-end loader into 25 tonne road-trucks for transport to special use customers. A very small amount of coal is also transported to special use customers in small loads of between 1 to 2 tonnes.

7.0 Water Management

The water management system at Austar Coal Mine is detailed in the Site Water Management Plan (SWMP) (Austar October 2007) and comprises three main components being the underground, Pelton CHPP site and the surface water storage systems. The locations of the main components of Austar's infrastructure are shown on **Figure 1**.

An assessment of predicted future groundwater inflow into the mine has been undertaken by Connell Wagner (2007) and forms part of the SWMP (Austar October 2007) which concludes that existing water management infrastructure as described in the SWMP, has sufficient capacity to accommodate mine water from Stage 3. During Stage 3, water will continue to be managed in accordance with Austar's SWMP.

7.1 Underground Mine Water Management System

Austar workings are located downdip of the old Pelton, Bellbird, Aberdare Central and Kalingo workings and receive groundwater inflows directly from these workings. Water quality of the inflows is poor having low pH (2.5 – 3.5), high conductivity (10,000 to 15,000 $\mu\text{S}/\text{cm}^3$), high iron, manganese and sulphur concentrations.

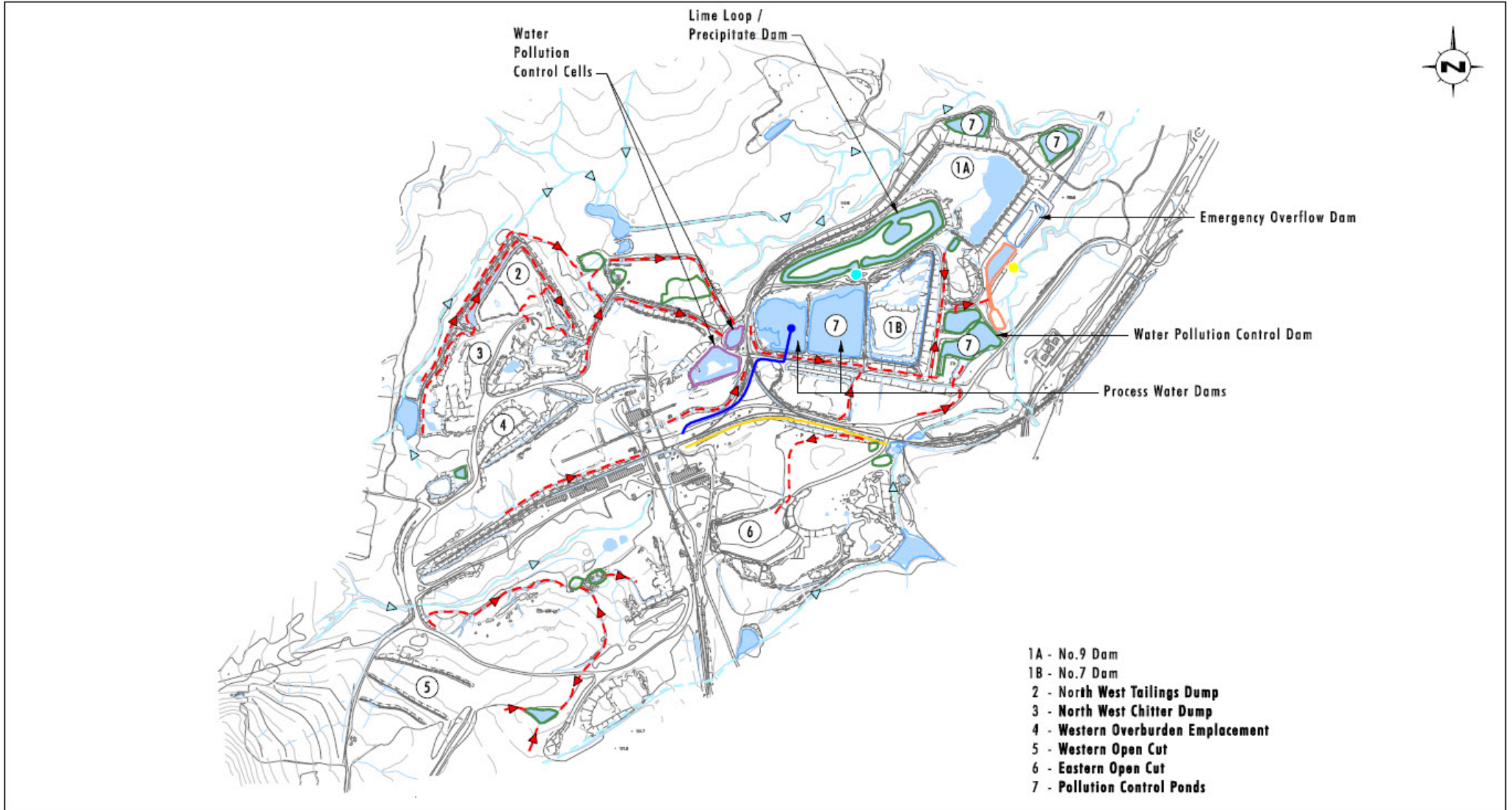
Austar's operations require that the underground workings be dewatered to prevent water flowing into the active mine area. Water is stored in various underground workings. Two underground pumping stations deliver mine water to the surface – No. 16 C/T Main South Pumping Station and the No. 2 Shaft Pumping Station (refer **Figure 1**).

7.2 Pelton CHPP Water Management System

The water management system at Pelton CHPP (see **Figure 4**) consists of four interconnected systems being the water pre-treatment and lime dosing system, the reverse osmosis (RO) treatment plant, the coal washing and handling system and the stormwater runoff and management system. Treated clean water in excess of site needs is discharged into Bellbird Creek in accordance with Austar's Environmental Protection Licence (EPL No. 416) at a rate of up to 2 ML/day annual average.

7.3 Surface Water Storage and Management System

Austar's surface water management system is designed to match the capacity of the underground dewatering systems with additional provision to store and handle surface runoff during heavy rain events. The system is managed in accordance with the requirements of the SWMP (Austar October 2007). The two main surface water storages (apart from the water pollution control dams at the washery) are Kalingo Dam and Austar Dam which are shown in **Figure 1**.



Source: Southland Colliery / Geospectrum 1998, Adapted from Figure 4, 2005 Astar MOP
 Note: Contour Interval 5m

0 200 400 600m
 1:12 000

Legend

- Licensed Discharge Point
- Lime Dosing Plant
- Clean Water Dam
- ▬ Clean Water Flow
- Dirty Water Dam
- ▬ Contaminated Water Flow
- ▬ Discharge Channel
- Emergency Dam
- ▬ Pipeline
- Pollution Control Dam

FIGURE 4

Current Water Management System Pelton CHPP

8.0 Reject Disposal and Tailings Management

Austar has development approval to dispose of rejects and manage tailings at Pelton Colliery (both north and south of Wollombi Road), Pelton Open Cut, Aberdare Extended Open Cut and the areas identified under the 1996 Minister's Consent as Reject Emplacement Areas 1, 3 and 4. Reject emplacement will continue to be in areas previously approved for Ellalong Colliery (DA 74/75/79), Pelton Open Cut (DA 118/691/181) and the Bellbird South extension to Ellalong Colliery (DA 29/95). These areas have capacity for the emplacement of approximately 17.5 Mt of coarse reject. The locations of the approved reject emplacement areas are shown in **Figure 5**.

Coarse reject from the Pelton CHPP is delivered to an 80 tonne refuse bin and trucked via the private haul road to either the Aberdare Extended Open Cut refuse emplacement area or is emplaced in open cut voids at the Pelton Open Cut.

Tailings from the Pelton CHPP is presently discharged into underground mine workings. The return water from these tailings gravitates through the mine workings and is recovered into the Austar Mine via dewatering boreholes.

Reject emplacement and tailings disposal is undertaken in accordance with an approved Mining Operations Plan (MOP) (Austar 2008) as required by Mining Lease conditions issued under the *Mining Act 1992*.

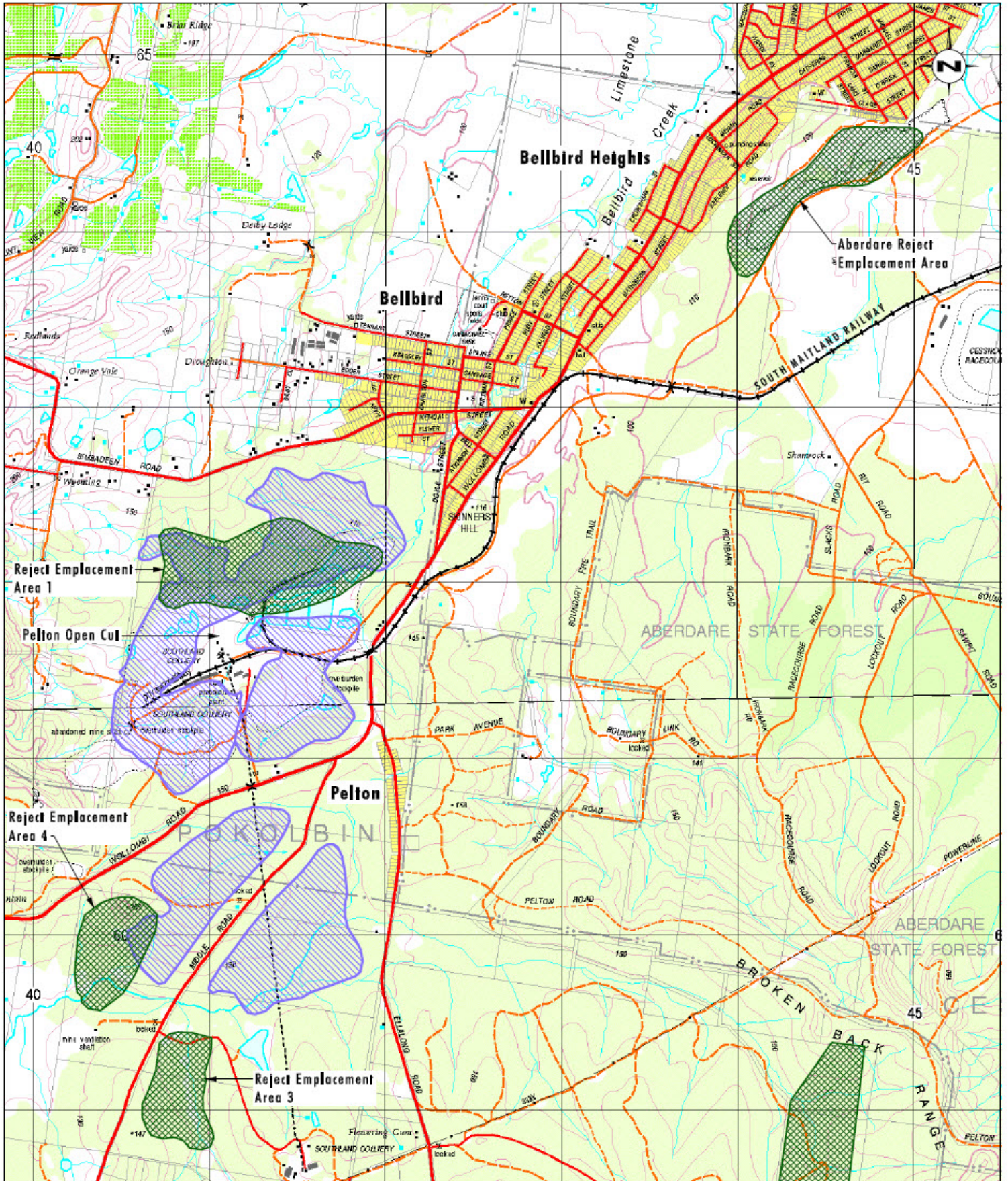
The currently approved reject emplacement areas as defined in the MOP have capacity to readily emplace in excess of 5.5 Mt of coarse reject. Details of Austar's reject emplacement strategy are provided in the MOP (Austar 2008) which will continue to be revised and updated throughout the life of the mine.

Reject emplacement will continue to be undertaken in accordance with the provisions and controls set out in the MOP (Austar 2008). The MOP will continue to be revised and updated throughout the life of the mine.

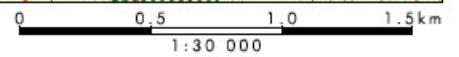
Coarse rejects from Stage 3 will make up approximately 7.2 percent of all ROM coal. On this basis approximately 220,000 tonnes of coarse reject would be generated each year at a production rate of 3 Mtpa. This equates to approximately 3.6 Mt of coarse reject over the Stage 3 life of mine which is less than the 5.5 Mt of existing approved coarse reject emplacement capacity.

9.0 Employment

Currently approximately 200 people are employed at Austar with the size of the workforce being limited by the fact that the mine cannot operate at full production due to export restrictions at the Port of Newcastle. At full production of 3 Mt per year, there will be employment for approximately 275 people in addition to a range of contractors. The existing equipment and workforce extracting coal from Stage 1 and 2 will be utilised in Stage 3.



Source: LPI NSW



Legend

- Reject Employment Area (DA 29/95)
- Reject Employment Area (DA 74/75/79)

FIGURE 5

Reject Employment Areas
(DA 29/95 and DA 74/75/79)

10.0 Current Planning Approval Platform

The Austar mine operations:

- comprise the existing mining operations of the Austar Mine;
- utilise the Austar Rail Line; and
- depend upon the use of the South Maitland Railway.

10.1 Planning Approvals

The approvals platform for the operation of the Austar Mine comprises the development consents under Part 4 of the EP&A Act particularised in **Table 2**

The principle consents in the approvals platform of the Austar Mine are:

(a) Development Consent No. 74/75/9 dated 4 December 1975 granted by the Cessnock City Council (CCC) for the establishment of a coal mine at Ellalong (**1975 Development Consent**); and

(b) Development Consent No 29/95 dated 14 February 1996 granted by the Minister for Planning (**1996 Minister's Consent**) and as modified by the Minister for Planning on 27 September 2006 (**2006 Modification**).

Table 2 – Summary of Approval Platform for Austar Mine

Consent Description	Date	Approval Authority	Approved Development
DA 74/75/79	4 December 1975	CCC	Development Consent for a coal mine at Ellalong <ul style="list-style-type: none"> • Approval for an underground coal mine. • Construction of a new access drift, upcast shaft and ventilation shaft. • Expansion of the Pelton CHPP. • Conveyance of coal from the Ellalong pit top to the Pelton CHPP, operation of the Pelton CHPP for the washing and handling of coal. • Water management systems. • Upgrade of the Pelton rail loading facility and railway spur. • Reject emplacement underground, company owned land, open cut areas adjoining Pelton and other abandoned mine sites.
DA 118/680/93	8 October 1980	CCC	Downcast ventilation shaft and man access shaft, bathhouse and offices at Ellalong Colliery
DA 118/691/181	26 November 1992	CCC	Pelton Open Cut Coal Mine <ul style="list-style-type: none"> • Approval of an open cut coal mine adjoining Pelton Colliery up to 300,000 t of coal and underground mining of approximately 27,000 t of coal from a section of prior workings south of the proposed open cut.

Table 2 – Summary of Approval Platform for Austar Mine (cont)

Consent Description	Date	Approval Authority	Approved Development
DA 118/691/181	11 January 1993	CCC	Pelton Open Cut Coal Mine – Modification <ul style="list-style-type: none"> • Extension of open cut mining area. • Infrastructure and water management modifications.
DA 118/691/229	7 January 1993	CCC	Pelton Coal Handling Preparation Plant – raw coal handling facility, washed coal facility and upgrading water management system <ul style="list-style-type: none"> • Upgrade and replacement of coal handling infrastructure such as surge bin, automatic stacking system, reclaim facilities and skyline conveyor. • Increase in stockpile capacity. • Upgrade to water management system. • Extension of the reclaim tunnel. • Construction of a mine water transfer pipeline from Ellalong Colliery to Pelton. • Provision of underground workings for emergency mine water disposal. • Upgrade of lime treatment plant.
DA 118/693/42	26 November 1993	CCC	Extension of Pelton Open Cut Mine <ul style="list-style-type: none"> • Extension of open cut mining area including emplacement of overburden in previously mined blocks and extension of the mine's water management system.
DA 118/694/152	7 July 1994	CCC	Relocatable office and temporary bathhouse at Pelton Colliery
DA 118/695/22	12 July 1995	CCC	Establishment of overburden stockpile at Pelton Colliery <ul style="list-style-type: none"> • Establishment of an overburden stockpile for the Pelton Open Cut Operations.
DA 118/695/81	12 July 1995	CCC	Additions for bathhouse, office and car park at Ellalong Colliery <ul style="list-style-type: none"> • Extension to the bathhouse at the Ellalong drift site. • Extension of existing offices or construction of portable offices. • Construction of a 4,000 square metre car park.
DA 8/1999/1658	18 February 2000	CCC	Relocation of ventilation facilities at Bellbird South Underground Mine <ul style="list-style-type: none"> • Installation of a ventilation shaft and fan house. • Upgrading of the existing access track to the site from the Pelton-Ellalong Road.
DA 8/2002/655/1	16 October 2002	CCC	Compressor and pump enclosure buildings at Ellalong Colliery
DA 118/695/18	21 February 1995	CCC	Relocatable office at Pelton Colliery

Table 2 – Summary of Approval Platform for Austar Mine (cont)

Consent Description	Date	Approval Authority	Approved Development
DA 29/95	14 February 1996	Minister for Urban Affairs and Planning	<p>Ellalong Colliery extension into Bellbird South</p> <ul style="list-style-type: none"> • Extension of underground mining activities into Bellbird South area (CML 2). • Mine life of 21 years with a production of 3 Mtpa. • Reject emplacement. • Construction and operation of a new infrastructure site including new ventilation shaft and fan(s) (No. 2 Shaft) adjacent to Sandy Creek Road. • Use of Pelton CHPP for washing and handling of coal. • Provision of a maximum raw coal stockpile of 100,000 t. • Reopening of disused Cessnock No.1 Colliery shafts for ventilation and access, or the sinking of new shafts, as required. • Construction of various water management devices including sedimentation and clean water dams and drainage systems. • Transport of up to 3 million tonnes of coal per year by rail and up to 60,000 tonnes per year of coal product by road.
DA 29/95	27 September 2006	Minister for Planning	<p>Extension of underground mining activities into Bellbird South (Ellalong Colliery) – modification</p> <ul style="list-style-type: none"> • Production and transport up to 3 Mtpa of coal with up to 60,000 tonnes of coal being transported by road and the remainder being transported by rail • Use of long wall top caving mining methods in longwall panels A1 and A2. • Installation of a larger capacity fan at the site approved for DA 8/1999/1658. • Installation of a new downcast ventilation shaft. • Installation of a new 10 MVA substation. • Installation of a nitrogen inertisation plant with a 2,000 cubic metre capacity. • Provision of a diesel and emulsion fluid storage area and dispatch system. • Installation of a tube bundle shed to house electronic monitoring equipment. • Upgrade of the existing water treatment plant. • Upgrade of water reticulation and pumps. • Minor embankment stabilisation works at Kalingo Dam.
Development for the purpose of a mine does not require consent		Cessnock Local Environmental Plan 1989 (LEP)	<p>Clause 6 of the LEP adopts Clause 35 of the Environmental Planning & Assessment Model Provisions 1980 which saves from the need for consent under the Cessnock LEP development for the purpose of a mine other than certain exclusions. A number of elements of the Austar Mine were constructed and now operate pursuant to this exemption from the requirement for planning approval.</p>

Table 2 – Summary of Approval Platform for Austar Mine (cont)

Consent Description	Date	Approval Authority	Approved Development
Development for the purpose of a railway undertaking does not require consent		Cessnock Local Environmental Plan 1989	Clause 6 of the LEP adopts Clause 35 of the Environmental Planning & Assessment Model Provisions 1980 which saves from the need for consent under the Cessnock LEP development for the purpose of a railway undertaking.

Note: CCC – Cessnock City Council

10.2 Austar Rail Line (also known as the Pelton Branch Line)

The Austar Rail Line was built in 1918 and serviced the Pelton Colliery and the surrounding mines. The line has always been used for the sole purpose of transporting coal. The line is either on land owned and operated by Austar or within land subject to Mining Purposes Leases No. 23, 89, 217, 269, and 1364 held by Austar. The use of the rail line is properly characterised as a ‘mine’ under the Cessnock LEP.

Development for the purposes of a ‘mine’ could be carried out without development consent under the clause 6 of the Cessnock LEP. However, since 1 August 2007, Part 3A of the EP&A Act has applied to the rail line. The line therefore operates under the continuing use rights provisions of clause 6B of State Environmental Planning Policy (Major Projects) 2005 which allows the transport of coal as part of the operation of the Austar coal mine. As set out in **Table 2** the 1996 Minister’s Consent provides for Austar Coal mine to produce and transport up to 3 Mtpa.

10.3 South Maitland Railway

The South Maitland Railway was used for the conveyance of passengers and the transport of coal and other goods. As it is not solely dedicated to coal mining, nor operated by a mining company, the operation of the line is properly characterised as a ‘railway undertaking’.

The Cessnock LEP in respect to ‘railway undertakings’ provides to the effect that such development does not require development consent under Part 4 or project approval under Part 3A.