

# Singleton Shire Healthy Environment Group

## “Glendell Mine Ravensworth Estate Obstacle”



*A community-based group looking to address Environmental issues affecting Singleton Shire residents*

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We seek identification as to what is making our Children and Community Sick so they can be mitigated by OH&S Compliance Orders.

**SSHEG Focus on Health**

**SSHEG is Not Anti Mining or Anti Power Stations**

**20 January 2020**

Dept of Planning, Industry & Environment

NSW Major Project SSD 9394

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### **“Community ‘Sense of Place & Health’ under threat by Glencore”**

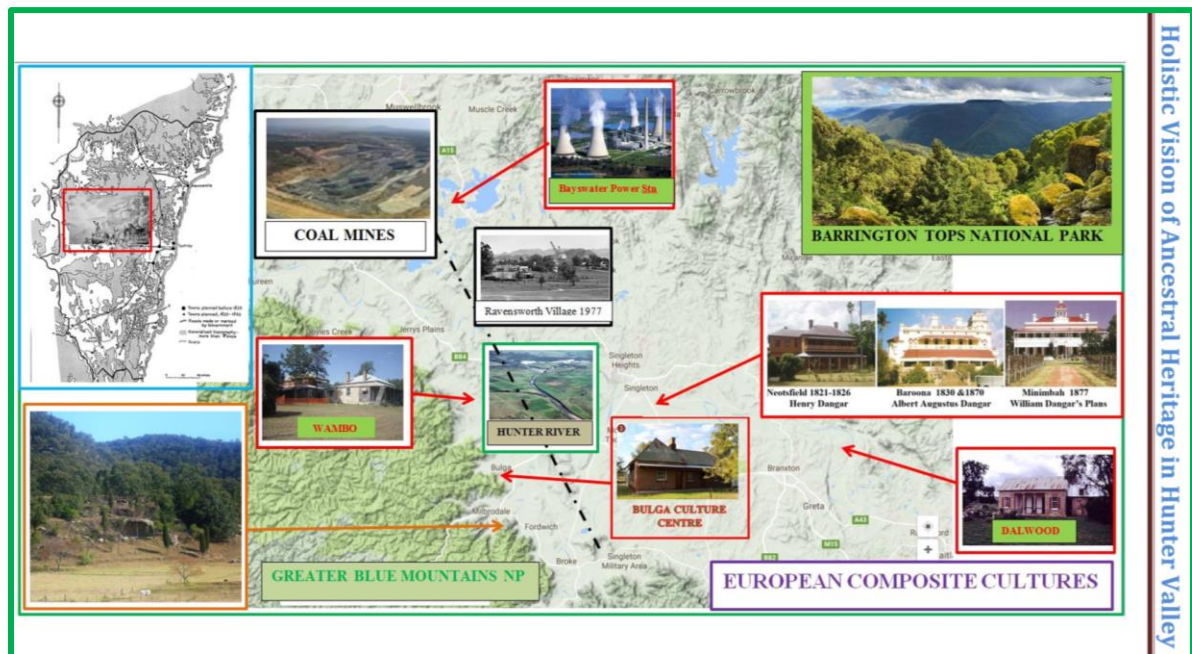
This SSHEG Submission is in response to a somewhat two year clandestine Committee Heritage “Deal” to extract Coal from underneath the Dr James Bowman’s Ravensworth 1820’s Estate in the “Howe Bicentenary Year”; contrary to the longstanding Heritage precedence reinforced a number of times, for example, at Wambo Homestead Estate.

This SSHEG Submission is focused upon Five protection issues for Singleton Shire Residents Health from All Mine Operations: -

- [1] “Health Threat”; Air, Smell, Noise, Vibration, View, Home, Escape.
- [2] “Sense of Place Daily Mine Health disturbances impacting Persons Sensory Stability over time”, Blasting, Vibrations, Visible Plumes.
- [3] Air Quality Mine Pollution Minimisation and Dispersion Mitigation Controls to target Particulate Matter Diseases, and
- [4] Deep seated Ancestral Cultural Heritage lineage loss of Aboriginal, Colonial, Convict & Immigrant “Family Legacy Connection”.
- [5] Patricks Plains State Significant Conservation Area – Aboriginal, Colonial, Convict & Immigrant Heritage of the 1820’s grasslands adjoining the UNESCO Greater Blue Mountains National Parks.

Hunter Valley Coal Mining Air Pollution Dispersion (Concept)						
Air Pollution Dispersion	HIGH A D		Medium		LOW G	
SEASON	SUMMER Nov Dec Jan		Feb Oct	Mar Sept	Apr Aug	WINTER May June July
Time of Day DST +4Hr	3Pm 7pm	Noon 4Pm				Night
Air Temperature	45°C	38°C				Day Minimums
Solar Radiation	A HIGH Mid afternoon		Medium D		LOW Cloudy	G Sunrise – Sunset TOD
Sun Elevation	Summer 80 deg		Solstice 64 deg		Winter 37 deg	North facing
Local Wind Speed	>5m/sec Horiz. Dispersion		D 2-3m/sec		Still/ CALM	G Modelling limited at low Wind F
Turbulent Boundary Layer	A Therm Updraft 1000m Layer				Near Ground 100m Layer	Mixing Height Determinate
Recent Rain Events	DRY				➤ mm/Hr in last 8 Hr	
Elevation Gradient	Deep Mines Valleys & Cliffs		Stockpiles Orientation to N		Flat Plains	Complex Terrain limitations
Surface Drifting	>6m/sec Horiz Dispersion				CALM	
Air Stability Class	Instability A		Neutral D		Stability G	Horiz./Vertical Drift Balanced in Class D

## Air Pollution Dispersion and Minimisation Controls (Att. 1)



## Holistic Vision of Ancestral Heritage in Hunter Valley (Att. 8)

By 2008 the Singleton Shire Residents and Local GP Doctors reported to NSW Health that the 2008 levels of Air Pollution were associated with increased Community Diseases of especially children: confirmed - how in Oct 2013 by World Health- WHO: and remains today; that Upper Hunter Valley Residents who are exposed 24 hrs a day warrants Air Quality Levels for Short (Hours), Medium (Days) and Long term(weeks) to be maintained below these 2008 Levels.

It is this Minimisation Paradigm of Real Time Ambient Air Particulate Matter PM2.5 and PM10 in today's cities, Melbourne, Canberra, Sydney for Hazardous Air Quality and with Diseases appearing in a single hour, that warrants Australian Planning Authorities action to Mitigate the extent of the Disease Compromises that Hunter Valley Residents are being subjected to 24 Hours a Day since 2005.

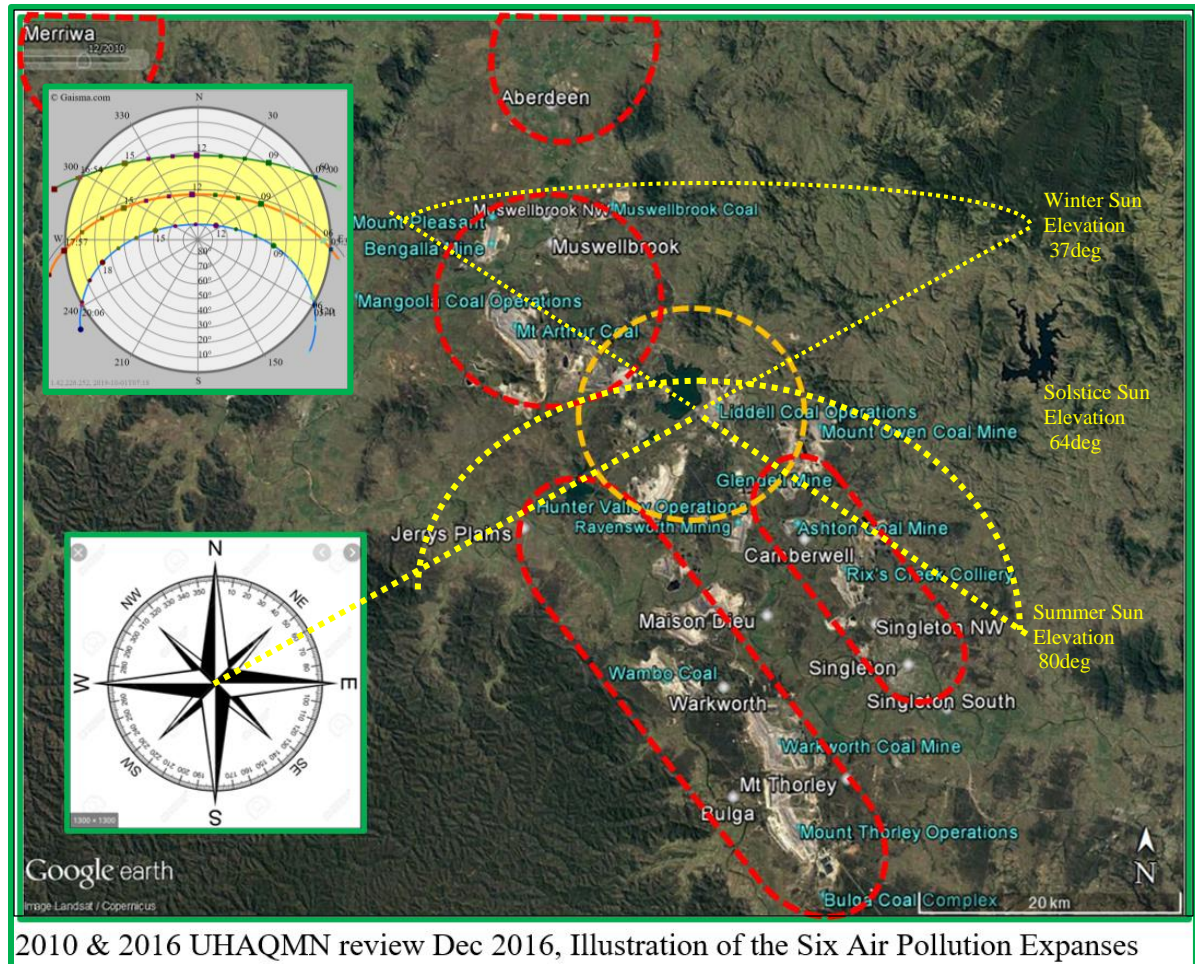
Specifically, the Question Residents ask is: *“Will NSW Planning Authorities recognise here that Glendell Mine's locality (and its incremental Air Pollution Drifting Patterns) are mostly responsible for Camberwell Residents UHAQMN Reported Exceedances; and if approved, will Planning set and enforce for 25years Conditions of Consent (along with all Glendell Mine Undertakings), and of all other contributing Valley Mines to protect Camberwell Residents Health.”?*

*(Further detailing, along with other related Air Quality related Community Disease issues, for Glencore Mining and applicable here are contained in [Attachment 1](#) Mine Pollution Mitigation Controls, Minimisation and Dispersion & [Attachment 2](#) 10 Year Review UHAQMN Proposal 2019 & [Attachment 3](#) NSW Resident's Health Protection Planning.)*

**Air Quality Mine Pollution Minimisation and Dispersion Mitigation Controls to target Particulate Matter Diseases.  
(Modern Technology & Science Applied to Air Pollution Dispersion)**

*What the Community of Singleton Shire is asking of NSW Planning and the Mining Industry is that at all times for Resident's PM10 not to exceed the NEPM 50ug/m3 limit, and that Mine further operate well below this upper limit to “Minimise the PM10 and PM2.5 Rate of Rise frequency” at UHAQMN Continuous Monitoring localities where Residents are being excessively exposed to Mine Air Pollution Drifting Patterns.*

Typically in the Hunter Valley the “*Corridors of Mine Air Pollution*” are observed to generally Drift across the Valley floor on the NNW-SE and SSE Corridors, accumulating in Pockets (Expanses) as well as into Microvalleys pockets adjoining the Escapements as illustrated; based on UHAQMN Data. This is the Cumulative Pollution Haze.

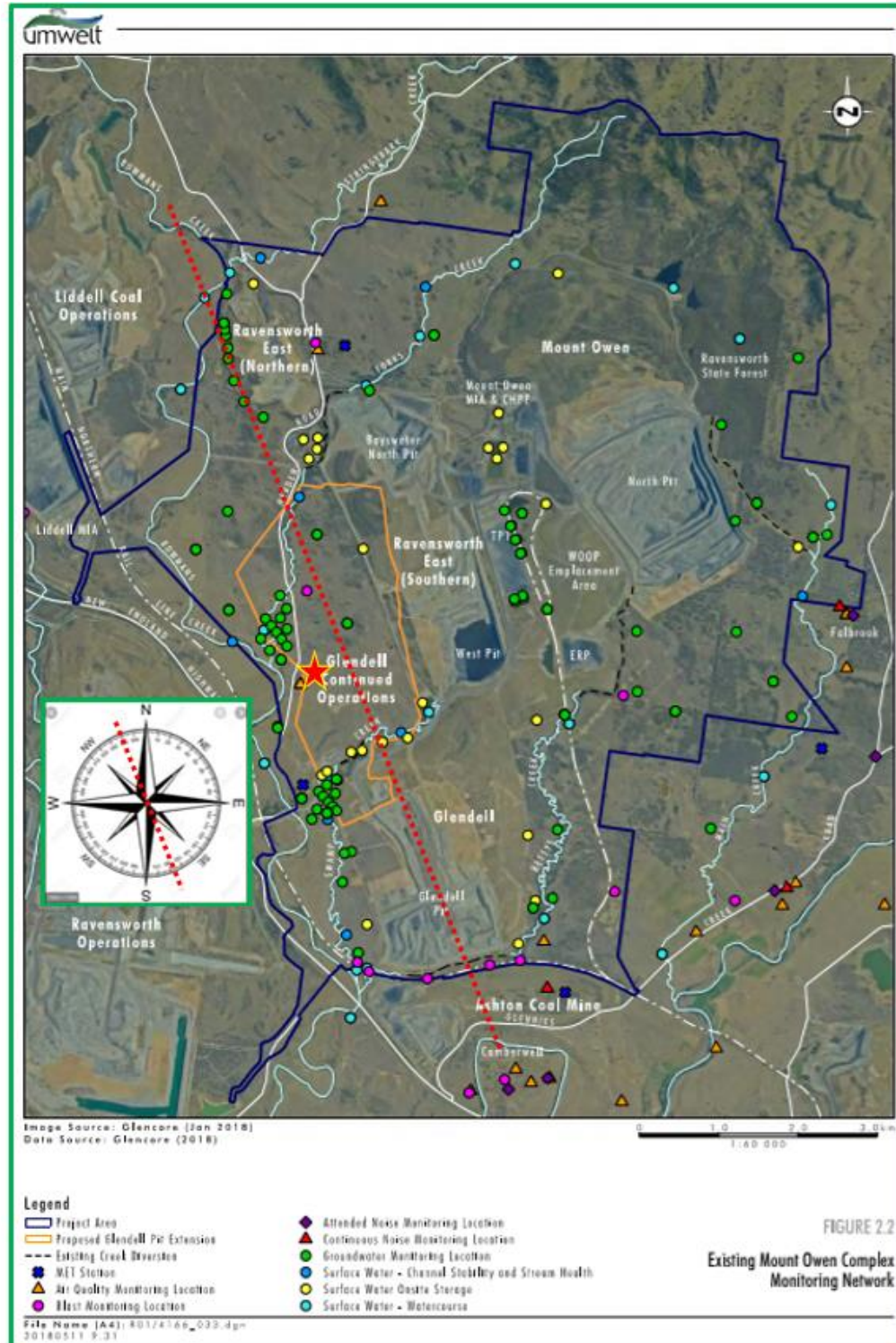


**Figure MD1 with Solar Exposure orientation**

Our SSHEG Upper Mining Dialogue Project Proposal entitled “*Coordinated Coal Mining Air Pollution Mitigation Controls, Options as WHO & NEPM Standards lower in the Hunter*”(Att. 1) aims to see individual Mine Control Centres such as Glendell Mine use “*Modern Dispersion Visualisation Displays and Dispersion Parameter Studies in Real Time to Mitigate the Movement of Mine Pollution from Sources to Dispersion, especially to Minimise the Disease Impact on Camberwell Residents*”. Glendell Air Pollution Drifting Pattern is illustrated below.

**“Camberwell Residents Health protection by Glendell Mine Air Pollution Minimisation and Dispersion”**

- ✓ Expand the role of UHAQMN to provide Mitigation Control protection for Camberwell Resident’s excessive UHAQMN PM10 & PM2.5 Exposure by the inclusion of a sigma theta composite Met Station, with PM10 & PM2.5 continuous Monitoring just North West of Glendell Mine to provide for Ravensworth, Mt Owen – Glendell Mines Progressive Shutdown Mitigation Controls.



This Mining Dialogue Project targets to identify over two Stages, a Suite of Mine Pollution evolving Mitigation Options, preferable targeting Pollution Emission Sources and their *Air Pollution Drifting Patterns and Cumulative Air Pollution Expanse influences* that daily expose Near Neighbour Residents: and thus provide the basis for Pollution Mitigation Strategies that can be progressively incorporated by Hunter Valley Mining Industry Companies such as Glendell Mine 25 year life to achieve the ever reducing and emerging Human Health Air Quality Standards and Community demands, and as detailed by the United Nations, WHO and IARC since 2013 for Mortality, Morbidity, and Loss of Life Expectancy.

Individual Mine Control Centres such as Glendell Mine to provide Mine Dispersion Stability Computer Screens for Air Pollution Mitigation Control that guide Mines by knowing and responding to three levels of Air Pollution Dispersion Alarms, Red, Amber, Yellow.  
(refer **Figure MD2** below)

Hunter Valley Coal Mining Air Pollution Dispersion (Concept)					
Air Pollution Dispersion	HIGH <b>A</b> <b>D</b>			Medium	LOW <b>G</b>
SEASON	SUMMER Nov Dec Jan	Feb Oct	Mar Sept	Apr Aug	WINTER May June July
Time of Day DST +4Hr	3Pm 7pm	Noon 4Pm			Night
Air Temperature	45°C	38°C			Day Minimums
Solar Radiation	<b>A</b> HIGH Mid afternoon	Medium <b>D</b>		LOW Cloudy	<b>G</b> Sunrise – Sunset TOD
Sun Elevation	Summer 80 deg	Solstice 64 deg		Winter 37 deg	North facing
Local Wind Speed	>5m/sec <u>Horiz. Dispersion</u>	<b>D</b> 2-3m/sec		Still/ CALM	<b>G</b> Modelling limited at low Wind F
Turbulent Boundary Layer	<b>A</b> Therm Updraft 1000m Layer			Near Ground 100m Layer	Mixing Height Determinate
Recent Rain Events	DRY			➤ mm/Hr in last 8 Hr	
Elevation Gradient	Deep Mines Valleys & Cliffs	Stockpiles Orientation to N		Flat Plains	Complex Terrain limitations
Surface Drifting	>6m/sec <u>Horiz Dispersion</u>			CALM	
Air Stability Class	Instability <b>A</b>	Neutral <b>D</b>		Stability <b>G</b>	<u>Horiz./Vertical</u> Drift Balanced in Class <b>D</b>

## Glendell Mine Project “Human Health Risk Assessment”

SSHEG concurs with the earlier NSW Health (SEARs 31 May 2018) that a separate Human Health Risk Assessment EIS Document remains missing today from the Glendell EIS suite of SSD9394 documents. *“It is noted in the PEA that public safety and health risks have been identified as “other issues” without specialist reports. It is recommended that the EIS include the requirement of a human health risk assessment that considers the potential adverse effects from human exposure to acute and cumulative project related environmental hazards”* - especially in the light of UHAQMN Data since 2013 clearly illustrating the Glendell Air Pollution PM10 Drifting Pattern exposure of Residents across Camberwell, Singleton North, Singleton and Singleton South.

The attempt to circumvent what was identified in 2008 as missing from Dept of Planning Mine Applications evaluations -The “[Singleton Shire Resident’s Human Health Risk Assessment](#)”, Glendell has apparently dismissed this by partly incorporating some aspects in Appendix 11 Social Impact Assessment as “undertaken with consideration (7.14)”.

Further, what is required after analysis of the missing Glendell Human Health Risk Assessment, is an additional Independent Peer Review Human Health Risk Assessment; as clearly warranted here now to detail the Disease ramification to Hunter Valley Residents in the light of the recent circumstances of Bushfire Smoke over many weeks. These coexisted with UHAQMN exceedances, providing the likelihood to disguise the otherwise Mine Air Pollution Exceedances.

It is also clear that this “Project Super Pit” Glendell Project will combine the Mine Operations of Liddell Coal, Mount Owen, Ravensworth East and West with the central Glendell Mine through to the final landform, further compounding the Camberwell Resident’s Mine Air Pollution Disease Risk drifting from the NNE through NNW to NW quadrants towards Camberwell as detailed in [Attachment 1](#).

This raises the Question of the changes to Conditions of Consent and Mine Management Plans across all these interconnected and inter-operational Mine Sites. Among these is the Ancestral Heritage Significance Health Impact – Sense of Place; as illustrated.

## Ancestral Heritage Significance of Patricks Plains NTH# 8 ©

© Commercial in Confidence

*“BULGA TOURISM HUB”*

Without prejudice

### Synopsis

“Bulga - Sense of Place” is captured by Bulga Milbrodale Progress Association Inc in 2013 in their publication “*A History of Bulga, Gateway to the Hunter Valley since 1820*” which in its introduction established the Bulga Community Connectivity to these Lands.

*“This publication has been made possible through the foresight of our early pioneers in recording history of the Bulga district together with stories handed down from generation to generation and the survival of letters and old photographs, and is complemented with information sourced from official archival records”.*

Earlier in 2004 Bulga Historian Stewart Mitchell completed a History of “*The Clarks of Bulga – 150 years on Cockfighter’s Creek*” explaining as follows:-

*“My great-great-great grandfather was the first white settler at Bulga, taking up a land grant in 1825. After almost 200 years of ancestral residency in Bulga I feel obliged to attempt to protect this area from unnecessary destruction.*

*My great-great-grandfather witnessed the last great Bora at Bulga in 1852 and My Father accompanied Etheridge & McCarthy of Australian Museum in 1918 when they Photographer and Recorded the Bora Carved Trees and collected Aboriginal Artefacts from the surrounding area.*



**SSHEG and the Community content that all Hunter Valley individual Mines be EPA Licence approved at “Total 24 Hr PM10 concentrations due to the development plus background concentrations due to all other Sources”; and not as is the current practice, that each mine can Pollute 24 Hr to 50 ug/m3 due only to its development. This is separate to the Minimisation provisions of the Air Pollution Act that are not being enforced.**

## **SSHEG Upper Hunter Valley Air Quality and Community Disease**

SSHEG investigations over 10 years of Community associated Diseases from Mining Air Pollution reflects the WHO position announced in 2013, establishing the suite of Diseases related to PM 2.5(Fine) and PM10- 2.5 (Coarse Particulate Matter in the Air).

Since then three events have emerged in Australia that has crystallised Government and Researchers opinion regarding the short term exposure disease risk: Hazelwood May 2014 Brown Coal Fire Air Pollution & Rural Health Impacts, and the latest 2019-2020 Spring-Summer Fire Smoke Disease Impact on VIC ACT & NSW Residents.

### **Hazelwood Health Study & CAR guidelines ([Attachments 4 & 5](#))**

*“What do we know about the impacts of smoke pollution that lasts more than just a few days? Research on the health effects of medium-term exposure to fire smoke (weeks and months rather than days) is limited. However, CAR researchers involved in the Hazelwood Health Study ([hazelwoodhealthstudy.org.au](http://hazelwoodhealthstudy.org.au)), are investigating the health outcomes of populations exposed to 6 weeks of smoke from the 2014 Hazelwood coal mines in Victoria. They found more than a year after the fire occurred adults had increased rates of respiratory symptoms. Children who were exposed to the mine fire smoke either in the womb or in their first two years of life had more respiratory tract infections as reported by their parents. Additionally, they found a link between higher mine fire smoke exposure and small increases in lung stiffness in children who were aged up to two at the time of the fire. These impacts were relatively small but warrant further investigation.....*

*The only measure to improve indoor air quality with scientific backing is the use of indoor air cleaners. If you choose to use these, ensure that they contain a high efficiency particle air (HEPA) filter.*

*Avoid outdoor physical activity when conditions are poor. Indoor physical activity is fine as long as indoor air quality is good. It is also important to stay informed about the air quality around you. Use real-time or hourly (rather than 24 hour rolling average) local air quality data if it is available in your area. Knowing the current air quality and if it is rising or falling helps with the best timing for when to seal, or to open and ventilate your home and enables the planning of activities and travel to avoid places severe affected by smoke”.*

## Dr James Bowman Colonial & Convict Cultural Heritage

SSHEG in responding ([Att. 6](#)) to the earlier Mount Owen Continuation Operations Project 5850 on 17 Feb 2018 confirms that the then Historic Heritage Assessment Appendix 14 Section 4.4.1 of the Hunter Region Colonial Homesteads was more accurately provided in line with accepted Colonial Heritage Practices, as illustrated. This challenges the Glendell EIS credence, raising the question of bias, accuracy, suitable omissions, or apportioning claims which distorts outcomes.

Documents/Appendix-14-Historical-Heritage-Assessment.pdf

### 4.4.1 Ravensworth Homestead

Ravensworth Homestead has a Statutory Heritage listing of local significance on the Singleton Local Environmental Plan 2013. Although not listed on the SHR, Ravensworth Homestead was assessed as being State significant in the *Ravensworth Homestead and Farm Complex Structural and Material Condition Report* (EJE Architecture 1997).

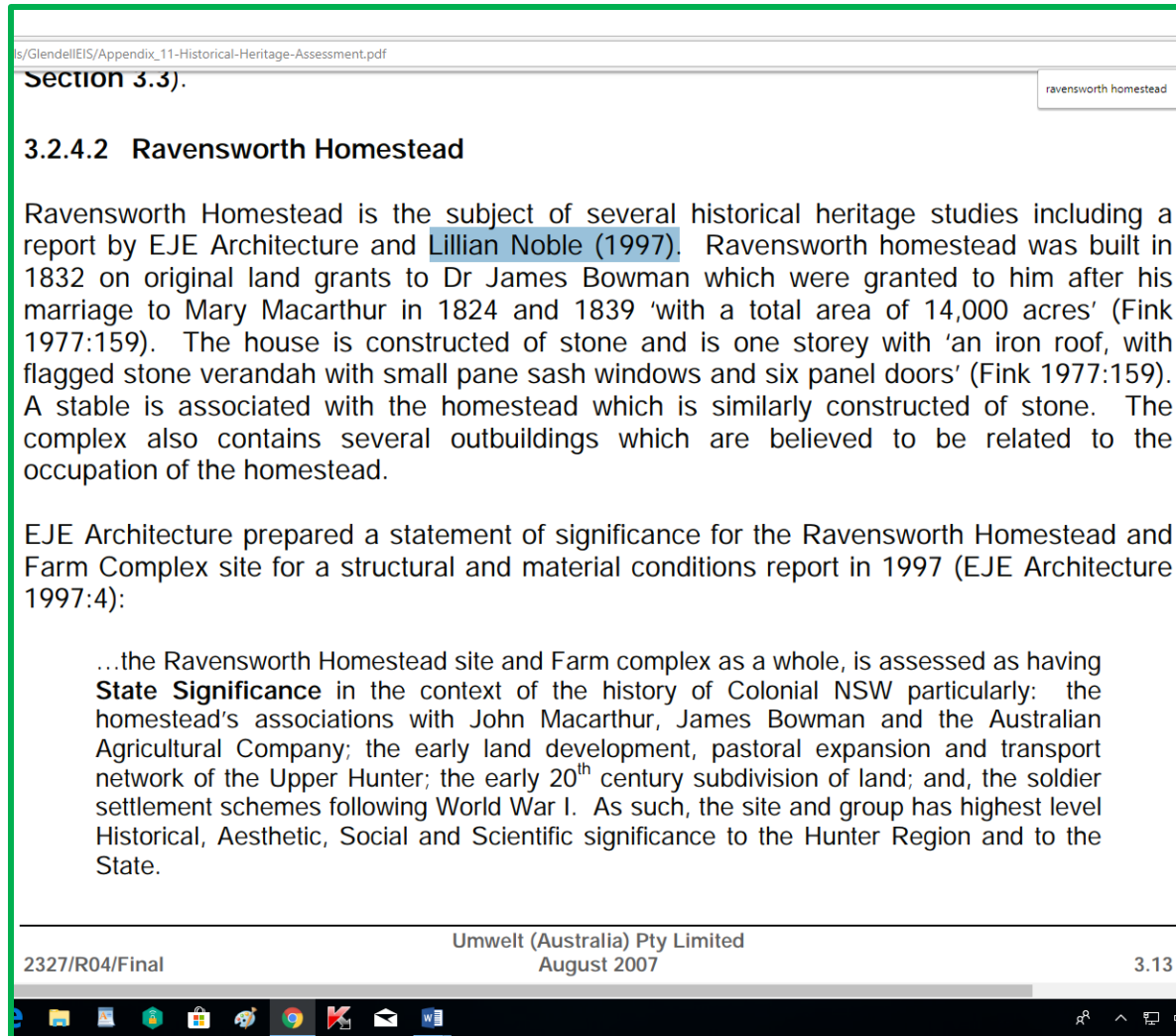
In a 1982 study of the Nineteenth Century Buildings of the Hunter Region (Sheedy 1982), nine homestead complexes are identified as being outstanding. These outstanding homesteads include Ravensworth Homestead and Wambo Homestead at Warkworth. All nine of the homesteads identified as outstanding by Sheedy remain today (GML 2010:52). In 2010 Godden Makay Logan undertook a survey of listed colonial homesteads in the Hunter Region. Ravensworth was identified as one of most significant of the 23 remaining comparable homestead complexes which retain both the original residence and outbuildings (GML 2010).

Ravensworth Homestead is located approximately 700 metres to the west of the Project Area boundary, over 1.6 kilometres south-west of the BNP, over 2.4 kilometres west of the proposed RERR Mining Area and approximately 4 kilometres to the west of the North Pit Continuation and as such is unlikely to be directly or indirectly impacted as part of the Project (refer to **Figure 2.1**). Ravensworth Homestead is considered in relation to potential indirect impacts resulting from vibration from blasting in **Section 6.3**.

### 4.4.2 Former Chain of Ponds Inn

As discussed in **Section 3.5.4.1**, the Chain of Ponds Inn was built in the 1840s by Henry Nowland. It has also been known as The Halfway House, standing halfway between Muswellbrook and Singleton on what was then the New England Highway. The hotel served as an inn for the coach and horse borne traffic in the mid nineteenth century between

The then clear Mining Company declarations of the State Significance of both Wambo and Ravensworth Homesteads with their long-recognised Heritage Significance by Authorities since 1997 and 2007 is self-evident in these Illustrations.



This also confirms our documented view that Patricks Plains Shire Cultural Heritage State Significance has not been the focus of successive Singleton Councils to date; this inaction on Patricks Plains Heritage Conservation is in contrast to the same way neighbouring Councils have embraced these aspects of Landscape Conservation and for Tourism Opportunities. (Refer [Attachment 7](#) for details)

Of the Nine State Significant Homesteads Complexes identified in 1982 Sheedy, Wambo Homestead Estate has a Permanent Conservation Heritage Order of 1982, but this did not prevent Glencore to attempt to move this obstacle to Mining. Glencore however see an opportunity to swoop at Ravensworth Homestead Estate where on the surface it would appear that the only obstacle to mining is the Local LEP Heritage Protection controlled by the current Pro Mining Singleton Council.

**2010 Heritage Question Revisited by Glencore at Ravensworth**  
***“Could Heritage Buildings be removed from the NSW Local Environment Plans? Could some of the remaining buildings on the site be relocated for their protection?”***

Perhaps the Question should be – *“Do NSW Local Environment Plans on Heritage Homestead Estates in Hunter Valley all need to be added to NSW State Heritage Register with the Enforcement Power of Permanent Protection Orders which includes Progressive restoration and Public access periods?”*

National Heritage Scrutiny and oversight has already established in modern times since 1972 the Heritage Significance of the Hunter Valley Region; including having addressed the Mining Heritage Questions posed at Wambo Mining in 2010.

Reviewing the Heritage Studies since 1972 provide the basis for Heritage Decisions then; today, and in the future.

Clearly, the Wambo Homestead Estate and Mining Coexisting is a Model that perhaps could have been applied in 2010 directly in this Glencore Glendell Ravensworth Homestead Estate Project Proposal! Perhaps it was then!!!

Another way of posing the Ravensworth Mining Question is:

- *“Should Glendon, Neotsfield, Baroona and Minimbah Homestead Estates, or any others that are on smaller land areas to their original Pioneer Settler Land Grants, be all protected by Permanent Heritage Protection Orders?”*

## NEOTSFIELD HOMESTEAD

## St PATRICKS PLAINS

### St Patrick's Plains 1820's Henry Dangar Dynasty

#### Located on the Hunter River at Whittingham

The impact of the Henry Dangar Dynasty as free settlers over at least three generations since 1821 has profoundly influenced the many aspects of life in the early days of the Hunter Valley and in many ways not only contributed to the establishment of Pastoral pursuits and rural diversity as we know it today by also developing financially viable export businesses to complement the coal shipped from Newcastle Port.

In the future Australians of all persuasions will come to learn how the early Hunter Valley Pioneering families have contributed to our way of life that is enjoyed today, affecting our National Psychic, with qualities of Tolerance, Endurance and Initiative to work our a living in this often harsh but fertile land.

The unique position that **Whittingham** holds as being the **Birthplace of the Hunter Valley** is a consequence of the **explorer John Howe discovery at St Patrick's Plains** around 17<sup>th</sup> March 1820 and establishing a place in our Colonial History which is increasingly gaining its rightful place in our European Heritage.

Significantly, the Dangar Legacy is synonymises with St Patrick's Plains and the opening up of the Hunter Valley in Muswellbrook, Scone, and the Liverpool Plains; and beyond some while employed by the Australian Agricultural Company from 1830 to 1832.

Three Heritage Homesteads are a testament to this influence at St Patrick's Plains, namely; **Neotsfield** on the Hunter River, **Baroona** on the New England Highway, and **Minimbah** off Range Road, all located within a short distance of the Howe Monument at the Army Crossroads on the old Maitland road, which is now the New England Highway.



**Neotsfield 1821-1826**  
**Henry Dangar**



**Baroona 1830 & 1870**  
**Albert Augustus Dangar**



**Minimbah 1877**  
**William Dangar's Plans**

Over the last 10 years we have progressively investigated the Heritage Legacy surrounding the three old Homesteads at Whittingham in the Hunter Valley of New south Wales. Albert and William are the sons of Henty and Grace Dangar.

Our curiosity began on a visit to the Hunter Valley in 1996 by plane as we flew over Baroona and landed on the grass airstrip at the Army Cross roads at Whittingham on the New England Highway. Stories emerged of a Gate House, Melbourne Cup horses, Arab and Suffolk horse stud breeding, coral ballast, convict bricks, army officers living at Neotsfield and the cottages on the Hunter River. The names Neotsfield and Dangar soon merged.

More curious was the extent of the Dangar Family Mausoleum at Singleton' All Saints Anglican Church with the church modelled on St Neots Church Cornwall. Henry Dangar and successive generations of Dan gars are buried here in the Mausoleum enclosed by an iron palisade fence with a series of columns supporting an ornate and elaborate architrave and pediment. It is located alongside the St Neots chapel of the Church with a Led light window of a Dangar family Crest of Arms on the western wall.

## Ravensthorpe Homestead Estate Heritage 8 Acre Garden

Significance of Dr James Bowman’s son James Bowman, 8 Acre Garden and the “creek Colonial Heritage Significance” has not been adequately detailed, map located, or Archival Research documented in the Glendell EIS.

### 5. Discussion by Mr Tim Duddy, Chair of Historic Houses Association of Australia

- The HHAA has 3000 members and represent 35 houses around Australia
- TD indicated that a real opportunity exists to change the heritage paradigm, which is currently fixated on leaving things untouched and preserving insitu.
- TD indicated that through the HHAA he has had contact with both the Macarthur and Bowman families and is confident that letters of support could be obtained from the families if the right relocation option is selected and developed.
- TD indicated that through his discussions with the Bowman family, the grave on-site is thought to be the daughter (potentially a child) (hence the size of the sarcophagus) of James White who drowned in the creek.
- TD indicated that James Bowman is thought to be buried down by the creek in exotic garden that he planted.
- TD indicated that homestead garden may have some historical significance and be home to medicinal plants and succulents planted by James Bowman. TD also indicated that James Bowman wrote the Australian version of Pharmacologica.

*“Their garden consisted of 8 acres fenced with a paling fence and a little stream running through it. It was partly laid out in a tasteful and ornamental manner. Parry thought that if 5 or 6 men could always be employed it could soon be a very handsome garden however he thought it (the garden) too large for a private estate like Ravensthorpe. [1]”*

EIS Extract Appendix 23 4.1.1 Page 71

*The proposal to relocate the RHC to Ravensthorpe Farm includes the removal of the homestead garden and other nearby plantings, some of which are of moderate to exceptional significance and this would have high heritage impact as they are part of the history of the property and the setting of the important buildings. This is mitigated by the proposal to salvage the most interesting of the planting, establish a temporary nursery for their care and to replant this vegetation as part of a sympathetic setting for the relocated RHC.*

*The loss of high archaeological potential of the RHC site and adjacent north-west paddock and “8-acre garden” sites can be substantially mitigated by undertaking comprehensive salvage archaeological investigation, recording and assessment, which is also proposed in this application. It can be argued that such archaeology is in fact an outstanding opportunity to investigate a rural-based Colonial convict site that, has not been substantially disturbed (by later development) since its construction in the early 19th century. ( Page 72 Extract)*

## **Cultural Heritage Considerations post 1972 – A Review**

In 1972 The National Trust of Australia (NSW) Reported on *“Conservation of Lands and Buildings of Natural, Historical, Scenic or Recreational Value in the Hunter Region”*.

Officially the Australian Council of National Trusts, is the Australian national peak body for community-based, non-government non-profit organisations committed to promoting and conserving Australia's indigenous, natural and historic heritage.

By 1981 the National Trust Interim List in the Hunter Region was published, and the NSW Heritage enacted the Wambo Permanent Conservation Order on 3<sup>rd</sup> September 1982.

In 1982 The NSW Department of Environment and Planning, Heritage Council of NSW released the Sheedy Hunter Region Heritage Study, entitled “Nineteenth Century Buildings”.

For the period up to the 1850s, Sheedy suggests the following types of development:

1. The attached wing or wings added at various stages of a property's growth (the most common). Examples include Rosemount at Hinton (1830 with 1870s addition), Negoa near Muswellbrook (1830 with 1840s additions), Stradbroke at Woodville built in three stages (1830-40 and 1900) and Martindale, Denman (c1840, 1860 and 1890), Cawarra, Gresford (late 1840s?) and Segenhoe, Scone (1830s with later domestic outbuildings attached).
2. A separate new house or wing built next to or close by the original house. Examples include Bolwarra (Richard Jones' 1830s house converted into the kitchen wing and second house built adjacent) and Merton (1826 stone cottage near the c1880 brick house).

3. The original house is completely encased by a later and larger addition. Examples include Barooka at Whittingham (c1828 two storey house extensively added to in 1869) and Bolwarra (c1850 second house built by Dixon with first floor taken down and additions made c1900 by Lee) and Torryburn, Allyn River (early house encased in later Edwardian house).
1. Destruction of the original house and construction of a completely new house: Windermere near Lochinvar (1880s house built on 1830s foundations), Camyr Allyn (1829 house now ruins and estate subdivided with new homesteads).
2. Complete destruction of the original house and only outbuildings survive. Examples include the substantial sandstone barn at Bolwarra (1836).

According to Sheedy, at the time of his report, the Hunter Region possessed probably the richest and most diverse collection of 19th century buildings to be found in any comparable area of Australia and that with relatively few exceptions, the vast number of buildings erected after 1830 have survived.

The majority of Hunter Region Homesteads started from this base plan and over the years have undergone various alterations and additions depending on the history of the estate, the wealth and social pretensions of the property owner, as well as the changing needs of the residents. David Sheedy (1982) identified a range of homestead types found in the region that illustrate the typical changes.

Very few Homesteads survive from the initial establishment period unchanged from this basic form. Examples include Wambo, Warkworth (1844 - 47), Tocal, Maitland (1841 with a second storey), Dunmore, Maitland (1833), Gostwyck, Paterson (1836), Kinross at Raymond Terrace (c1834), Thornthwaite, Scone (1846); Clifton, Lochinvar (1850); Cliffdale, Wingen (1840s); Lewinsbrook, Gresford (c1839); Invermein, Scone (1830s); Segenhoe, Scone (late 1820s), Ravensworth, Singleton (1830-35) and Terragong, Merriwa (1839). ( Page 55)

## **Wambo Homestead Estate Heritage Model for Mining in 2010**

It is known that in the Hunter Valley, The Wambo Homestead Complex was made subject to a Permanent Conservation Order No 200 in 1982 while under the ownership of Joan Margaret Plesick. Gazetted 3rd Sept 1982, 116, Page 4087.

In 1987 the site was bought by Wambo Mining Corporation. In July of 1996 the site was heritage listed on the Singleton Local Environment Plan (LEP). The Wambo Homestead Complex PCO was converted to an entry on the NEW State Heritage Registrar in April 1999.

*“In 2010, discussions arose concerning the cultural significance of a particular nineteenth century rural homestead complex located within the Hunter Region. The place in question, Wambo Homestead, is listed on the State Heritage Register of NSW and is currently in the ownership of a mining company. The owners of the property raised two key questions in a formal application to the Heritage Council. Could Wambo be removed from the NSW State Heritage Register? Could some of the remaining buildings on the site be relocated for their protection?”*

At the time in 2010, the application made to the NSW Heritage Branch triggered intense debate throughout both the NSW heritage industry and the Hunter Region community. Many issues were raised and discussed in the public forum. As a result, the Heritage Council initiated a sub-committee to consider the State heritage listed Wambo Homestead and its future management.

In 2013 the study “HUNTER ESTATES: A Comparative Heritage Study of pre 1850s Homestead Complexes in the Hunter Region”, was commissioned by NSW Office of Environment & Heritage and the Heritage Council of NSW based on a **concern that significant Colonial Landscapes and Homestead Complexes** throughout the Hunter Region could be lost by individual decisions arising from development pressures.

This 2013 Study seeks to define both the Hunter Estate and its homestead complex, to map their locations and to locate their importance in the history of the Hunter Region and NSW.

Of the Hunter Region’s 144 new settlers who held lands of 1000 acres or more by 1825, approximately one third appear in the Australian Directory of Biography.

A small selection of names of note who settled in the Hunter Region include:

x Richard Jones (Bolwarra, 1822 and Collaroy, 1829) x Charles and William Boydell (Camyr Allyn, 1826 and Caergwrle, 1836)x George Bowman (Archerfield, 1825, Arrowfield, 1824 and Strowan, 1820s) x John and James Busby (Kirkton, 1835) x Charles Windeyer (Kinross, 1839) x George Forbes and Sir Francis Forbes (Edinglassie, 1825; Rous Lench, 1839 and Skellator, 1826) x Lt. Edward Close (Closebourne, Morpeth House and Illaluang, 1820s) x James Brindley Bettington Snr. (Brindley Park, c.1825) x Henry

Dangar (Neotsfield, 1821) x William Dangar (Turanville, 1825) x Edward Gostwyck Cory (Mowbray, 1825 and Gostwyck, 1823) x Thomas Potter Macqueen (Segenhoe, 1827) x William Cox (Negoa, 1825) x Joseph Docker (Thornthwaite, 1834)



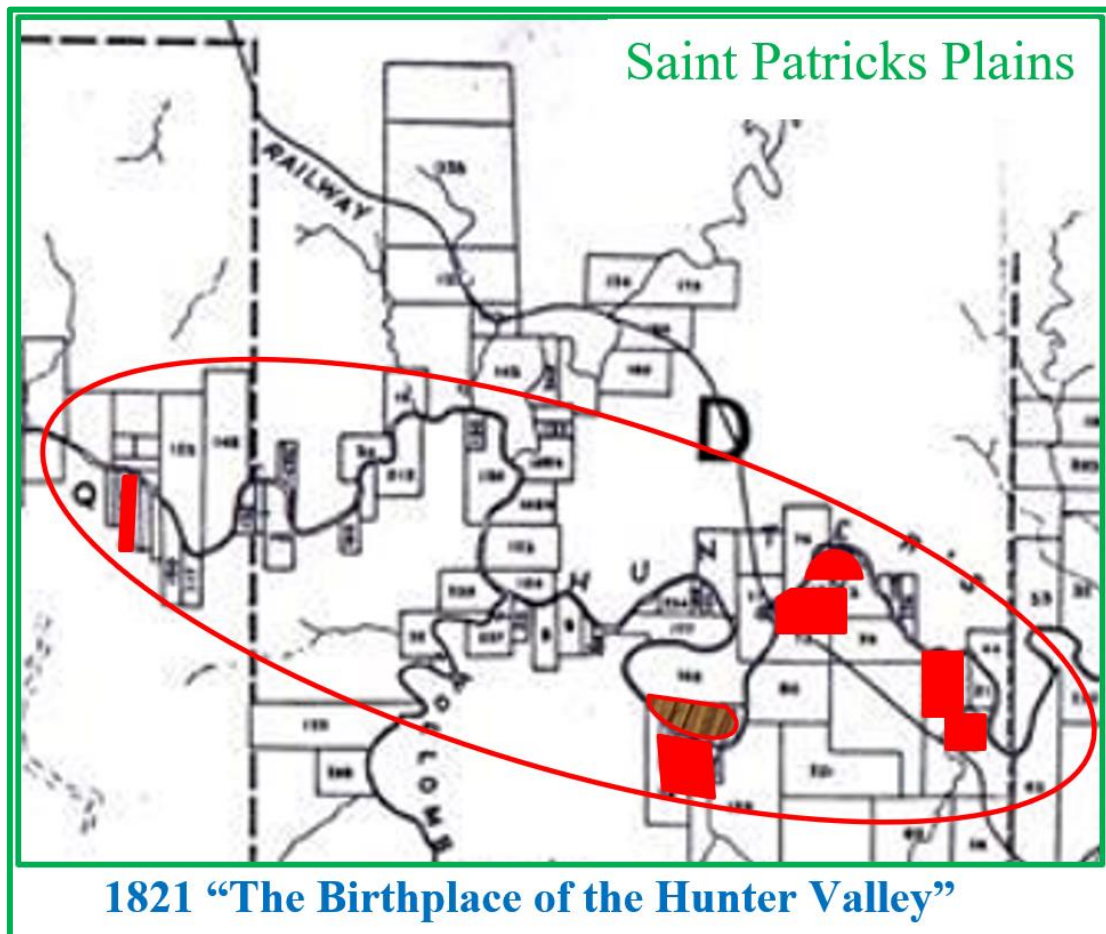
Upon review, Our SSHEG position remains for this Glendell EIS SSD 9493 Submission the same as it was detailed to Glencore in [Attachment 6](#) dated 14 March 2018 entitled “Ravensworth Homestead Estate – NSW”, with its three Attachments.

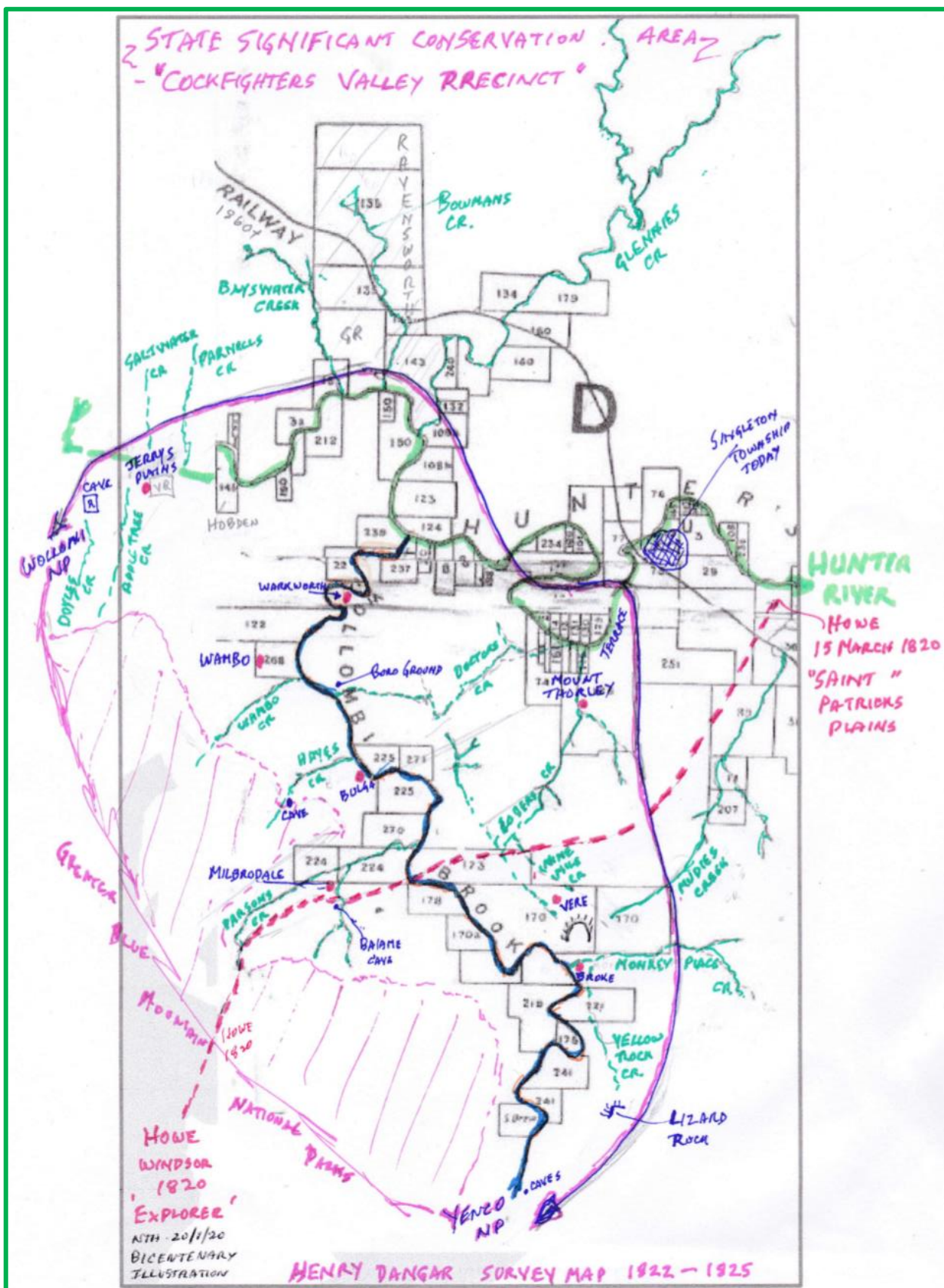
Suffice to say with our Focus on Residents Health – here as Sense of Place; that is: - “*Ravensworth Homestead Estate is uniquely significant in its four Cultural Heritage Entities; namely, Aboriginal, Colonial, Convict and Emigrants Heritage*”.

## **Stakeholder Consultation of Environmental and Community Issues. Has Glencore purposely avoided SSHEG and Cultural Heritage Advisory Group (CHAG) after our approach in Feb 2018?**

SSHEG members along with Bulga Milbrodale Progress Association Historians have been active in promoting Community Cultural Heritage issues, including in Local Historical Society Groups as early as the 1950's. (Refer [Attachment 8](#) SSHEG “*Bulga Culture Centre*” Concept Outline, Location Heritage Listed Bulga Public School

By year 2000, Archival Research of, in and around the Hunter Valley and Saint Patricks Plains as an outsider; the events surrounding the Howe Monument and the three Old Homesteads at Whittingham; their Historic Heritage Significance and that of the Wollombi Brook Environs was being clearly and conveniently disregarded by Mining, State and Local Governments. ( Ravensworth seen in this context)





## NEOTSFIELD HOMESTEAD

## St PATRICKS PLAINS

### 1821 to 1825

Interestingly, the story of the significance of the Hunter River to service these properties up to at least Scone is referenced as follows; - “ *Henry Dangar resigned from the service of the Australian Agricultural Company, and in 1832 he packed all his belongings into boats and, accompanied by his family and by assigned convict servants, he proceeded up the Hunter River to Neotsfield.* ” Pam Knodler my neighbour confirmed that her mother (grandfather Knodler who bought Neotsfield in 1924 at the Dangar Auction) told of the a loading jetty on the river bend on the 700 acres of Neotsfield, and that this is the extent of tidal influences upstream of the Hunter river at that time. This answers the question as to why the Coral Ballast Fountain at Neotsfield exists today.

A Royal Australian Historical Society publication on Singleton also suggested that as recorded in 1801 that Colonel Paterson in one of his excursions up the river from Port Hunter reached the present site of Singleton, accompanied by Lieutenant Grant, Dr Harris and Ensign Barrallier. It is easy today to imagine deeper river along the length of this Natural River.

Henry Dangar described the river as “ *an inexhaustible store of the most delicious fish, can without difficulty at all times and seasons, be procured* ”

Henry Dangar's Neotsfield Homestead was the first of these Homesteads built in the period 1821 to 1828 with boats passing up the Hunter River delivering materials at that time. By the mid 1830's Neotsfield Village because of its remoteness had to be self sufficient and a safe haven for travellers in a hostile natural environment, bearing in mind the nearest colonial civilisation was at best a days horse ride away to Kings town.

On the 6<sup>th</sup> September 1821 Henry Dangar (1796-1861) obtained a grant of 700 acres at St. Patrick's Plains and named the property Neotsfield after the Dangar Family heritage of St. Neots in Cornwall England.

This was not the first group of grants made, since Benjamin Singleton and others were promised a grant on 31<sup>st</sup> March 1821. Since Singleton was a member of a small party on an earlier overland exploration in October 1817 by a government mineralogist, William Parr who went north from the Hawkesbury to an area around Doyle's creek. Benjamin Singleton also returned to Doyle's creek again in April 1818, as well as being with Howe in the 1820 exploration to St Patrick's Plains. However it was not until 1822 that Singleton and Philip Thorley and their wives and children settled on land at St Patrick's Plains, and eventually to take up their promised land grants surveyed by Henry Dangar.

The Neotsfield Grant of 700 acres was made on 7<sup>th</sup> September 1821 to Henry Dangar for a sum of fourteen shillings and listed on the register of Grants of land No 71 page 487. Subsequently an additional Land purchase of 300 acres on the 16<sup>th</sup> of May 1826 for three hundred pounds and listed in the register of land purchase No 14 and page 195. However handwritten entry into registers took a number of years for the government processes to be put in place before official land title documents were issued on 5<sup>th</sup> December 1851 and 21<sup>st</sup> of November 1853 respectively.

Access from Port Hunter ( ne Coal Harbour, and King's Town became Newcastle) by the late 1820's was by rough overland tracks with access to Singleton from the coast area was by the high country to the Minnimbah ridges and then via Wittingham and Town No 8 to the Hunter River crossing at Singleton's settlement.

With the previous exposure to Cultural Heritage issues in the Illawarra, and in Researching Henry Dangar’s Archival Records; the presence of Baiame Cave and Bora Ground; Howe Explorers path in March 1820 also beside this “Forgotten Cave”, and the subsequent part played in the survival of the early Colony at Saint Patricks Plains confirms in detailing its Aboriginal, Colonial Convict and Immigrant Cultural Heritage Significance: as Illustrated.

Coming across in Archives in Land Surveys was another outsider, RH Mathews, a Singleton Surveyor at the time, who only now is recognised for his dedication to take the time to Document Aboriginal Cultural Heritage for future generations who now walk in two worlds; and from his efforts, now able to reconnect with their human identity; alas so much lost! But a clear message here!

This delving into the official Archives soon establishes the role that Land Grants Book entries and Individual handwritten Land Titles in this early Colonial Era provides the most accurate chronological framework for Cultural Heritage Research and Reporting. Colonial Archival Diaries and Explorers Journals, and Official Records and Correspondence provides the solid Heritage substance. Many other hearsay and newspaper reports need to be substantiated with Archival Copy images rather than references or partial quotes. This is a key issue to be considered in relation to the veracity of Heritage Reports used and referenced in the Ravensworth Estate Cultural Heritage EIS Documents.

One glaring example Quote is in Appendix 23h page 25 that dates John Blaxland in 1818 ahead of the Howe 1820 Explorers. Similarly, page 8 EIS dated John Howe reached the Hunter River in November 1818 not November 1819 at Jerrys Plains region as he recorded. Modern unresearched and Non-Archivally substantiated documents often used by Mining are not only misleading but can be mischievous when used unwittingly by Locals and especially Authorities with Approval Decision Making Authority.

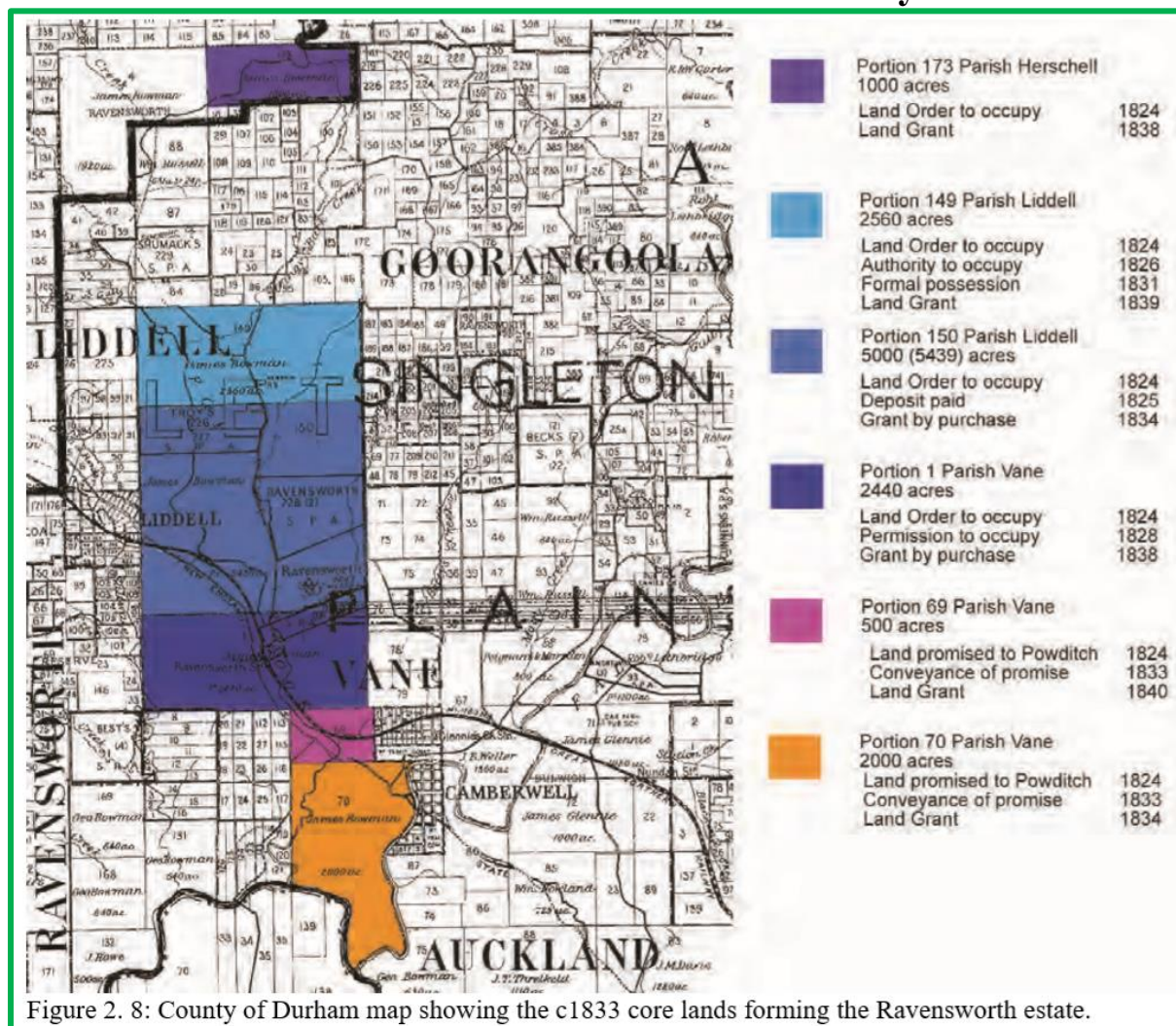
While an obvious error it would be prudent for Department of Planning to insist upon an Independent Peer Heritage Review of these

EIS Documents especially for documents in the period of Dr James Bowman's ownership from his earliest approaches in England prior to arrival, the 1820's Grant through to the Estate subdivision into farmlets in the 1900's.

SSHEG research indicates that the full period of influence of Dr James Bowman in the Colony and his ongoing influences after his death are being “downplayed” in this otherwise meaningful Glendell EIS contribution to the Cultural Heritage of Hunter Valley.

While it is in Glencore's interest to focus only on “The Place” as representative of the Heritage Significance of Ravensworth Homestead, Robert Dixons 1837 Map tells a different story, as Conveyancing dates are conditional and not necessarily the land use practice!

### Ravensworth Homestead Estate Sustainability ???





The concurrency of Aboriginal, Pioneer Colonials, Convicts the Immigrant Cultural Heritage in the period 1820 to 1860 however provides the State Significance Conservation Area Status that previous Historians and Heritage Councils recognise of Dr James Bowman and his Ravensworth Homestead Estate. Not forgetting the subsequent “Farmer Families Cultural Heritage Significance” who further looked after these lands through to present Day.

The Glendell EIS has instead focused upon the Land Grant Parcels and without lineage Archival Research “underestimates” the Land Grants Pioneer and Convict Significance, and the connectivity of these lands to Creeks, Brooks, the Hunter River and Glennies Creek; connectivity to Government and Village Reserves, Archerfield and Dulwich, tracks and roads beyond. Dependence on Water and Stock Feed and access was just as important in the 1820’s Flood & Drought cycles as it is today 200 years later.

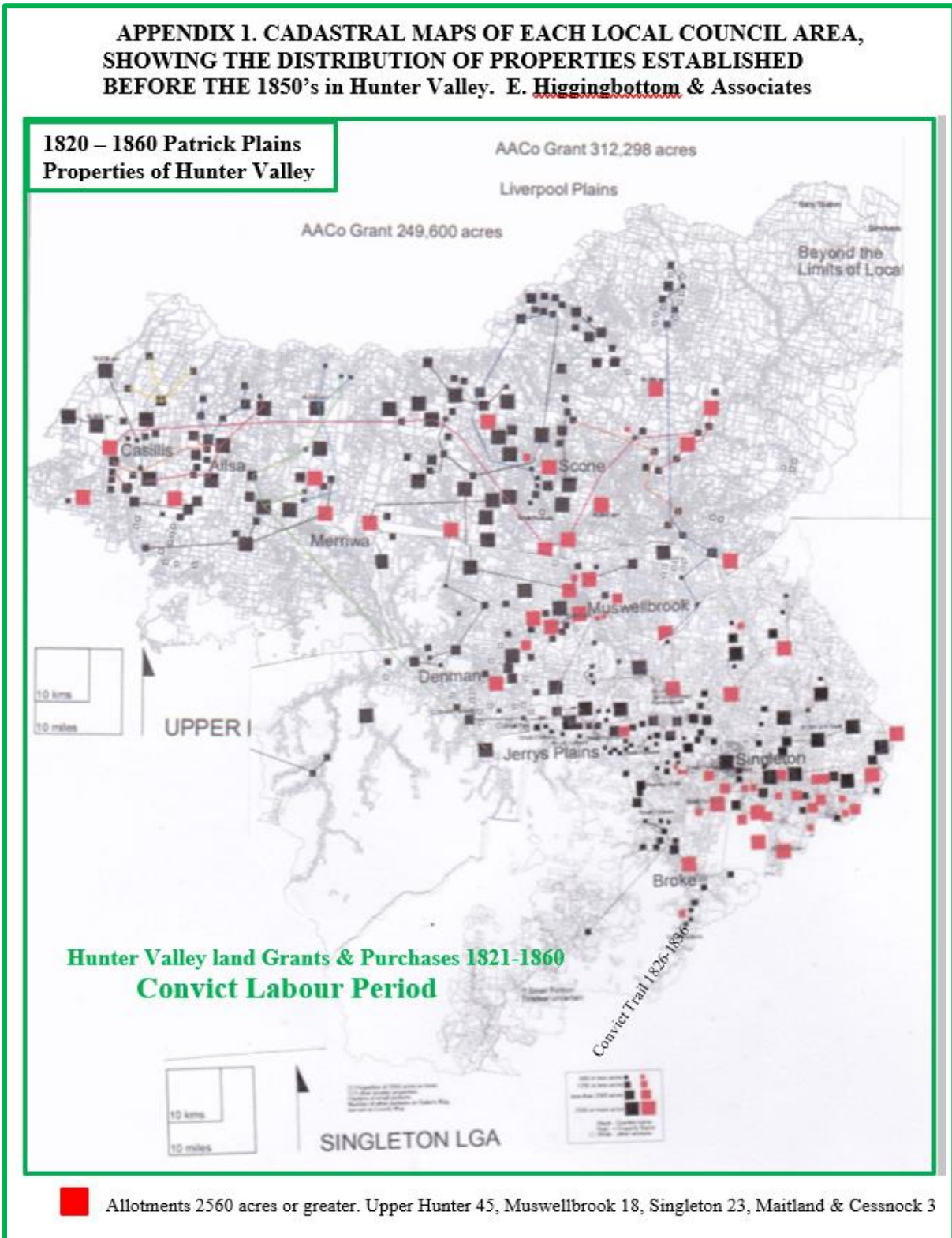
SSGEG views Dr James Bowen Heritage in the context of the Colonial activities that emerged at Saint Patricks Plains after 1820; establishing as one of the Pioneer Farmers at the time with the responsibility and reliance upon Convict persons under his care.

The opening up of Patricks Plains Land for purchase with enslaved Convict labour entitlements by Free Settlers followed as the Hunter Valley Foodbowl reputation for the colony emerged.

“The 1828 census showed 191 landholders lived in the Hunter Valley. Of those 91 landholders about half the number held large farms of more than 1000 acres, covering about 91% of the total area of the 191 holdings. All but eight were owned by immigrant settlers, of whom two-thirds had arrived in the colony since 1821. Of the eight, six were held by men born in NSW and only two by emancipists (exconvicts)<sup>24</sup>”

Ravensworth Homestead Estate Complex State Significance is seen in the context of the Cultural Heritage Significance throughout the period 1820 through to 1860, when the influence of the 1850’s Gold Rush period impacted the Agricultural transition to obtain labour for these Convict developed Estates; as illustrated.

## Cultural Heritage Significance Convict Period 1820 – 1860



## **Ravensworth Estate in the context of Patricks Plains Cultural Heritage Significance Convict Period 1820 – 1860, Colonial Pioneer Period 1820 – 1920.**

**AND**

## **Initiative by Rio Tinto establishing in 2012 Cultural Heritage Advisory Group in Singleton Shire Stakeholder Consultation of Environmental and Community Issues.**

The Singleton Shire Community Health Concerns in 2008 began to extend to understand the “Sense of Place” Daily Mine Health disturbances such as Air, Smell, Noise, Vibration, View, Home, Escape, too often combine in the Social Atmosphere of Deep seated Ancestral Cultural Heritage lineage loss witnessing of Aboriginal, Colonial, Convict & Immigrant “Family Legacy Connection”.

Ancestral Cultural Heritage under threat from Open Cut Mining in the Hunter Valley with Villages such as Ravensworth, Warkworth and Camberwell impacted, many with Ancestral Cultural Heritage Lineage to their disposed Homes and Estates.

The approach in use is; for Mining to designate over 25 years “Acquisition Rights” on Residents Homes, this mostly leads to a Mine Purchase, Progressive decay by mine neglect, unprotected for demolition by Councils, while often Community recognised with Cultural Heritage Significance.

The introduction of Open Cut Mining in the Singleton Shire in the 1980’s and the economic focus this brought to the modernisation of Urban and transient Work forces; resulted as two distinct Social Eras that exist side by side today, one Rural and one Urban.

The Two Distinct Social Eras in Singleton Shire are: -

- **Patricks Plains Era 1820 -1975**
- **Singleton Township Urban Era 1866 to Present**

The characteristics of the Two Distinct Social Eras in Singleton Shire are: -

- **Patricks Plains Era 1820 -1975** with Descendent Lineage to Aboriginal, Colonial, Convict and Immigrant Cultural Heritage Land and Locality connectivity,
- **Singleton Township Urban Era 1866 to Present** and more related to an early affluent and later miner period as Singleton Council, with its Modern Town Centric focus.

This shift towards Modern Urban Lifestyle since 1980's also accompanied an exodus from many Rural Localities and Villages as Family Dynasties aged.

It is in this context that Concurrence of Aboriginal, Colonial, Convict and Emigrant Cultural Heritage associated at Patricks Plains is in conflict with Mining while concerned Communities look towards Government Heritage Authorities for Guidance.

As Previously outlined, in 2013 the study “HUNTER ESTATES “A Comparative Heritage Study of pre 1850s Homestead Complexes in the Hunter Region”, was commissioned by NSW Office of Environment & Heritage and the Heritage Council of NSW based on a **concern that significant Colonial Landscapes and Homestead Complexes** throughout the Hunter Region could be lost by individual decisions arising from development pressures.

SSHEG has approached the NSW Minerals Council and the Upper Hunter Valley Mining Dialogue ([Attachments 10](#)) with the Bulga Tourism Hub Project Proposal regarding the five Mines along the Wollombi Brook regarding Indigenous and European Cultural Heritage History. The Response ([Attachment 11](#)) suggests a much broader Multi-Regional Initiative Thematic History of the Upper Hunter Valley.

With this in mind, and as individual Mines such as Rio Tinto in 2012 which then covered MTW and HVO including “Chain of Ponds” near Ravensworth - and now Yancoal: and now Glencore in 2017 have also the need to establish its own Community Heritage Study Committee, soon after Glencore Heritage Approvals at Bulga, HVO

and Wambo Mines. Mine Operational Ownership changes are compounding these Heritage issue for Yancoal and Glencore.

Other Mining Entities also are involved.

It is evident that Hunter Valley Cultural Heritage and State Significant Heritage was perhaps last visited in 2013 and needs a comprehensive Review by National and State Authorities as a Whole of Valley Review and Classifications; perhaps leading to Permanent Conservation Heritage Protection in the context of the short, medium and long term transition of Historic Heritage for Private and Tourism Opportunities as part of the overall Mine Rehabilitation Provisions. ([Attachment 12](#))

Singleton Council perhaps are overawed by the Mining Dollar remaining ineffective as Patricks Plains State Significant Historic Heritage Decays, becoming mostly mine bulldozed Ruins over the last 50 years; most ignored; or Privately owned without Conservation Guidelines; others incorrectly Heritage Listed, while reliant perhaps on the Local Historical Society rather than recommendations by the Singleton Heritage Advisory Committee independent of Council.

The Holistic Vision of the Bulga Tourism Hub targets the Cultural Heritage Visualisation beginning as Half Century Segments and developing as with Quarter Century segments across the Bicentenary Period 1770 -1820-1870 – 1920 – 1970 – 2020.

The Bulga Culture Centre Concept Outline was prepared by June 2016, the scope and outlines of the Visualisation Modules completed by December 2018 and the Bulga Tourism Hub Establishment and Development Phases and Implementation Plan with Draft Schedule to complete Terms of Reference Documents for development and use are detailed in [Attachment 13](#).

## **RIO Tinto / Yancoal Cultural Heritage Advisory Group**

established in 2012 resulting in 2015 Historic Heritage MTW & HVO Condition of Consent, including Bulga Community Funding. SSHEG Documents Attachments and extracts are: -

- 2002 Non Disturbance Areas from Mining (NDA1&2)  
RIO Tinto Warkworth Mine
- 2010 SSHEG “The Wonnarua and Hunter Valley  
Conservation Heritage Park” Submission.  
([Attachment 8 Plan 1](#))  
Aboriginal & Colonial Cultural Heritage
- 2012 Cultural Heritage Advisory Group (CHAG)  
Rio Tinto Established 2012 - July 2017 then Yancoal
- 2016 SSHEG “Bulga Cultural Centre” ([Attachment 8](#))  
Aboriginal, Colonial, Cultural Heritage  
International Significant Area –  
“Cockfighters Valley Precinct”  
Location – Heritage Listed Bulga Public School
- 2017 SSHEG NSW Planning Minister “CHAG Planning”  
MTW Colonial Heritage 19 Feb 2017 [Attachment 7](#)
- 2018 SSHEG Glencore Wambo ([Attachment 9](#)) Jan 2018  
“Holistic Vision of Ancestral Heritage in Hunter  
Valley”  
“Patricks Plains State Significant Precinct”
- 2018 SSHEG “Bulga Tourism Hub” ([Attachment 13](#))  
Patricks Plains Visualisation Modules NTH#8,  
24/10/18  
Aboriginal, Colonial, Convict & Emigrant Cultural  
Heritage, Implementation Plan & Access Archaeology
- 2019 SSHEG “NSW Resident’s Health Protection Planning”,  
Productivity Commissioner, Conditions of Consent  
11 November 2019. ([Attachment 14](#))

## “The Wonnarua and Hunter Valley Conservation Heritage Park”



## Ancestral Heritage Significance of Patricks Plains NTH# 8 ©

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*“BULGA TOURISM HUB”*

Without prejudice

### ➤ *Baime International Significant Area*

- ❖ **“Grasslands adjunct”** to the UNESCO Greater Blue Mountains NP with the BAIAME ‘Creator’ Painting and Bora significance also adjoins the Yengo NP Ancestral Aboriginal Rock Art and Myths; and this connectivity further extends to the Wolloml NP recent discovered “Eagle Reach” Cave Paintings in 1995, also with Baime Culture significance.





## Ancestral Heritage Significance of Patricks Plains NTH# 8 ©

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“BULGA TOURISM HUB”

Without prejudice

### What distinguishes Bulga Milbrodale apart in NSW ?

#### ➤ *International significance Area*

##### ❖ “**Grasslands adjunct**” to the UNESCO Greater Blue Mountains NP

Baiaime Culture for some Millennium before 1788 had already claimed these Lands as their own, with their Bora Legends recognising at least with knowledge of the “Flood Gates of the Sea Ocean ... thrown Open”.

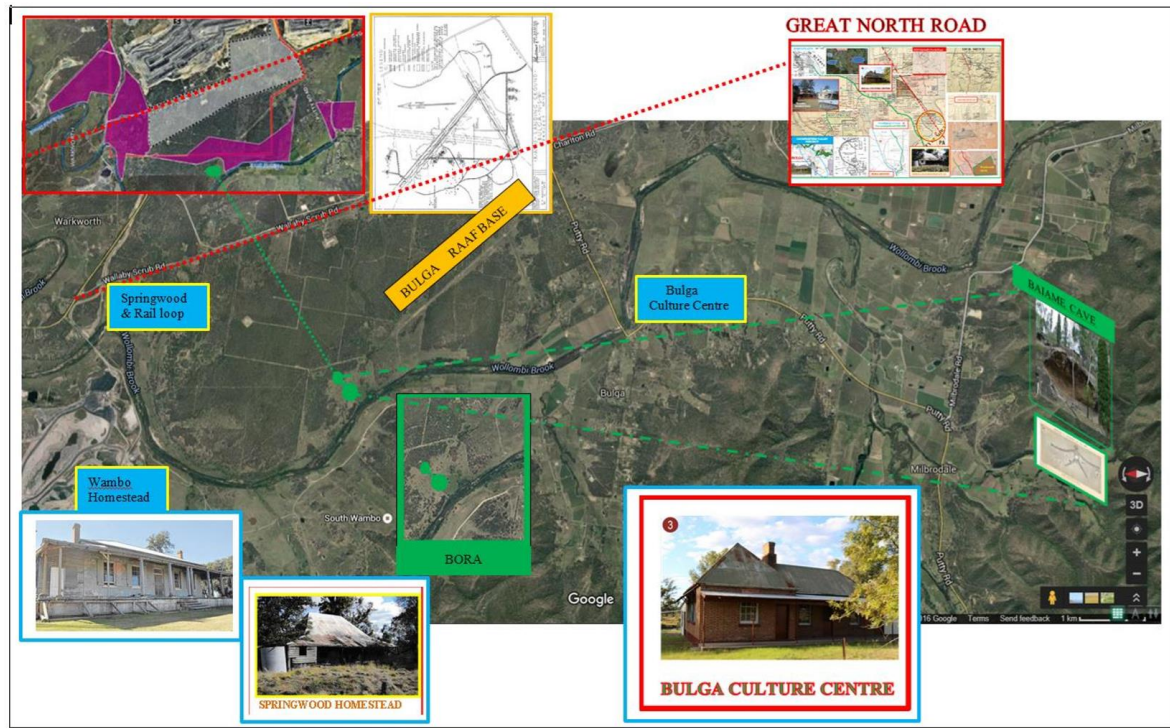
At Milbrodale, the Baiaime Painted Cave Image with exaggerated outstretched arms, are seen as all-embracing of the grasslands of the “Baiaime Valley”; suggesting the protector of these lands. and hence the Bulga Bora ceremonial connectivity.

Significantly, adjoining the North Facing Baiaime Cave is to the South the Forested and “Deep Woody Chasms” of the Greater Blue Mountains NP with its Eagle’s Reach Cave (in Darkness), exemplifying their Physical connectivity as well as their Baiaime Legendary symbolism,

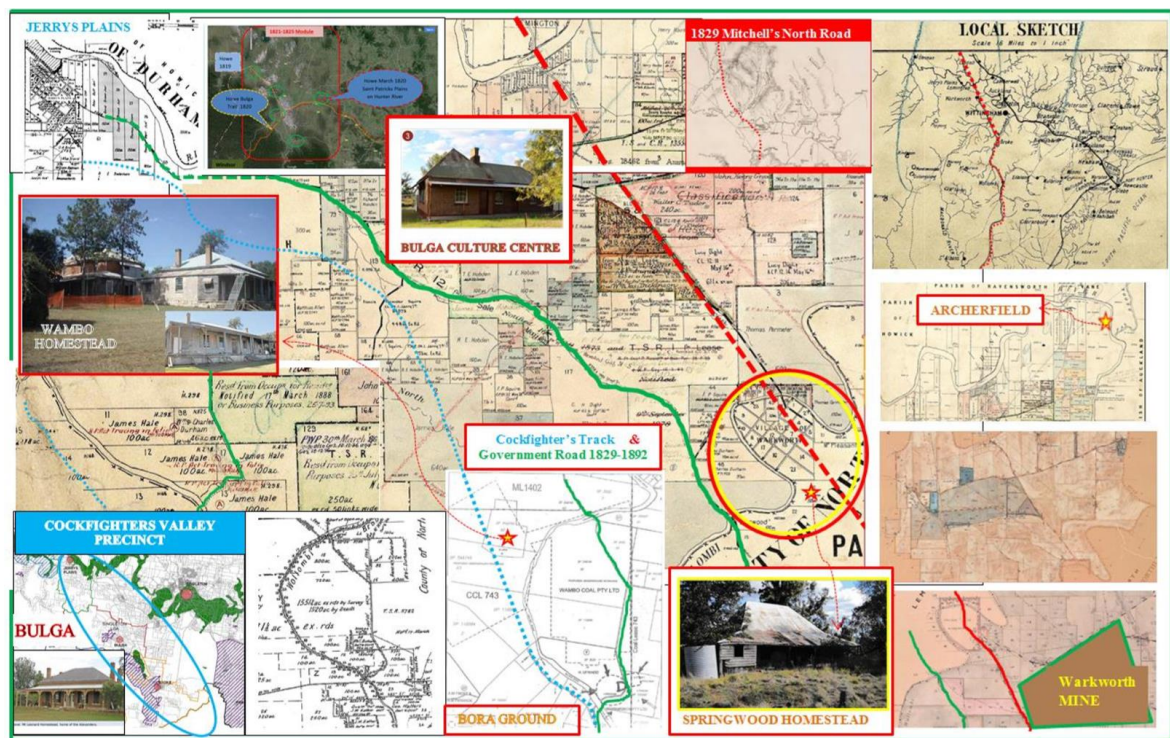
At the Bora Wellington NSW site on the rich green banks of the Macquarie River in 1832 “Chief - Marinbilly, Wizard or Doctor” describes the Baiaime (Piame) and Eagle Hawk connectivity significance as recorded by Henderson:-

**Piame, having initiated one of these in the mysteries of their religion, having directed him likewise to extract a front tooth from each of the young men, and inculcated the concealment of their sacred rites from women and children, proceeded towards the north; but he is again expected to return at some very distant period. The figure before mentioned represents him in a recumbent position, as he is at present considered to be asleep. There is however a tradition, that he once awoke, and having turned himself upon his side, the flood-gates of the salt ocean were immediately thrown open, and the hills and valleys disappeared beneath the rolling waters. It is also reported, that when he next awakes, a similar catastrophe may be expected.**

## Draft Composite Tourism Cultural Heritage Visualisation



Holistic Vision of Ancestral Heritage in Hunter Valley



Holistic Vision of Ancestral Heritage in Hunter Valley

## Ancestral Heritage Significance of Patricks Plains NTH# 8 ©

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*"BULGA TOURISM HUB"*

Without prejudice

➤ *Cockfighters Creek Significance*

❖ **Module D. “Bulga Heritage Village Tourism Hub” Outline**

Bulga- "Sense of Place" is synonymous with Aboriginal, Colonial and Convict Heritage Traits at Patricks Plains Cockfighters Creek past down in this enclave from the 1800's and shaped the present day 'Aussie' Culture evidenced by the Community struggle for Bulga Village recognition.



## Ancestral Heritage Significance of Patricks Plains NTH# 8 ©

### NTH# 8 Project Outline Scope for Visualisation Modules

This Projects NTH# 8 focuses upon the Community Identities and Personalities, as gleaned from Archival sources at the time, and specifically the role played in the development of Patricks Plains, and radiating beyond that into NSW to 135 Meridian through this Cockfighters Creek conduit.

The Preliminary detailing below outlines Aboriginal, Colonial, Convict and Free Settler impact across Patricks Plains in terms of Visualisation Modules and their Ancestral Cultural Heritage Significance.

#### Bulga Tourism Hub Vision©

#### What distinguishes Bulga Milbrodale apart in NSW ?

##### ➤ *Baiaime International Significant Area*

❖ “**Grasslands adjunct**” to the UNESCO Greater Blue Mountains NP

❖ **Module A.** ‘**Baiaime Cave**’ Ceremonial Significance

❖ ‘**Bulga Bora & Ceremonial Grounds**’ Significance

❖ **Connectivity of Baiaime Cave & Bora to GBMNP**

##### ➤ *Great North Road International Significant*

❖ **Module B.** ‘**UNESCO Great North Road**’ &  
**Major Mitchell Surveyor General**

##### ➤ *Convict Era International Significance*

❖ **Module C.** ‘**UNESCO Convict**’ Significance

❖ ‘**Holistic Hunter Valley Australian Convict**’ Significance

**C1.** British Convict Policy and Governor Arthur Phillip’s Impact.

**C2.** Role of Convicts in the Colony

**C3.** Significance of Convict Labour to Patricks Plains

**C4.** Colonial Culture shaped by Convicts Spirit

## Ancestral Heritage Significance of Patricks Plains NTH# 8 ©

### Bulga Tourism Hub Vision©

#### ❖ 'The Hunter Valley Convict significance 1820-1840'

##### **Module C5 'Land Grants with Convict Bondservants'**

- C5.1** 'Henry Dangar Surveyor' 1821-1825, 4 Convicts
- C5.2** 'Philip Thorley' 1821 "Mount Thorley", Son of Convict, 14c
- C5.3** 'Robert Hoddle' 1824 "Warkworth", Surveyor
- C5.4** 'Richard Hobden' 1824 "Great Lodge", 4 Convicts
- C5.5** 'Joseph Onus' 1825 Exconvict, 6 Convicts
- C5.6** 'George Bowman' 1825 "Archerfield", 8 Convicts
- C5.7** 'Dr Thomas Parmenter' 1825 Exconvict "De Quirosville" 5c
- C5.8** 'Major Mitchell's Great North Road' 1826-1836, # Convicts
- C5.9** 'James Hale' 1837 Exconvict "Wambo" chain, 20 Convicts
- C5.10** 'William Watts' 1842 Exconvict "Black Cock Inn"
- C5.11** 'Henry Nowland' 1843 son of Convicts "Chain of Ponds",

#### ➤ *Patrick's Plains Significance*

- ❖ The Saint Particks Plains Region emerged as the  
"Birthplace of the Hunter River" – Whittingham

- C5.21** 'Glendon' 1823 Robert & Helenus Scott, 40 Convicts
- C5.22** 'Neotsfield' 1821 Henry Dangar, 12 Convict + Bricks
- C5.23** 'Rosemount' 1823 James Mudie, 18 Convicts
- C5.24** 'Dalwood' 1830 George Wyndam, 50 Convicts
- C5.25** 'Barley Mow Inn' 1827 Benjamin - Son of Convict, 8 Cvt
- C5.26** 'Kirkton' 1824 John Busby, 8 Convicts

- ❖ The Patrick's Plains Entrepreneur Estate selections

- C5.31** John Bowman 'Archerfield' 1824, 'Arrowfield' 1825
- C5.32** Thomas Macqueen MP 'Segenhoe' 1823, 160 Convicts
- C5.33** Rev Richard Hill 'Milbrodale' 1824, 7+ Convicts
- C5.34** Dr James Bowman 'Ravensworth' 1825, 40 Convicts
- C5.35** William Dangar 1823 'Turanyville' & Dangar Dynasty
- C5.36** William Kirton 'Kirkton' 1824, 7 Convicts
- C5.37** Australian Agricultural Co 1825, 535 Convicts

## **Glendell Project - Conditions of Consent Historic Heritage Proposal including Funding**

The Singleton Shire Community and Environmental Protection Groups have been “Hoodwinked” in the “Planning Process Deed of Agreement to Perpetually Protect Mine Lease Areas “ as Non Destructive designated Areas from Mining”; and again in 2015 Mine Approvals of Historic Heritage Management and Great North Road Conditions of Consent that on the surface provide specific Funding on MTW and HVO Mines: all of which was Community Compensation for the Mining impact on Bulga Villagers.

All of which nearly 5 years of Mine Profits later, Bulga Villagers and Heritage Groups has yet to see any Funding released or benefits accrued. This is therefore a Compliance Complaint against Conditions of Consent!

This is why any Mining Proposals or Offers in this case by Glencore made to any Community Groups needs to be tempered, as most likely even with Conditions of Consent which includes Mine Undertakings to Governments at the time are simply likely to be ignored, altered by “the Secretary” or in Management Plans documented, and never actually eventuate.

It is for this track record that SSHEG have identified a set of Community Cultural Heritage Initiated Projects that need to be enacted by authorities collectively across all Mining Operations in much the same way the Upper Hunter Air Quality Monitoring Network was established and Funded regarding Community Health and Air Quality Initiatives. (Refer [Attachment 13](#) Conditions of Consent)

**The “impotent 2002 Bulga Deed of Agreement” compromise of Conservation, Heritage and Mining lives on today as the challenge to be effectively addressed.**

In 2013 the study “HUNTER ESTATES: “A Comparative Heritage Study of pre 1850s Homestead Complexes in the Hunter Region”, was commissioned by NSW Office of Environment & Heritage and the Heritage Council of NSW based on a **concern that significant Colonial Landscapes and Homestead Complexes** throughout the Hunter Region could be lost by individual decisions arising from development pressures. It was only the Private Owner of Wambo Homestead Estate who placed the Permanent Heritage Protection order. This time in 2020, a comprehensive set of National & State Significant Cultural Heritage Protections are to follow such a Study.

In view of the recent Wambo Homestead and now the Ravensworth Homestead Mining Proposals, it is appropriate that Historic Heritage Conditions of Consent should apply and be enacted across all Glencore Mine Operations similar to those which apply to RIO/Yancoal Mine Operations 26 Nov 2015 Approvals. This includes a Open access Community Group.

The Conditions of Consent are to recognise in Mining Approvals any deemed Historic Heritage Significances present on Mining Leases, with Stabilising, Security Protection and Progressive Restoration provisions for Mining including for their short, medium and long-term Public use.

Further, a number of Historic Heritage Projects have been drafted which focus on the Patricks Plains Cultural Heritage Significance, and the broader Upper Hunter Valley Heritage Significance for inclusion; such as: -

- 1) Cultural Heritage Study of Upper Hunter Valley, Patricks Plains Period, with Heritage Significance Classifications enactment; updating the earlier 2013 OEH Hunter Estates Heritage Study. This is to identify all Historic Heritage Estates that are in Ruins, destroyed or reused over the years but remain Heritage Historical Archaeological sites.
- 2) Ravensworth Estate Cultural Heritage Land Title Study, and regarding Aboriginal, Colonial, Convict & Immigrant Utilisation Archival Research in Quarter Century Segments. 1770 – 1795 – 1820 – 1845 – 1870 – 1895 – 1920 – 1945 – 1970 – 1995 – 2020.

- 3) Assembly of Information and the Preparation of a Report for State Protection Application that outlines the features and detailing of the “The State Significant Conservation Area – Cockfighters Valley Precinct” and associated Tourism Hub being the adjunct 1820’s grasslands North of the UNESCO Greater Blue Mountains National Parks, encompassing the Five Mining Operations along the Hunter River from Jerrys Plains to Broke and Gouldsville.
- 4) Establish Historic Heritage Yearly Audit Compliance of Mine Conditions of Consent and Mine Approval undertakings at the time of Approval, and including the Historic Heritage Management Plans as Compliance with these Consent Conditions.

## **Independent Real Time Visualisation & Air Pollution Controls Conditions of Consent**

- 1) Mine Air Pollution Minimisation & Dispersion Screen based Mitigation Alarm Systems Conditions of Consent.  
*“Bringing to bare modern Emerging Real Time Visualisation Technologies as a Mine Process Pollution Mitigation Control Methodology for Mine Pollution Dispersion and Minimisation”.*
- 2) All Hunter Valley Individual Mines EPA Air Quality Licences to be approved at *“Total 24 Hr PM10 concentrations due to the development plus background concentrations due to all other Sources”*; and not as is the current practice, that each mine can Pollute 24 Hr to 50 ug/m3 due only to its development. This is separate to the Minimisation provisions of the Air Pollution Act that are not being enforced.

## Glendell Mine Ravensworth Estate Obstacle -

After 40 years of Open Cut Mining in the Upper Hunter Valley, and in this Bicentenary Year 1820 -2020 of Howe Explorers effectively opening up Patricks Plains, the Hunter Valley and onto the Liverpool Plains and beyond; it is appropriate that DPIE with National and the NSW Heritage Authority effectively addresses the previous 2013 **concerns that significant Colonial Landscapes and Homestead Complexes** throughout the Hunter Region could be lost by individual decisions arising from development pressures.

However, this Ravensworth Mining Obstacle has not distracted Upper Hunter Valley Residents from the Poor Air Quality Issues associated with Open Cut Mining and Coal Fired Power Stations Air Pollution.

**NSW Health summary for Air Quality was detailed on 3 Dec 2015:**

*“There is no evidence of a threshold below which exposure to particulate matter (PM) is not associated with health effects. Therefore, it is important that all reasonable and feasible measures are taken to minimise human exposure to PM, even where assessment criteria are met”.*

It is no wonder that NSW Health would not water down its objections to the guidelines to Mine Approvals, rightly reminding the Authorities, as is also the SSHEG opinion, that lower Mine Pollution well below the “Industry Status Quo” are now overdue. **That is “Minimisation of Mine Pollution At all times”.**

SSHEG Mining Dialogue Project Proposal for additional direct Mine Operator Screen Alarms for Mine Air Pollution Dispersion and Minimisation Controls provides a guide to the Mine Air Pollution Drifting Patterns that Residents are daily exposed too, minute to minute.

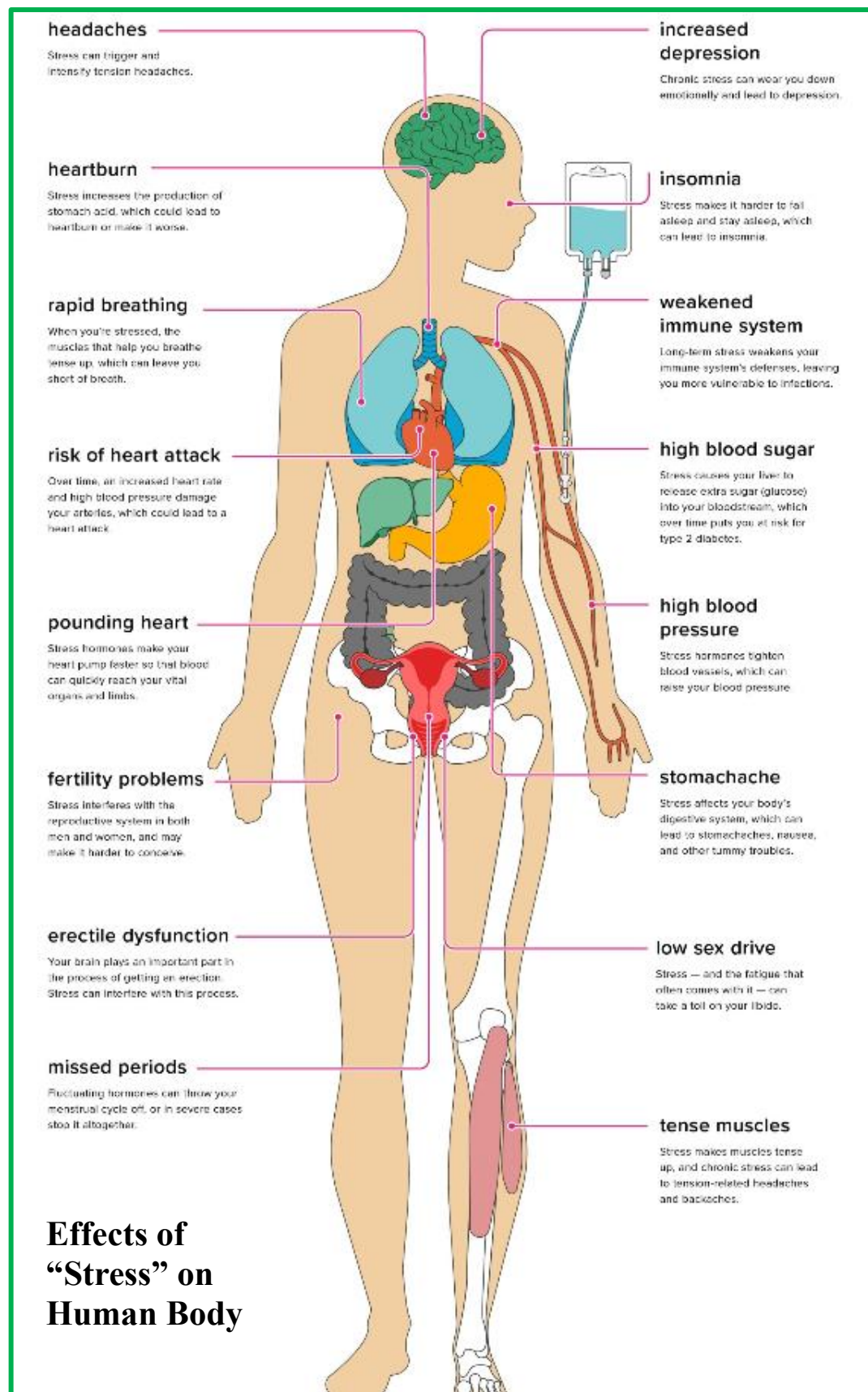
*Thanking you in anticipation of your acknowledgement.*

Dr Neville Hodkinson PhD

**Singleton Shire Healthy Environment Group**

## **Singleton Shire Healthy Environment Group Glendell Continued Operations Project SSD 9394 - Attachments**

- Attachment 1 SSHEG Upper Mining Dialogue Project Proposal entitled  
*“Coordinated Coal Mining Air Pollution Mitigation Controls, Options as WHO & NEPM Standards lower in the Hunter”* dated Sept 2019. (22 Pages)
- Attachment 2 SSHEG Air Quality & Community Health 10 Year Review  
*2008 – 2018, August 2018. (5 Pages)*
- Attachment 3 SSHEG *“Mine Pollution Dispersion & Minimisation”*  
*dated 11 November 2019. (9 Pages)*
- Attachment 4 “Hazelwood Health Study” 30 August 2017
- Attachment 5 CAR Glebe Sydney Bushfire Smoke Factsheet Dec 2019
- Attachment 6 SSHEG *“Mt Owen Continued Operations Project 5850 Ravensworth Homestead Estate submission 17 Feb 2018*
- Attachment 7 SSHEG Minister of Planning - CHAG Planning,
- Attachment 8 SSHEG “Bulga Cultural Centre” June 2016  
GBMNP’s - “Cockfighters Valley Precinct”
- Attachment 9 SSHEG Glencore Wambo “Holistic Vision of Ancestral Heritage in Hunter Valley” Jan 2018  
“Patricks Plains State Significant Precinct”
- Attachment10 SSHEG NSW Minerals Council Mining Dialogue Project  
Proposal State Significant Conservation Area  
– Cockfighters Valley Precinct, 17 March 2019
- Attachment11 SSHEG Upper Hunter Mining Dialogue – 3 Sept 2019  
Joint Environment Working Group – Proposal has Merit.
- Attachment12 SSHEG NSW Rehabilitation Reform Process Feb 2018
- Attachment13 SSHEG “Bulga Tourism Hub” Patricks Plains  
Visualisation Modules NTH#8, 24 Oct 2018
- Attachment14 SSHEG Productivity Commissioner, 11 Nov 2019
- Attachment15 SSHEG “Impact on Health of Air Quality in Australia”  
Senate Committee March 2013, (47 Pages) Reference.



## Hazelwood Fire May 2014 Long Term Health Study

<https://youtu.be/fyfXXSopj64>

The Hazelwood Health Study is about identifying potential health outcomes for people who may have been exposed to smoke from the mine fire. These might include heart and lung disease, cancer, and mental health problems. It will also look at the effects on vulnerable groups such as infants and children, young people, and older people.

### What were the results of testing and analysis?

Senversa’s study showed that brown coal ash residue from the 2014 Hazelwood brown coal mine fire that remains in some roof cavities is unlikely to pose any risk to the health of Morwell residents.

The study looked at the chemical make-up and amount of roof cavity dust and ash residue in 50 houses in Morwell. Roof cavity dust in 10 houses in Rosedale was also tested and compared with the Morwell results.

Nineteen contaminants were tested. These were:

- antimony
- arsenic
- boron
- barium
- beryllium
- cadmium
- chromium
- cobalt
- copper
- lead
- manganese
- mercury
- nickel
- polycyclic aromatic hydrocarbons (PAHs)
- selenium
- strontium
- titanium
- vanadium

Only three contaminants – antimony, lead and zinc – were found at elevated levels in any of the 60 houses. One house in Rosedale had an elevated level of polycyclic aromatic hydrocarbons (PAHs).

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Hunter New England Population Health  
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31 May 2018

Mr Jack Murphy  
Environmental Assessment Officer  
Resource Assessments - Planning Services  
GPO Box 39  
SYDNEY NSW 2001

Dear Mr Murphy

**GLENDELL CONTINUED OPERATIONS PROJECT – OPEN CUT COAL MINE – SSD 9349 - SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (SEARs)**

I refer to your email of 17 May 2018 requesting input into the SEARs for the Glendell Continued Operations Project (the Project) located in the Singleton Local Government Area.

The proposed development seeks to extend the footprint of the current Glendell open cut coal mine by approximately 1050 hectares to the north, and extend the life of the current approval by 20 years until 2044. The production rate would eventually increase at Glendell pit from the currently approved maximum of 4.5 Mtpa to 10 Mtpa ROM coal, as two neighbouring pits reach their end of life. The current practice of transporting the ROM coal to the Mount Owen CHPP for washing will continue, and the annual limit of 17 Mtpa at the CHPP will be maintained. However the Project will require an extension of life for the Mount Owen CHPP for 14 years beyond the current approval until 2045. The Project includes other changes such as relocation of the mining infrastructure area, and realignment of roads and pipelines.

It is noted that the proponent has developed a comprehensive Stakeholder Engagement Strategy in line with the Department of Planning and Environment's Social Impact Assessment Guidelines. The Preliminary Environmental Assessment (PEA) also identified as key issues for inclusion in the Environmental Impact Assessment (EIS) environmental aspects that are most likely to impact on human health, including air quality, noise, surface water and groundwater, and social impacts.

Hunter New England Population Health (HNEPH) has reviewed the PEA and provides the following points to be further considered in the EIS.

**Stakeholder Consultation**

It is recommended that the proponent seeks additional specialist advice in relation to ensuring robust community engagement and stakeholder consultation processes.

**Human Health Risk Assessment**

It is noted in the PEA that public safety and health risks have been identified as "other issues" without specialist reports. It is recommended that the EIS include the requirement of a human health risk assessment that considers the potential adverse effects from human exposure to acute and cumulative project related environmental hazards, in line with Point 9 in Section 4 – General

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2

Mr Jack Murphy  
31 May 2018

Standard SEARs in the Planning and Environment document *Critical State Significant Infrastructure Standard Secretary's Environmental Assessment Requirements (SEARs)* (December 2015). The assessment should be conducted in accordance with the enHealth document *Environmental Health Risk Assessment: Guidelines for assessing human health risk from environmental hazards* (2012) and be submitted as part of the EIS.

The assessment should include, but not be limited to:

- Assessment of the human exposure risks to acute and cumulative impact of noise,
- Air quality - particulates and cumulative impact of particulates with reference to the new standards for PM10 and PM2.5 published in 2016 and the proposed standards from 2025 which will prevail during the life of this Project (<http://www.nepc.gov.au/resource/variation-ambient-air-quality-nepm-%E2%80%93-particulates-standards>);
- The risk of contamination of stormwater and drinking water including ground water, surface water and rain water tanks.

When assessing health risks, both incremental changes in exposure from existing background pollutant levels and the cumulative impacts of specific and existing pollutant levels should be addressed at the location of receptors. Exposure should be assessed at the location of the most affected receptors and also for the other sensitive receptors which may include childcare centres, hospitals and aged care facilities. Consideration should also be given to the size of the population exposed to environmental hazards.

#### Potable Water Supply

The PEA for the Project does not mention a potable water supply for the facilities and employees at Glendell open cut coal mine. It is expected that there is no town water supply to the site and therefore the assessment should include comment on issues associated with drinking water quality and rainwater tanks. The peak reference document in Australia for information in relation to rainwater tanks is enHealth's *Guidance on use of rainwater tanks* (2010), which is accessible at: <http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-enhealth-rain-tank-cnt.htm>

Businesses or facilities that supply drinking water from an independent water supply (i.e. not town water) need to follow the *NSW Health Private Water Supply Guidelines* (2014). The *Public Health Act 2010* and the *Public Health Regulation 2012* require drinking water suppliers, including private water suppliers, to develop and adhere to a 'quality assurance program' (or drinking water management system). Further information and templates can be found at: <http://www.health.nsw.gov.au/environment/water/Pages/private-supplies.aspx>

NSW Health recommends regular testing of drinking water at facilities with a private supply. If a private water supply is contaminated, or is not monitored or not treated then consumers should be warned.

We look forward to reviewing the proponent's EIS when on exhibition.

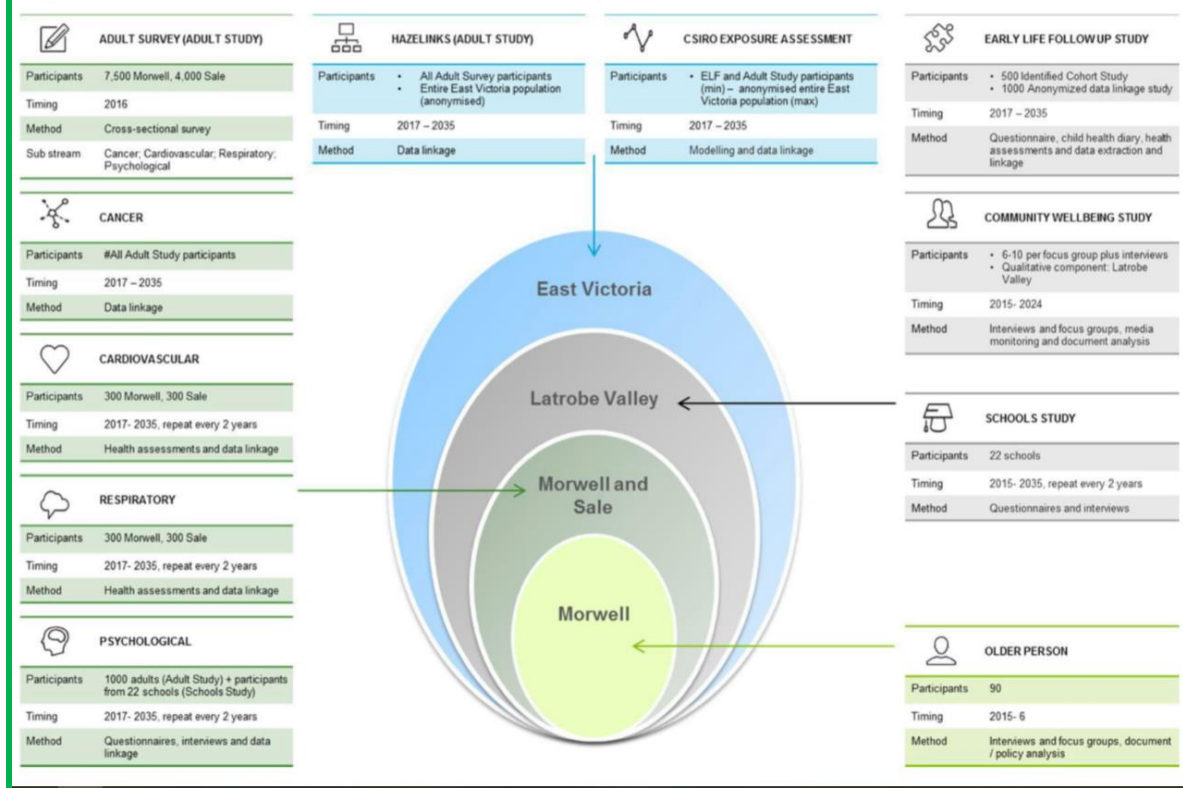
Should you require any additional information in relation to the above, please contact Ms Carolyn Herlihy, Environmental Health Officer on 4924 6477.

Yours sincerely



Dr Craig Dalton  
Acting Service Director - Health Protection

Figure 1: Overview of the Hazelwood Health Study



#### Impact Assessment Criteria

20. The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Tables 8, 9 and 10 at any residence on privately-owned land, except for the residences shown in Table 1 as being eligible for acquisition on request on the basis of air quality impacts.

Table 8: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	<sup>d</sup> Criterion
Total suspended particulate (TSP) matter	Annual	<sup>a</sup> 90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	<sup>a</sup> 30 µg/m <sup>3</sup>

Table 9: Short term impact assessment criterion for particulate matter

Pollutant	Averaging period	<sup>d</sup> Criterion
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	<sup>b</sup> 50 µg/m <sup>3</sup>

Table 10: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
<sup>c</sup> Deposited dust	Annual	<sup>b</sup> 2 g/m <sup>2</sup> /month	<sup>a</sup> 4 g/m <sup>2</sup> /month

#### Notes to Tables 8-10:

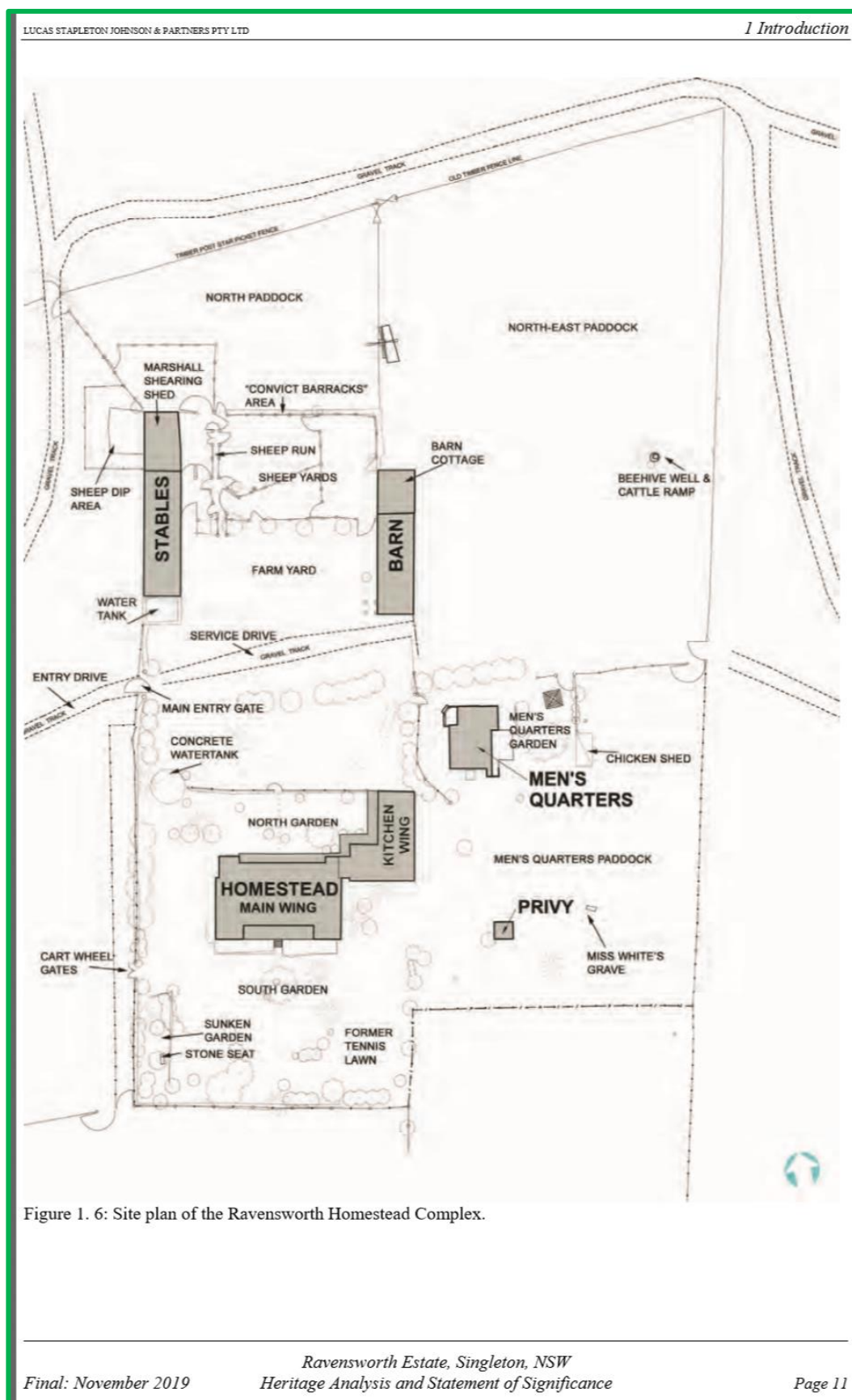
- <sup>a</sup> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).
- <sup>b</sup> Incremental impact (i.e. incremental increase in concentrations due to the development on its own).
- <sup>c</sup> Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.
- <sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed to by the Secretary.

The popularity of water transport affected the pattern of road building and roads came to river ports rather than competing with them (particularly in the Lower Hunter Valley).<sup>41</sup> the extension of the Great North Road through Singleton, Muswellbrook, Scone and Murrumbidgee the New England district fared better than the section between Sydney and Newcastle.



**Figure 9:** Undated sketch showing the roads around Singleton and Jerry's Plains.  
(Source: Mitchell Library, State Library of NSW\_Call No. Ca 84/17)

<sup>41</sup> Perumal, Wrathall & Murphy Pty Ltd, 1982; p. 19



### 3.3.1 Dr James Bowman and the Ravensworth Estate

Land was first taken up in the region of the project area by Dr James Bowman (surgeon and pastoralist) at Ravensworth in October 1824, and for one year, the Bowman estate was the northernmost settlement of the Hunter Valley.

James Bowman entered the Royal Navy as an assistant surgeon in 1806, being promoted to surgeon in 1807. He arrived in NSW in 1816 on the *Mary Anne* as a surgeon appointed to the convicts. In 1823 he had married Mary, the second daughter of John and Elizabeth Macarthur, whose dowry included 2000 merino sheep and more than 200 head of cattle. His request for land commensurate with his fortune was granted in 1824 and with additional purchases his estate, Ravensworth, located between Singleton and Muswellbrook, exceeded 12,000 acres (4856 hectares). **Figure 3.6** shows Robert Dixon's 1837 Map of the Colony of NSW indicating the location of Ravensworth. Following his marriage to Mary Macarthur Bowman lived at the general hospital in Sydney and the Ravensworth Estate was established, stocked and developed by overseers and convict labour. In 1824 he was appointed a member of the Australian Agricultural Company in 1824 and became an inspector of colonial hospitals in 1828.

The Bowman estate was described in 1824 as '12,160 acres in three portions' (Hunter 1997:1) encompassing Bowmans Creek and Yorks Creek. The property was later expanded to include frontage to the Hunter River, and by 1828, over 40 convicts and overseers worked on the Ravensworth property as shepherds, labourers, carpenters, sawyers, blacksmiths and stone masons (Hunter 1997:17). The estate was further expanded following the Robertson Land Acts of 1861 that allowed any person to select from 40 to 320 acres of land.

In 1829 James White became sheep manager at Ravensworth, having previously worked as sheep superintendent for the Australian Agricultural Company. The White family became one of NSW's most influential pastoral families of the nineteenth and twentieth centuries. The ten years (1829 to 1839) James White spent managing Ravensworth enabled him to become established as a major landholder in rural NSW (Hunter 1997:6-7).

While James White managed his Hunter estate Bowman purchased over thirty-six acres of land in Glebe and engaged architect John Verge to design and build a mansion house; Lyndhurst. Following the departure of James White, Bowman had taken a more active role in Ravensworth. He soon became involved in community affairs in the Singleton district and became the President of the Singleton Benevolent Society. In 1841 he donated two acres of land for the erection of an Anglican Church and burial ground near the Falbrook crossing, now Camberwell, however it was not ready for services until the 1850s after Bowman's death. With the economic depression of the 1840s and the costs of building Lyndhurst Bowman fell into financial trouble, however James and William Macarthur took over his liabilities and the management of his estate. He died in 1846 at Ravensworth and the Macarthurs sold the property in 1847 to Captain William Russell.

Xstrata Ravensworth Operation Appendix 12 2010 Extract  
(79 Convicts assigned to Ravensworth Estate in total)

### 3.9 Mining

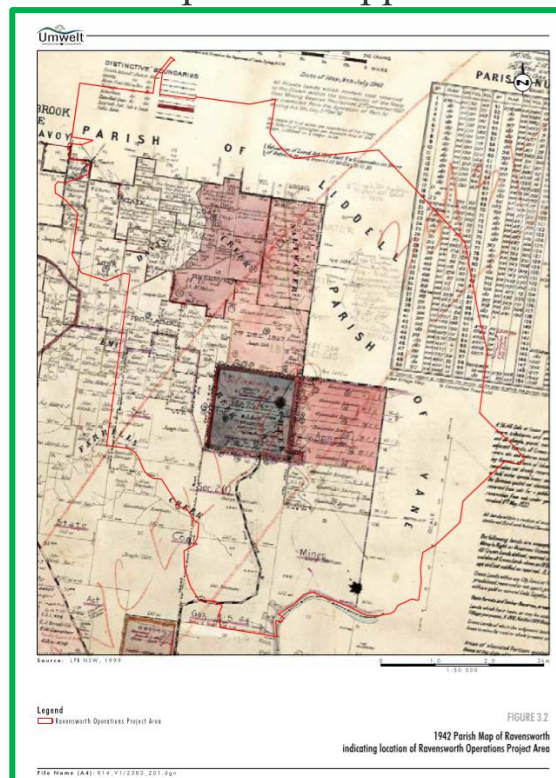
The development of coal resources comprises an important part of the region's history of coal mining within the Hunter Valley began on a limited scale in the early 1900s, prior to a rapid expansion in the 1950s with the establishment of large open-cut mines (Dean-Jones and Mitchell 1993:2). The southern extent of the project area is marked as 'State Coal Mines' on the 1942 Parish Map of Ravensworth (refer to **Figure 3.2**).

Coal was known to exist in Singleton and its surrounding areas since early exploration. Coal was first mined in the Upper Hunter in the Rixs Creek area near Singleton in the 1860s (Rappoport 2006:24). On 23 September 1886, the 'Singleton News' in the Maitland Mercury reported that


Since Messrs Nowland opened up their mine, sinking for coal has been actively prosecuted on the Ravensworth estate and we learn that the perseverance of the promoters has been successful to such a degree that they intent to float the undertaking shortly into a company with equal capital of £50,000. A prospectus will be shortly issued.

Noble writes that no further information was found on this venture but it indicates that coal extraction was commencing during this time. According to the Heritage Office & DUAP (1996:4) 'coal was not commercially exploited until the 1890s in the Upper Hunter. Coal mining and electricity generation have become major industries in the Singleton area since the 1950s with the first wave of collieries built to meet export demand at Liddell, Foybrook and Liddell State. Since the mid-twentieth century, coal mining operations 'expanded from Cessnock/Maitland area to the triangle bounded by Singleton, Muswellbrook and Denman, using highly mechanised, open cut surface mining techniques in which all overburden is stripped from the surface' (Rappoport 2006:24).

### Xstrata Ravensworth Operation Appendix 12 2010 Extract




Hunter region : National Trust interim list / National Trust of Australia

Bib ID	1698423
Format	 Book
Author	<a href="#">National Trust of Australia (New South Wales)</a>
Description	Sydney, N.S.W. : The Trust, 1981 142 p. : ill., facsim., maps, plans ; 30 cm.
ISBN	0909723923
Notes	Spiral binding.
Subjects	<a href="#">Architecture -- New South Wales -- Hunter River Region -- Conservation and restoration.</a>   <a href="#">Historic buildings -- New South Wales -- Hunter River Region -- Conservation and restoration.</a>   <a href="#">Conservation of natural resources -- New South Wales -- Hunter River Region.</a>

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when a trip to the Sandy Creek end is contemplated, the journey there and back means about two days' hard work. Sandy Creek is an out-station, which lies on the watershed toward Muswellbrook, and as compared with the Ravensworth (proper) end is generally regarded as more naturally adapted for running stock. Between the home-station and the north or Sandy Creek end there is a good deal of rough country, though the area immediately surrounding the standing is of very good quality indeed. The general reason assigned for the Muswellbrook end being superior is on account of the larger rainfall annually registered.

As a grim satire on the collapse of the Land Co. of Australasia, it may be mentioned that a landslip of huge proportions lately occurred about ten miles north from the home station, when no less than 200 feet of mountain toppled into the creek, so effectually damming it that a new lake was formed in no time on the north side before the water found its way back again into the natural channel. This terrestrial slide has caused much inconvenience, as the track through what is known as "The Needles" has been permanently blocked, and travellers are, of necessity, compelled to go over the spur.

The Ravensworth home-station is all that