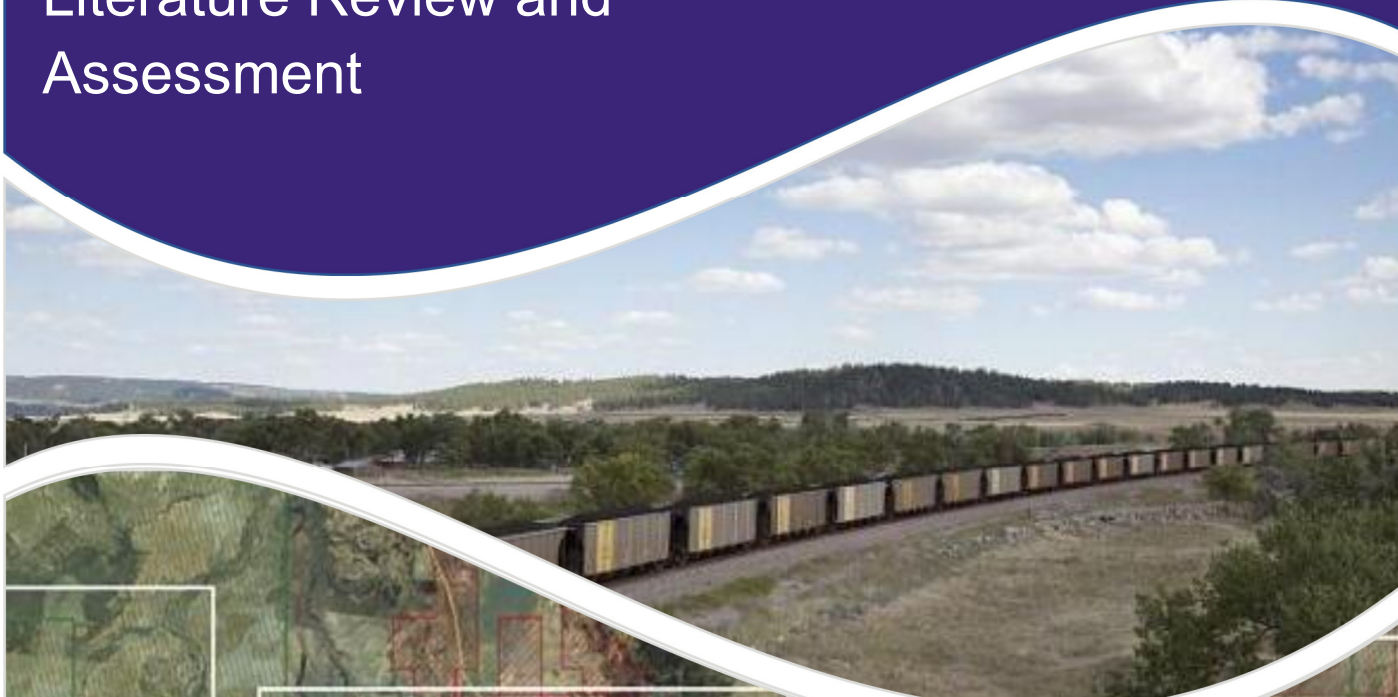




# Adani Rail Easement Study Literature Review and Assessment



August 2012

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## **1 STUDY OUTLINE**

Xenith Consulting Pty Ltd ("Xenith") has been commissioned by Adani Mining Pty Ltd ("Adani") to provide a review of a proposed rail line and rail line corridor from their Carmichael Coal project in the Galilee Basin to the existing Queensland Rail network near Moranbah. The proposed rail corridor traverses over a number of exploration permits ("EP's") relating to three different resource types which are; Exploration Permit for Coal ("EPC"), Exploration Permit for Petroleum ("EPP") and Exploration Permit for Mineral ("EPM"). A chronological review of exploration results over the area affected by the proposed rail corridor was undertaken to assess the likelihood and/or potential that a significant resource deposit exists within the area.

This report summarises the methodology and results of the review, as at 28<sup>th</sup> August 2012.

## **2 SUMMARY OF RESULTS**

### **2.1 Area 1 Western Branch**

Based on the current understanding of the structure and geological evidence from various studies of the Galilee basin in the vicinity of the Carmichael project, coupled with the results from Adani's recent drilling campaigns and the results of Canso's regional seismic survey, it was concluded that the potential for a substantial economic coal deposit existing further to the east of Adani's Carmichael Coal Project is low.

No information was located to indicate mineral resources occur in this area.

Based on the limited information available from historical reports as well as reports generally indicating that the area generally does not offer sufficient potential for large hydrocarbon accumulations, it is concluded that the potential for a substantial economic petroleum deposit existing in this area is low.

### **2.2 Area 2 Central Branch**

Whilst some anomalous gold values have been recorded, no reports relating to the affected tenements indicated that any significant and/or viable precious metal deposits were Present in the area.

### **2.3 Area 3 Eastern Branch**

There appears to be very little prospect for coal across the area associated with the proposed rail corridor. Exploration largely entailed rotary drilling of the deep basins that were identified from airborne geophysics. The basins explored proved to be deep weathered Tertiary sediments and or deep weathered recent or Quaternary sediments. Coal seams were noted to be thin and or heat effected of non-coking quality. Due to excessive sediment cover it was also noted that where coal existed, it would incur a large expense to recover and extract. Exploration for minerals has largely involved regolith investigations and targeted rotary drilling over magnetic anomalies, and has to date yielded nothing more than a small number of



anomalous values for gold and or base metals. The results from assayed samples to date are anomalous and not extensive and as such have been considered low potential for an economically sustainable mining case. It has been noted in most reports that the excessive sediment cover and shallow depth to basement does not favour the potential for a significant resource.

Exploration for Coal bed methane and natural gas has largely been restricted to the Bowen Basin to the east. The proposed rail easement encounters the current EPPs within the final 3-4km near the town of Moranbah. The prospectivity for coal bed methane is poorly known and inconclusive due to poor exploration. The EPP is assumed to have low potential for coal bed methane due to small thin coal seams and shallow depth to basement.

### **3 REGIONAL GEOLOGY**

The proposed rail corridor incorporates four main regional structural elements; these are from west to east: the Galilee Basin, the Drummond Basin, the Anakie Inlier and the Bowen Basin.

The Galilee Basin is Upper Carboniferous to Upper Triassic in age and formed during downwarp after a period of middle Carboniferous tectonism when the Drummond Basin was uplifted, folded and faulted.

The Drummond Basin forms a large intracratonic basin and is interpreted as a structural remnant of an intermontaine basin containing predominately fluvial sediments. The sediments of the Drummond basin are of Late Upper Devonian to Lower Carboniferous in age and are of continental origin, probably largely fluvial. The sequence was uplifted and folded in the mid Carboniferous to form a structural high.

The Neo-Proterozoic or Early Cambrian Anakie Inlier is a structural high comprised primarily of the Cambrian Anakie Metamorphics. The Anakie Inlier metamorphic rocks are considered to form the regional basement to the sediments of the Drummond Basin. They are unconformably overlain by/faulted against the Drummond Basin Sequence.

The Bowen Basin is of Late to Early Permian in age and in this region thins and overlies intrusions of Devonian and Carboniferous volcanics and metamorphics. The Permian sequence cropping out in the Suttor River area was extensively weathered and laterised comprised mainly of sandstone. Most of the Eastern branch region is covered by the Tertiary Suttor Formation and Cainozoic alluvium and soils.

Acidic to intermediate igneous intrusions occurred, in part, coeval with the development of the Drummond Basin. Known gold deposits in the region are generally related to these high-level intrusives, emplaced into either the Silver Hills Volcanics of the Drummond Basin unit, or the underlying Anakie Metamorphics of the Anakie Inlier. These Formations host the geographically closest economic epithermal gold deposits at Wirralie, Yandan, Pajingo and Mount Coolon.

The area was not systematically explored prior to the mid 1980's. The discoveries of the Pajingo, Wirralie and Yandan deposits brought several mining/exploration companies to the district from 1985 onwards.

## 4 METHODOLOGY

Regional geology was investigated, reports were analysed and summarised where relevant and a summary of the areas was compiled.

EPC, EPP and EPM data was downloaded from the 'Interactive resource and tenure maps' v4.2 application ("IRTM") on the Queensland Mining and Safety website which was saved and overlayed with the files received from Adani illustrating the position of the proposed rail line to show the affected EP's.

Relevant EP's were investigated using the 'Queensland Digital Exploration Reports' website (QDEX) to load and save lodged reports with information relating to exploration results.

Relevance was based on the following parameters; the information within the report discussed an area either covering or adjacently situated to the proposed rail line and its corridor, and when an EPC/EPM/EPP was being assessed, the information within the report was relevant to the aforementioned EP's. For example, it was determined that mineral as well as some reports relating to petroleum exploration did not contain relevant information to EPC's. Therefore, reports relating to coal exploration were more closely analysed than those of mineral or petroleum exploration. However, in most cases, only petroleum exploration reports were available.

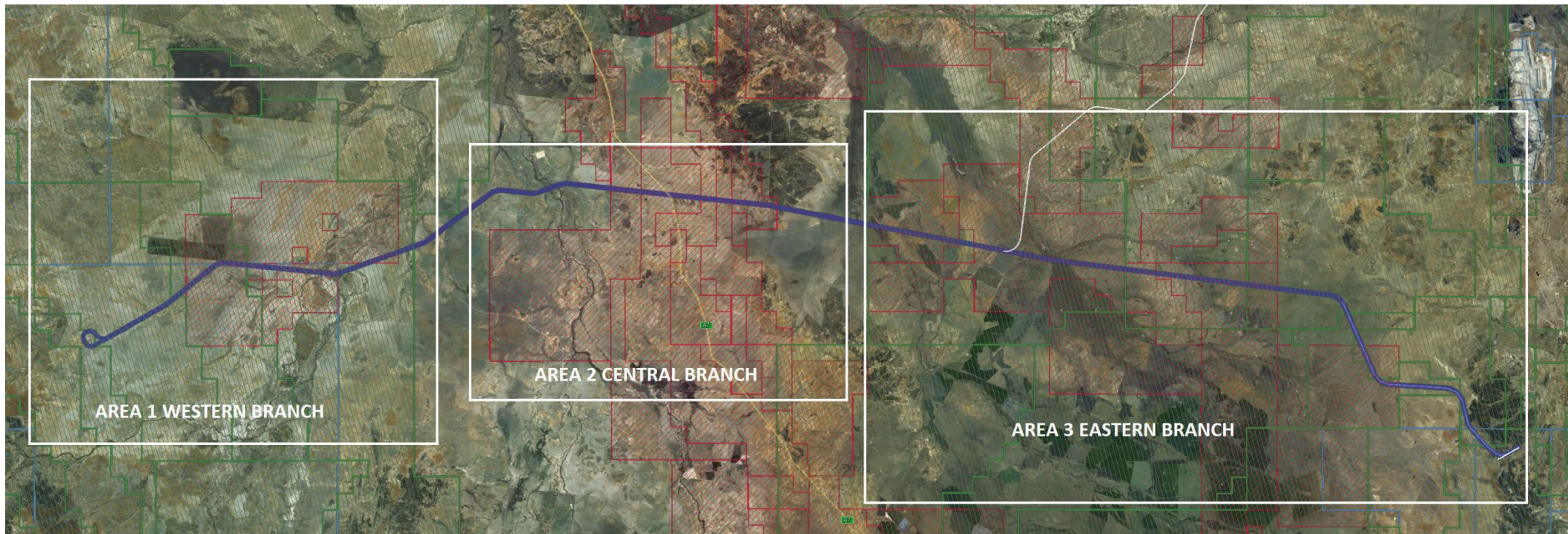
The proposed rail corridor was split up into three areas, as shown in Figure 4.1. This is also represented in Table 4.1. The areas were divided based on general trends in tenement type, largely also coinciding with the major structural elements discussed earlier.

Investigations took place on an area by area basis including; regional geology, a review of previous exploration reports and, where available, a review of recent exploration reports. This resulted in a summary of the likelihood and/or potential of a significant resource deposit existing within the area of Adani's proposed rail corridor.

**Table 4.1 – Current Tenement Holders in Rail Easement Area**

<b>Current EPC and EPCa Holders</b>	<b>Current EPM and EPMa Holders</b>
<b>Western Branch – Area 1</b>	<b>Western Branch – Area 1</b>
EPC1080, EPC1957, EPC2161, EPC2458	EPM19716, EPM19715, EPP1044
<b>Central Branch – Area 2</b>	<b>Central Branch – Area 2</b>
nil	EPM16523, EPM16527, EPM17703, EPM17641, EPM14934
<b>Eastern Branch – Area 3</b>	<b>Eastern Branch – Area 3</b>
EPC1234, EPC1069, EPC1244, EPC2135, EPC2188, EPC2163	EPM19193, EPM19292, EPMa19063, EPM14928

**Figure 4.1 – Boundaries of Area 1 Western Branch, Area 2 Central Branch and Area 3 Eastern Branch**





## 5 RESULTS FROM LITERATURE REVIEW

### 5.1 Area 1 Western Branch

The tenements which would be affected by the proposed Adani rail line in Area 1 are, from west to east, as follows:

EPC1080 – Waratah Coal Pty Ltd

EPC1957 – Mining Investments One Pty Ltd

EPC2161 - REM Resources Pty Ltd

EPM19716 – Mining Investments Three Pty Ltd

EPM19715 – Sandfire Resources NL

EPC2458 – Civil and Mining Resources Pty Ltd

EPP1044 – Queensland Energy Resources Ltd

A map showing these tenements follows as Figure 5.1.

#### 5.1.1 Summary of Previous Work on:

**EPC1080 – Waratah Coal Pty Ltd;**

**EPC1957 – Mining Investments One Pty Ltd;**

**EPC2161 - REM Resources Pty Ltd;**

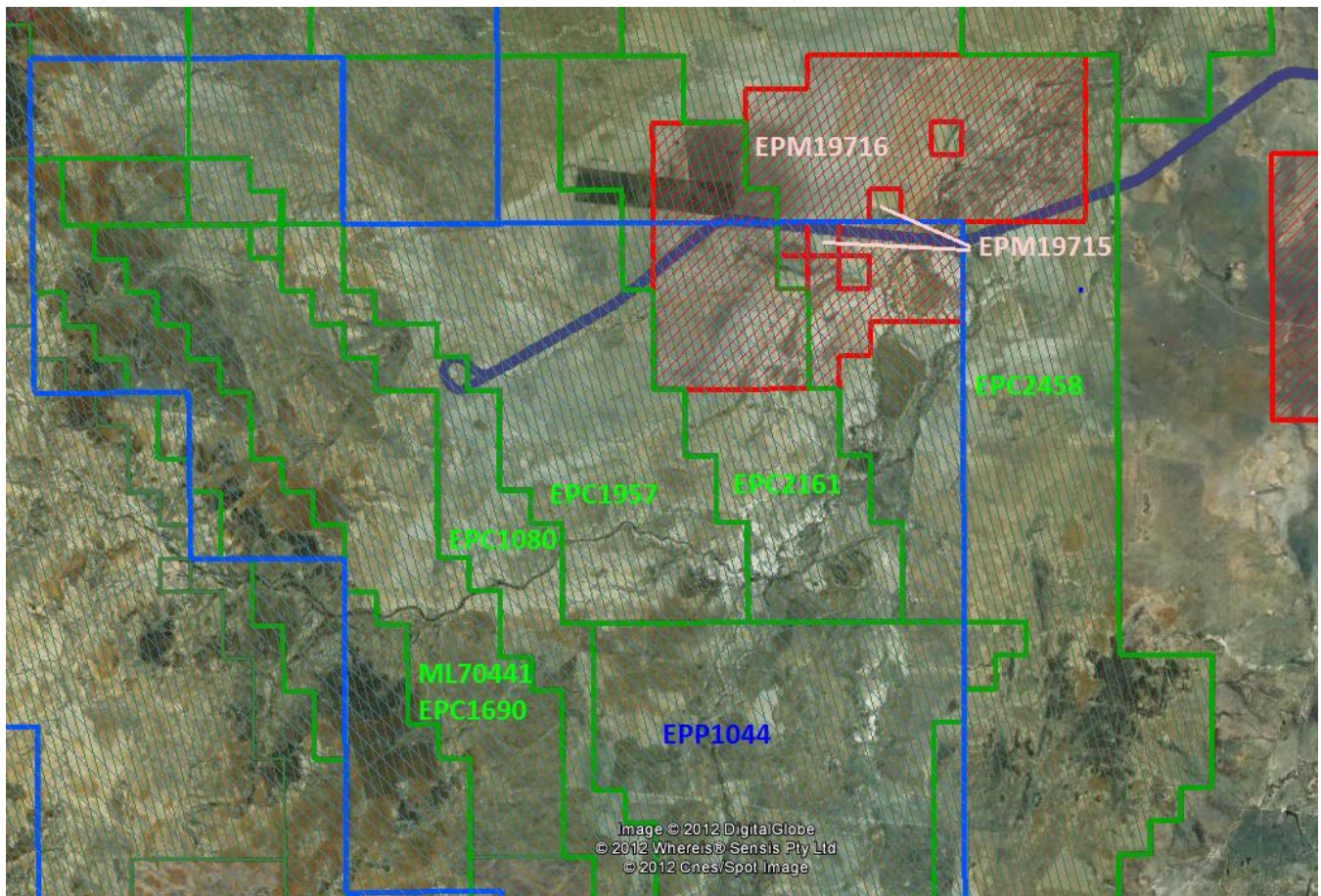
**EPC2458 – Civil and Mining Resources Pty Ltd**

Xenith Consulting previously undertook a desktop review of EPC's to the east of the Carmichael Coal project within the Moray Downs property boundary. The property boundary is shown in the map which follows (Figure 3). The aim of the project was to assess the likelihood of the presence of the Permian age coal measures, which are planned to be exploited in the Carmichael project. To undertake this review Xenith referenced data available in the public domain and data collected by Adani during the recent drilling programs (2009-2012).

Drilling was carried out by the Queensland Department of Mines in the Galilee Basin in the mid 1970's focusing along a sub north/south line originating approximately 30km northeast of Jericho, and passing through the Moray Downs property and Carmichael Coal Project area, terminating near Longton near Pentland.



**Figure 5.1 – Tenements in Area 1 Western Branch**



It is known that numerous water bores have been drilled in most Galilee Basin properties over many years, but unfortunately it is unclear on how many of these have had accurate well site logs completed to assist in confirming if the coal measures sequence exist or not. This would require further analysis and sourcing government databases.

An extensive 2D regional seismic survey was undertaken in 1983 by Canso Resources Ltd ('Canso') covering an area of 72,455km<sup>2</sup> and including the majority of the Moray Downs Property. The survey was carried out in two phases and was undertaken to understand the Drummond and Galilee basins, with the view to explore for potential hydrocarbons. The seismic lines crossing in Moray Downs property can be seen in Figure 5.2.

The interpreted results of this survey show that the eastern extent of the Permian coal measures is within the area covered by EPC 1690 (MLA 70441) and EPC 1080 immediately to its east. This is supported by the data produced by Adani's recent drilling programmes, which have resulted in only a small zone of coal development anywhere to the east of the MLA boundary. Figure 5.2 shows the location of the Permian coal measures subcrop as interpreted by Canso from their seismic survey, and the subcrop of the AB1 and D1 seams from the July 2012 Adani geological model.

The Adani and Canso subcrops run sub parallel through the MLa and EPC 1080 with the maximum variance (approximately 1500m east west distance) in the north of the MLa. The Canso study was targeting reflectors at depth, while the Adani crop lines have been determined by drilling. Both datasets illustrate that is unlikely that Permian age coal seams exist to the east of EPC1080 on the Moray Downs property.

Cuesta Coal, who hold EPC1957, hold other EPC's in the Galilee Basin and have completed some exploration of interest, however no results of this drilling are available in the public domain. Figure 5.3 shows the location of Cuesta's exploration drilling. There are seven holes that Cuesta state have intersected coal that are located to the east of the interpreted Adani and Canso Permian coal measure subcrops. These results have not been formally reported by Cuesta, however a recent press release suggests that the coal intersected in EPC 1802, north east of the Adani leases (see Figure 4), is equivalent to the E and F seams of the Betts Creek Beds. It should be noted that EPC 1802 lie's approximately 15 kilometres to the north of the proposed Adani rail line.

#### **5.1.2 Summary of Previous Work on: EPM 19716 – Mining Investments Three Pty Ltd; EPM 19715 – Sandfire Resources NL**

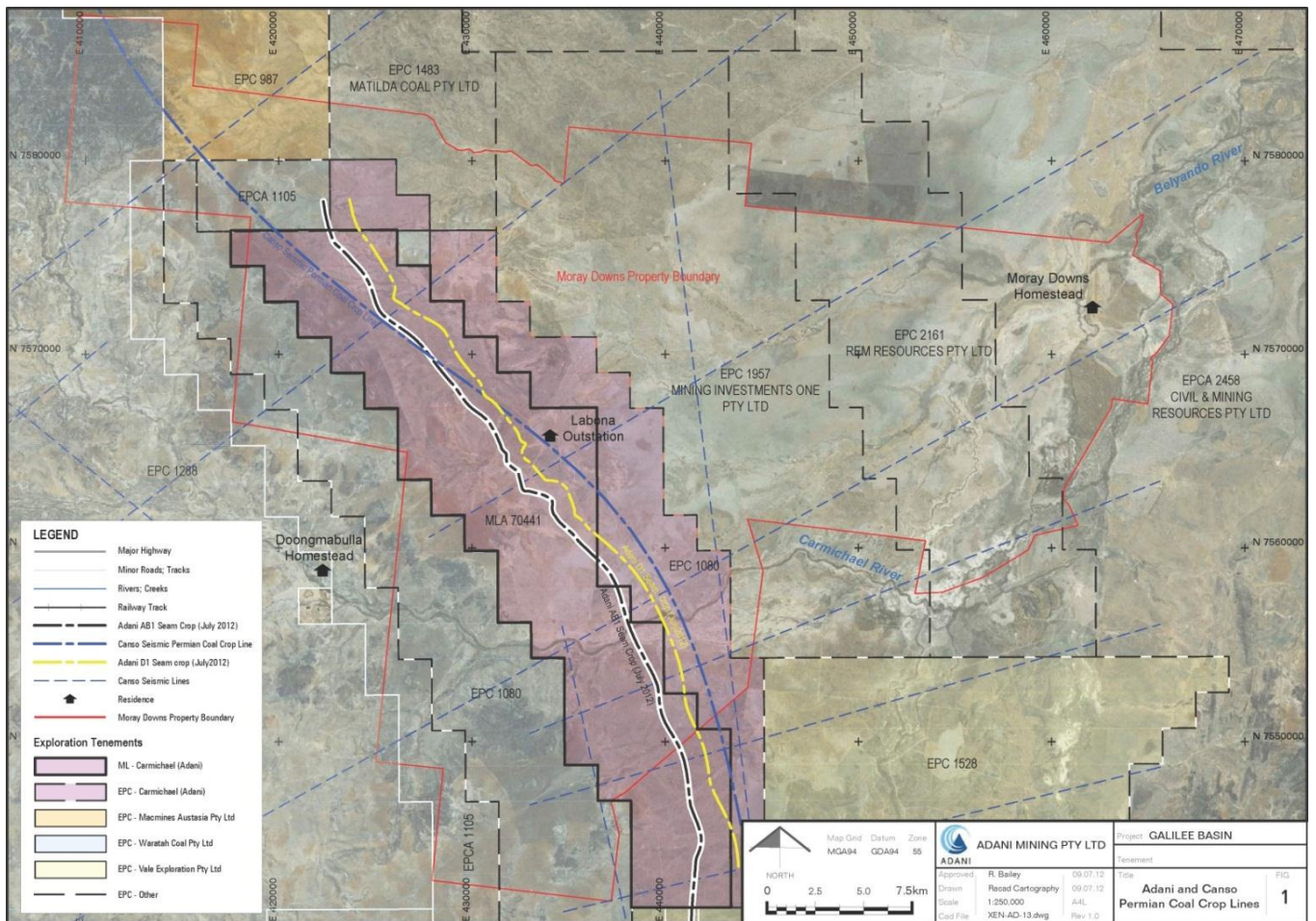
The QDEX website was also used to locate documents relating to minerals over the area proximal to the proposed rail line, but no information was located; no previously held EPM's were located in this area.

#### **5.1.3 Summary of Previous Work on: EPP 1044 – Queensland Energy Resources Ltd**

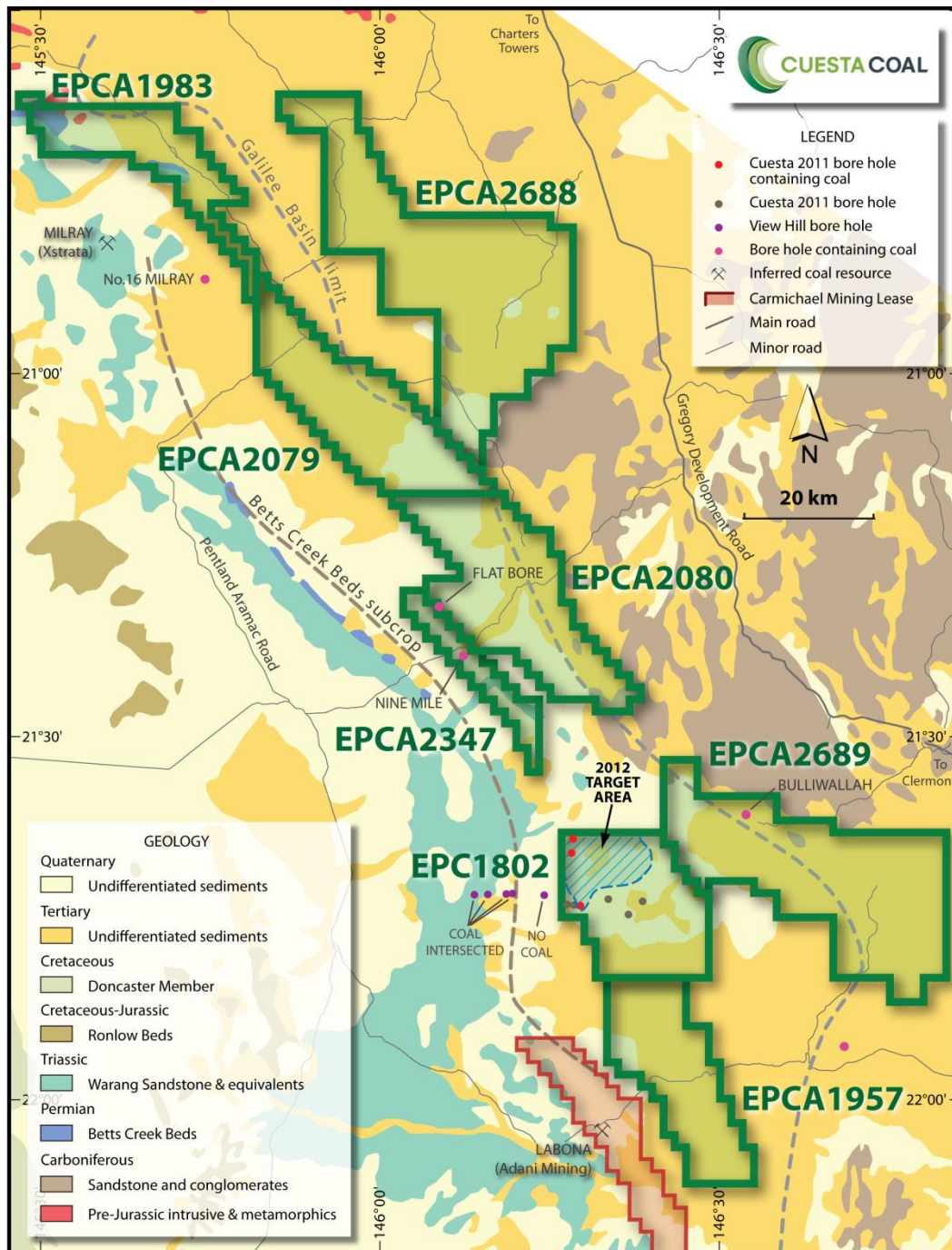
Although there have been numerous EPP's in the area, there is limited information available proximal to the proposed rail line. Seismic work and drilling have been undertaken though are generally situated some distance away from the proposed rail line. Based on limited information available from historical reports as well as reports indicating that proximal areas generally did not offer sufficient potential for large hydrocarbon accumulations, it is concluded that the potential for a substantial economic petroleum deposit existing in this area is low.



**Figure 5.2 – Adani and Canso interpreted Permian Coal crop lines**



**Figure 5.3 – Location of Cuesta Coal Ltd Exploration Drilling in Galilee Basin (2 July 2011)**





## 5.2 Area 2 Central Branch

The tenements which would be affected by the proposed Adani rail line in Area 2 are, from west to east, as follows: A map showing these tenements follows as Figure 5.4.

EPM 16523 – Zamia Resources Pty Ltd (Granted)

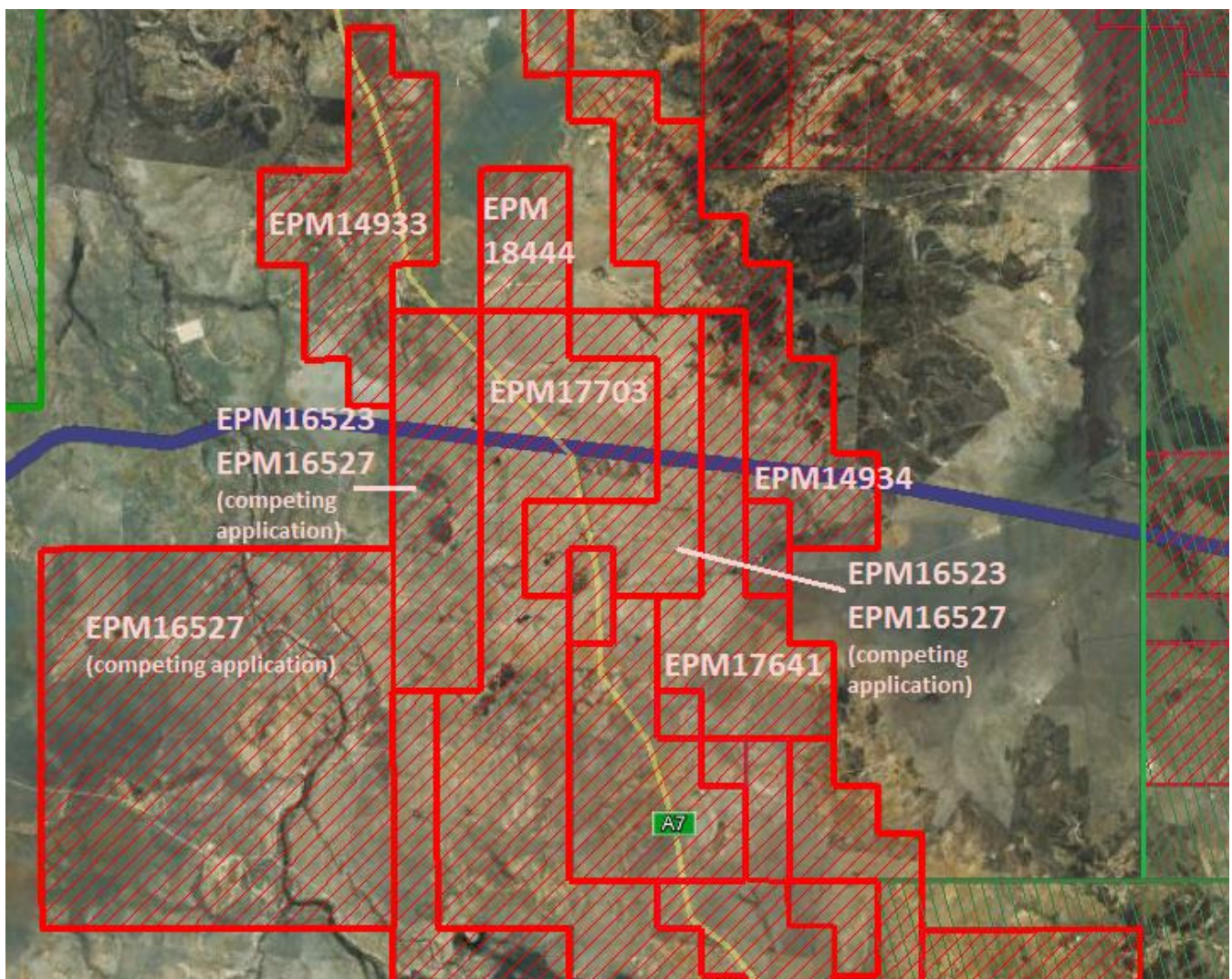
EPM 16527 – Drummond West Pty Ltd (Competing application with EPM 16527)

EPM 17703 – Zamia Resources Pty Ltd (Granted)

EPM 17641 – Zamia Resources Pty Ltd (Granted)

EPM 14934 – Drummond West Pty Ltd (Granted)

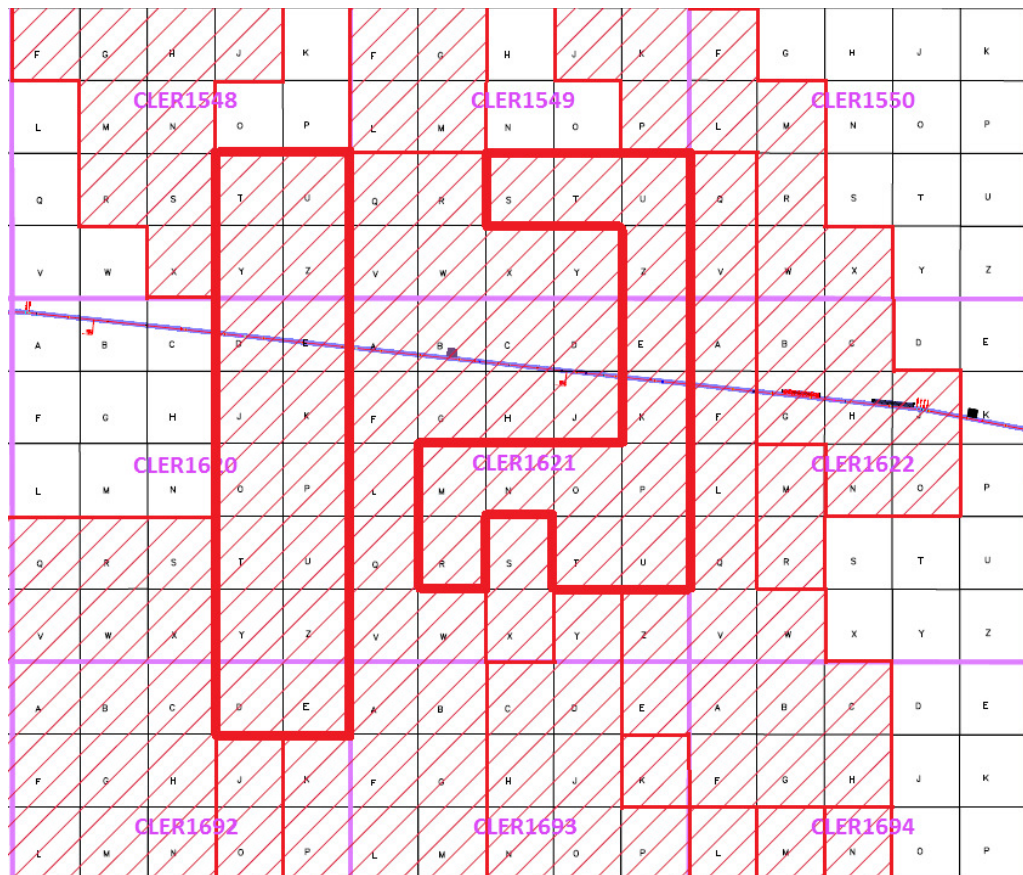
**Figure 5.4 – Tenements in Area 2 Central Branch**



**5.2.1 Summary of Previous Work on:**  
**EPM 16523 – Zamia Resources Pty Ltd (Granted);**  
**EPM 16527 – Drummond West Pty Ltd (Competing application with EPM 16527)**

Figure 5.5 shows these EPM's block locations.

**Figure 5.5 – EPM 16523, EPMA 16427 blocks and subblocks**



Previous exploration over these two tenements which was analysed is outlined in the table which follows, Table 5.1. The previous EPM results have also been summarised.



**Table 5.1 – Previous Exploration Occurring Over EPM 16523 and EPMA 16427**

ID	Tenure Type	Status	Reporting Period
EPM16523	Mineral	Granted	2010-Present
EPM16527	Mineral	Competing Application	2010-Present
EPM14588	Mineral	Relinquished area proximal to proposed rail line	2000-09
EPM10735	Mineral	Relinquished	1990-99
EPM10425	Mineral	Relinquished	1990-99
EPM4280	Mineral	Relinquished	1980-89
EPM5169	Mineral	Amalgamated/Relinquished	1980-89
EPM2632	Mineral	No information	1980-89
EPC809	Coal	Relinquished	2000-09
EPP239	Petroleum	Relinquished	1970-79
EPP69	Petroleum	Relinquished	1950-59
EPP76	Petroleum	Relinquished	1950-59

EPM 14588 - Poor results from the soil sampling programme, in conjunction with information and interpretation of geophysical, geological, radiometric and Landsat data have confirmed that the area subject to relinquishment is not attractive for low sulphidation quartzadularia epithermal style Au systems.

- Relinquishment of subblocks CLER 1620 DEJK in first partial relinquishment in 2007 (subblocks are adjacent to proposed rail line)
- Relinquishment of subblocks CLER 1621 EKMNOP in first partial relinquishment in 2007 (subblocks are adjacent to proposed rail line)
- Relinquishment of subblocks CLER 1622 MR in first partial relinquishment in 2007 (subblocks are adjacent to proposed rail line)
- Relinquishment of subblocks CLER 1622 AFL in second partial relinquishment in 2008 (subblocks are adjacent to proposed rail line)

EPM10735 – undertook interpretations of magnetics and geology followed by ground work in the Lake Sutor area, the area proximal to the proposed rail line, and determined that the area was prospective for both replacement style disseminated Au/base metal mineralisation as well as high grade Au/Ag mineralisation. Final relinquishment occurred in 2003. A significant gold anomaly of 164 ppb was identified by RAB drilling south west of the Hill 253 magnetic anomaly. As this intersection was from the major regional redox interface and near a major ENE fault, a follow up aircore drilling program was undertaken which identified a number of mafic intrusives, including a tonalite with copper-molybdenum mineralisation indicative of porphyry copper styles. Prospecting in this area referred to as the Dacite Hill prospect located outcropping flowbanded dacite and a vesicular rhyolite, both thought to be Carboniferous Silver Hills Volcanics, previously unknown in this part of the Drummond Basin. Significant gold mineralisation was also identified in brecciated quartz veins approx. 1km to the south (Ritz prospect) with a best assay of 7.09 g/t gold. The character of the mineralisation here suggested a high level porphyry or epithermal origin, in keeping with newly identified

intrusives. This area is located on the southern margin of a large circular structure interpreted to be a caldera or impact crater. Follow up LAG and soil sampling identified this area as highly anomalous in arsenic and antimony. In 2001-2002 a total of 3560m of aircore and RC drilling was completed in 59 holes on the northern portion of the EPM. These holes tested selected regional geochemical, magnetic, structural and geological features in the Ritz and Dacite Hill prospect areas. Drilling to test a NNW structural zone on the western margin of the Dacite Hill tonalite resulted in a best intersection of 1m at 0.46g/t gold in chloritic metasiltstones. No volcanics were intersected. At the Ritz prospect, zones of quartz breccia veining were intersected with best results of 2m at 1.68 g/t gold although there was an apparent poor correlation between quartz vein occurrence and gold mineralisation.

- Relinquishment of subblocks CLER 1622 JPUZ in first partial relinquishment in 1997 (subblocks are adjacent to proposed rail line). No work was carried out on the sub blocks relinquished.
- Renewed tenure in full in 1998 for subblocks CLER 1621 EK & CLER 1622 ABCFGHLMNORSTVWXYZ
- Relinquishment of tenure including subblocks CLER 1621 EK & CLER 1622 ABCFGHLMNORSTVWXYZ in final relinquishment in 2003 (subblocks are adjacent to proposed rail line).

EPM 10425 - targeting exploration towards gold mineralisation, in particular epithermal style precious metal deposits. Following the compilation of various air photo interpretations, geochemical, airborne magnetics and radiometrics for the EPM area, a number of reconnaissance targets were chosen for ground reconnaissance and further geochemical sampling where necessary. The reconnaissance work carried out did not identify any outcropping mineralisation. The majority of their area contained sequences which are not regarded as prospective for epithermal styles of mineralisation as at Twin Hills and Yandan. The majority of the western area was considered unprospective and was relinquished.

- Relinquishment of subblocks CLER 1620 ABCDEFGHJK in first partial relinquishment in 1996 (subblocks are adjacent to proposed rail line)
- Relinquishment of subblocks CLER 1621 ABCFGH in first partial relinquishment in 1996 (subblocks are adjacent to proposed rail line)

EPM 4280 - exploration for gold mineralisation. In reports it was stated “the lack of gold response in stream-sediment samples, rockchip samples and reconnaissance soil samples reported for the target area...gave little encouragement for further grass-roots exploration of the area. Tenure...was formally relinquished.”

- Relinquishment of tenure including subblocks CLER 1548 WXYZ in relinquishment in 1987 (subblocks are adjacent to proposed rail line)
- Relinquishment of tenure including subblocks CLER 1549 QRVW in relinquishment in 1987 (subblocks are adjacent to proposed rail line)
- Relinquishment of tenure including subblocks CLER 1620 CDEHJKMNO in relinquishment in 1987 (subblocks are adjacent to proposed rail line)

EPM 5169 – stated in 1988 they had discovered an anomaly whereby they had located significant gold mineralisation in the southern portion of their lease. However, they relinquished subblocks in the middle portion of their lease which coincides with the area of the proposed rail line. EPM 5169 was amalgamated with EPM 4814 to become EPM 8693 which is discussed later in this report.

- Relinquishment of subblocks CLER 1620 CDEHJKNOP in second partial relinquishment in 1990 (subblocks are adjacent to proposed rail line)



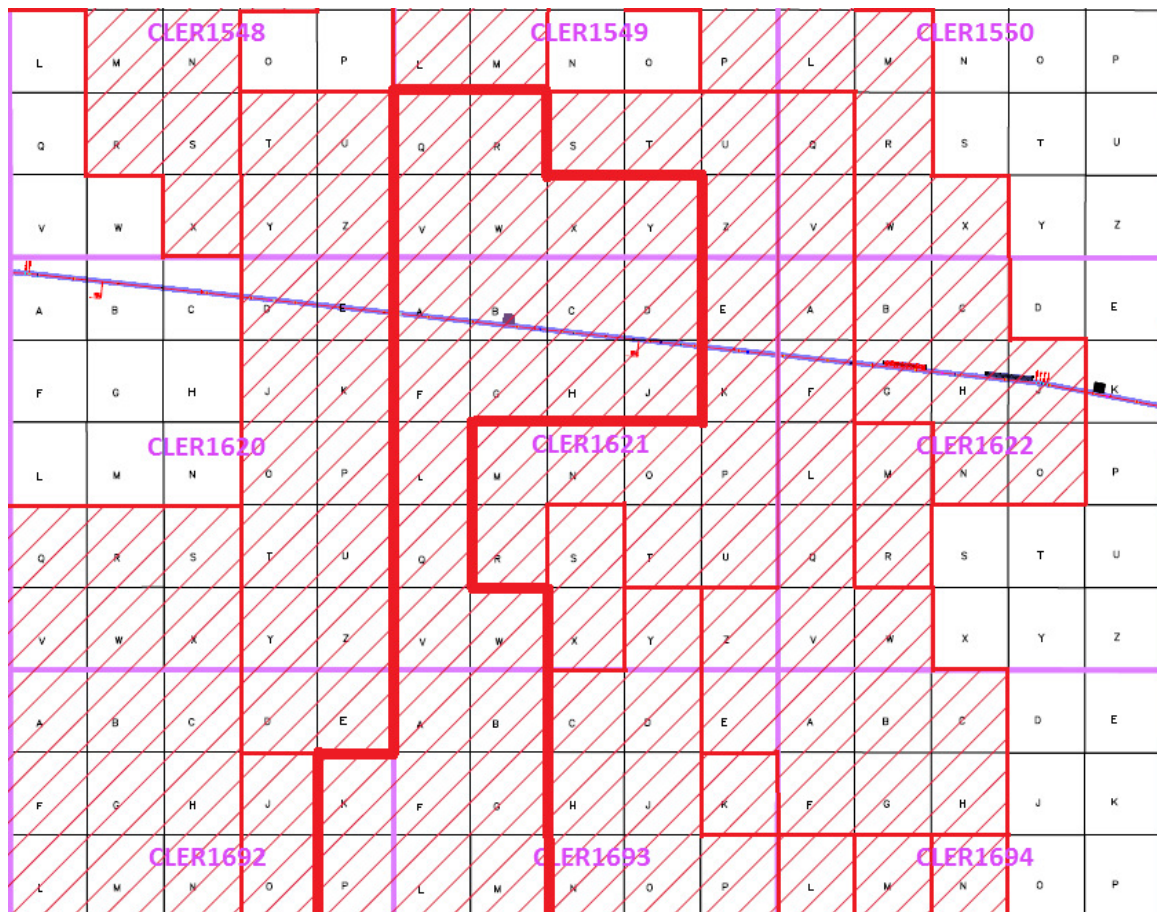
EPM 2362 – No information on this tenure was found on IRTM, QDEX or other internet sources.

EPC 809, EPP 239, EPP 69, EPP 76 – these tenures were not deemed relevant. Reports were analysed initially but no relevant information could be extracted.

## 5.2.2 Summary of Previous Work on: EPM 17703 – Zamia Resources Pty Ltd (Granted)

Figure 5.6 shows these EPM's block locations.

**Figure 5.6 – EPM 17703 blocks and subblocks**



Previous exploration over these two tenements which was analysed is outlined in the table which follows, Table 5.2. The previous EPM results have also been summarised.

**Table 5.2 – Previous Exploration Occurring Over EPM 17703**

ID	Tenure Type	Status	Reporting Period
EPM17703	Mineral	Granted	2010-Present
EPM12012	Mineral	Relinquished area proximal to proposed rail line	2000-09
EPM10425	Mineral	Relinquished	1990-99
EPM2632	Mineral	No information	1980-89
EPM8693	Mineral	Relinquished area proximal to proposed rail line	1990-99
EPM4161	Mineral	Relinquished	1980-89
EPM4814	Mineral	Amalgamated/Relinquished	1980-89
EPM5234	Mineral	Relinquished	1980-89
EPM1481	Mineral	Relinquished	1970-79
EPC809	Coal	Relinquished	2000-09
EPP313	Petroleum	Relinquished	1980-89
EPP208	Petroleum	Relinquished	1970-79
EPP239	Petroleum	Relinquished	1970-79
EPP69	Petroleum	Relinquished	1950-59

EPM 12012 – Relinquished subblocks proximal to proposed rail line in compliance with existing permit conditions in order to concentrate exploration on areas they consider having higher resource potential.

- Relinquishment of subblocks CLER 1621 ABCDFGHJLQVW in partial relinquishment in 1990 (subblocks are adjacent to proposed rail line)

EPM 8693 – An amalgamation of EPM 5169 and EPM 4818. Their reports stated that they did not outline any targets warranting further exploration within the relinquished areas.

- Relinquishment of subblocks CLER 1549 VWX in partial relinquishment in 1994 (subblocks are proximal to proposed rail line)
- Relinquishment of subblocks CLER 1621 EKL in partial relinquishment in 1995 (subblocks are adjacent to proposed rail line)
- Relinquishment of subblocks CLER 1622 AFL in partial relinquishment in 1994 (subblocks are adjacent to proposed rail line)
- Relinquishment of subblocks CLER 1621 DJMNOPQRTUVZ in partial relinquishment in 1996 (subblocks are adjacent to proposed rail line)
- Relinquishment of subblock CLER 1622 Q in partial relinquishment in 1996 (subblock is proximal to proposed rail line)

EPM 4161 – report stated that much of the area within the tenement remains untested but without an indication of significant gold mineralisation within this structural and/or stratigraphic regime elsewhere in the region, further exploration in this area is not warranted.

- Relinquishment of subblock CLER 1621 “ALL” in first and final relinquishment in 1986 (subblock is adjacent to proposed rail line)
- Relinquishment of subblock CLER 1622 AFLQ in first and final relinquishment in 1986 (subblock is adjacent to proposed rail line)

EPM 4814 – EPM 4814 was amalgamated with EPM 5169 to become EPM 8693 which has already been discussed. However, they had one earlier relinquishment relevant to the area.

- Relinquishment of subblock CLER 1621 CFGH in relinquishment in 1989 (subblock is adjacent to proposed rail line)

EPM 5234 – work completed over the relinquished ground include stream sediment sampling and geological reconnaissance. No significant gold mineralisation was detected.

- Relinquishment of subblock CLER 1621 AB in relinquishment in 1990 (subblock is adjacent to proposed rail line)

EPM 10425, EPM 2632 – previously discussed.

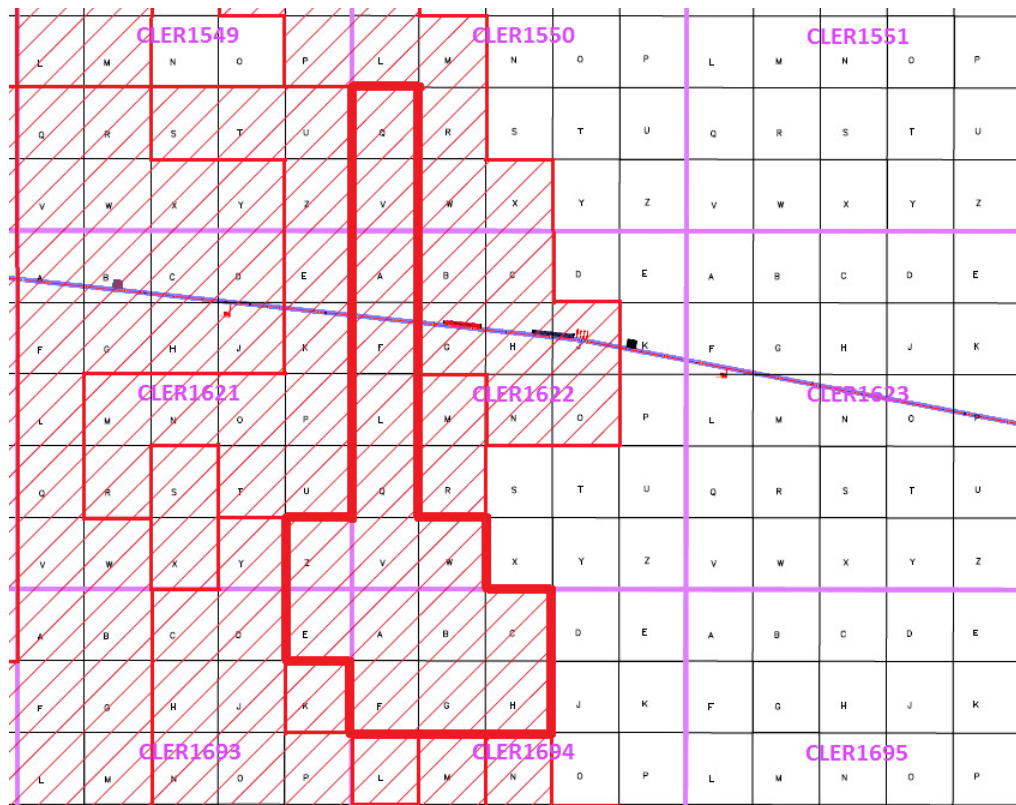
EPM 1481 – Gypsum exploration, not deemed relevant.

EPC 313, EPP 208 – these tenures were not deemed relevant. Reports were analysed initially but no relevant information could be extracted.

### 5.2.3 Summary of Previous Work on: EPM 17641 – Zamia Resources Pty Ltd (Granted)

Figure 5.7 shows these EPM's block locations.

**Figure 5.7 – EPM 17641 blocks and subblocks**



Previous exploration over these two tenements which was analysed is outlined in the table which follows, Table 5.3. The previous EPM results have also been summarised.

**Table 5.3 – Previous Exploration Occurring Over EPM 17641**

ID	Tenure Type	Status	Reporting Period
EPM17641	Mineral	Granted	2010-Present
EPM14588	Mineral	Relinquished area proximal to proposed rail line	2000-09
EPM10735	Mineral	Relinquished	1990-99
EPM8693	Mineral	Relinquished area proximal to proposed rail line	1990-99
EPM4161	Mineral	Relinquished	1980-89
EPM4814	Mineral	Amalgamated/Relinquished	1980-89
EPM1481	Mineral	Relinquished	1970-79
EPC809	Coal	Relinquished	2000-09
EPP313	Petroleum	Relinquished	1980-89
EPP208	Petroleum	Relinquished	1970-79
EPP239	Petroleum	Relinquished	1970-79
EPP69	Petroleum	Relinquished	1950-59

All historical reports relating to this EPM have been previously discussed with none indicating any significant and/or viable precious metal deposits Present in the area.

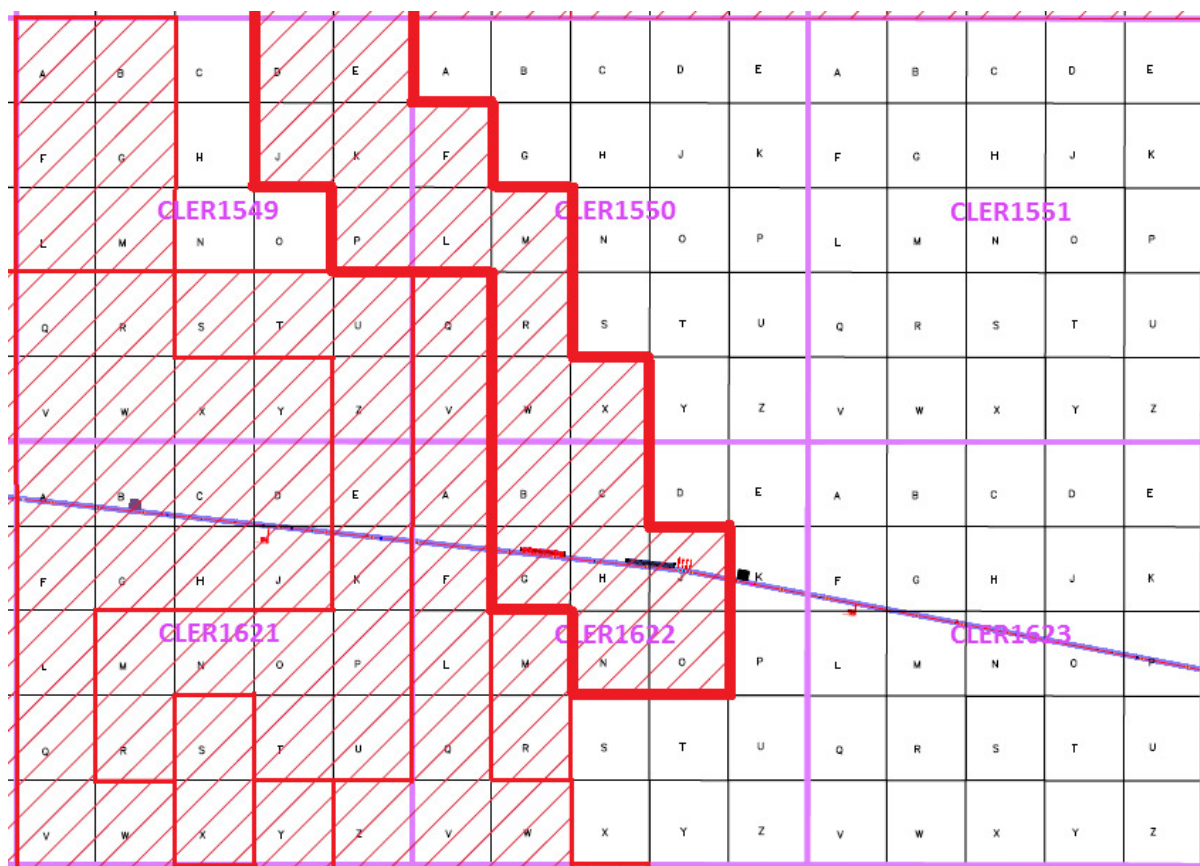
#### **5.2.4 Summary of Previous Work on: EPM 14934 –Drummond West Pty Ltd (Granted)**

Figure 5.8 shows these EPM's block locations.

Previous exploration over these two tenements which was analysed is outlined in the table which follows, Table 5.4. The previous EPM results have also been summarised.



**Figure 5.8 – EPM 14934 blocks and subblocks**



**Table 5.4 – Previous Exploration Occurring Over EPM 14934**

ID	Tenure Type	Status	Reporting Period
EPM14934	Mineral	Granted	2000-09
EPM10735	Mineral	Relinquished	1990-99
EPM8400	Mineral	No information	1990-99
EPM4873	Mineral	Relinquished	1980-89
EPM1481	Mineral	Relinquished	1970-79
EPC809	Coal	Relinquished	2000-09
EPC808	Coal	Relinquished	2000-09
EPP313	Petroleum	Relinquished	1980-89
EPP208	Petroleum	Relinquished	1970-79
EPP239	Petroleum	Relinquished	1970-79
EPP69	Petroleum	Relinquished	1950-59

EPM 8400 –EPM 8400 was granted in October 1991 and was relinquished in October 1994. No exploration reports were submitted.

EPM 4873 – No evidence of anomalous gold mineralisation was located by their 10 hole drill program. All holes finished in the Suttor Formation and did not intersect pre-Tertiary basement. Partial relinquishment report lodged 1990 after determined no further work was warranted. EMP 4873 was surrendered to a new exploration permit EMP 8400.

- Relinquishment of subblock CLER 1623 DJOT in relinquishment in 1989 (subblock is adjacent to proposed rail line)
- Relinquishment of subblock CLER 1622 R in relinquishment in 1990 (subblock is adjacent to proposed rail line)
- Relinquishment of subblock CLER 1623 ABCFGH in relinquishment in 1990 (subblock is adjacent to proposed rail line)

EPM 14934 – Current tenure holders. Partial relinquishment of subblocks in 2008 stating they are not considered prospective for significant mineralisation due to the lack of favourable geology or accessibility issues due to broad alluvial plains and braided river channels of the Suttor River.

- Relinquishment of subblock CLER1622 EKP in relinquishment in 2008 (subblock is adjacent to proposed rail line)
- Relinquishment of subblock CLER1623 ABCDEFGHJKLMNOP in relinquishment in 2008 (subblock is adjacent to proposed rail line)

EPM 10735, EPM 1481, EPC 809, EPC 808, EPP 313, EPP 208, EPP 239, EPP 69 have already been discussed.

## **5.3 Area 3 Eastern Branch**

### **Area 3 Tenement Holders Summarised**

The EPC's, EPM's and EPP's will be discussed separately for Area 3 Eastern Branch, as there are many current and historical tenements which cover this area; they have also been broken down chronologically.

The Current EPC tenements which would be affected by the proposed Adani rail easement in Area 3 Eastern Branch are from east to west, as follows:

EPC 1234 – Queensland Coking Coal Pty Ltd

EPC 1069 – Carabella Resources Ltd

EPC 1244 – Energy Minerals Pty Ltd

EPC 2135 – Carabella Resources Ltd

EPC 2188 – Carabella Resources Ltd

EPC 2163 – Queensland Coal Investments Pty Ltd

A map showing these tenements is included as Figure 5.9.

The Current EPM tenements which would be affected by the proposed Adani rail easement in Area 3 Eastern Branch are from east to west, as follows:

EPM 19193 – GBM Resources Ltd

EPM 19292 – Goldfields Australasia Pty Ltd

EPMa 19063 – Drummond West Pty Ltd

EPM 14928 – Drummond West Pty Ltd

A map showing these tenements follows as Figure 5.36.

The Current EPP tenements which would be affected by the proposed Adani rail easement in Area 3 Eastern Branch are from east to west, as follows:

EPP 814 – Eureka Petroleum Pty Ltd

EPP 793 – Diamond Creek Coal Pty Ltd

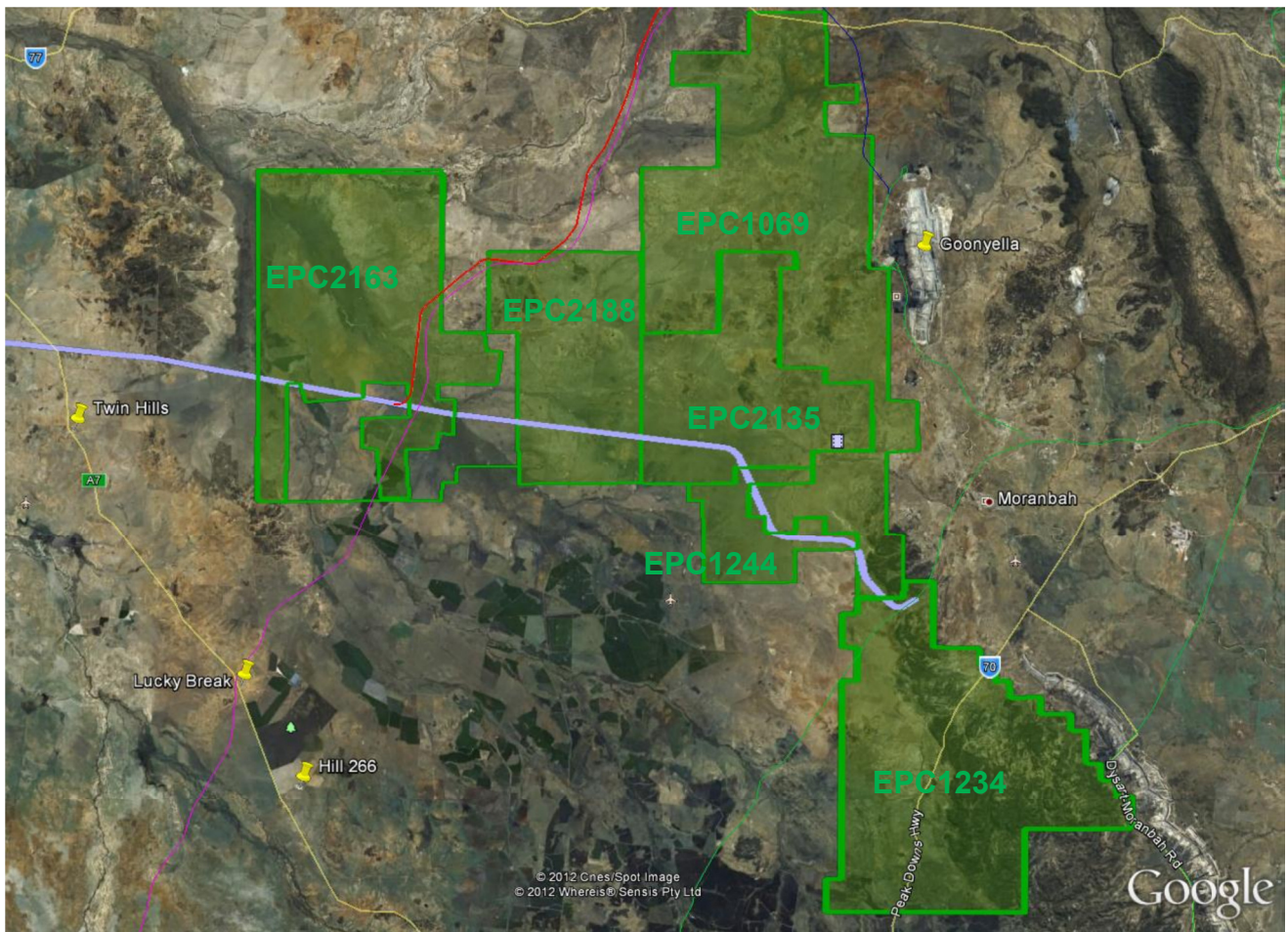
A map showing these tenements follows as Figure 5.54.



## EPCs Incurred in Area 3 Eastern Branch

A map of the EPC tenements affected by the proposed rail line is included as Figure 5.9. The shaded areas are those covered by historic reports.

**Figure 5.9 – Current EPC's shading indicates areas covered by historic reports**



### 5.3.1 Summary of Previous Work on EPC1234 – Queensland Coking Coal Pty Ltd

*Lodged 12/02/2008, Granted 22/12/2009, Expires 21/12/2014*

The previous tenement holders over the current lease area are as follows.

#### 2000 - Present

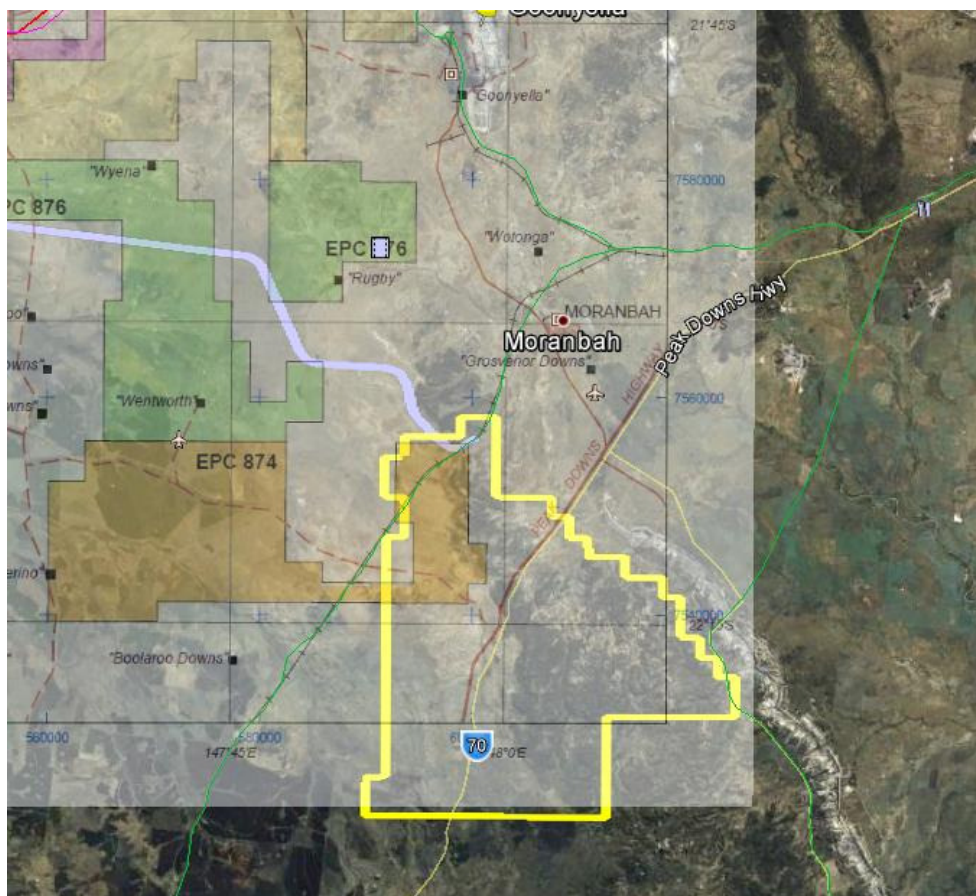
EPC874 - BHP Billiton Minerals Pty Ltd

Report No:CR39777

Covers: South western portion of EPC1244, most of EPC2135, northern half of EPC2188 and central north section of EPC1069 (Figure 5.10).

EPC's 874, 876, 877 and 878 were surrendered on 6 April 2005. Program included 13 holes drilled for a total of 2641m. Drilling failed to intersect coal bearing basins below tertiary cover, gravity lows explained by weathered metamorphics, volcanics and thickening of tertiary cover.

**Figure 5.10 – Historic EPC874 underlay Current EPC1234 (yellow outline)**





## 1960 - 1969

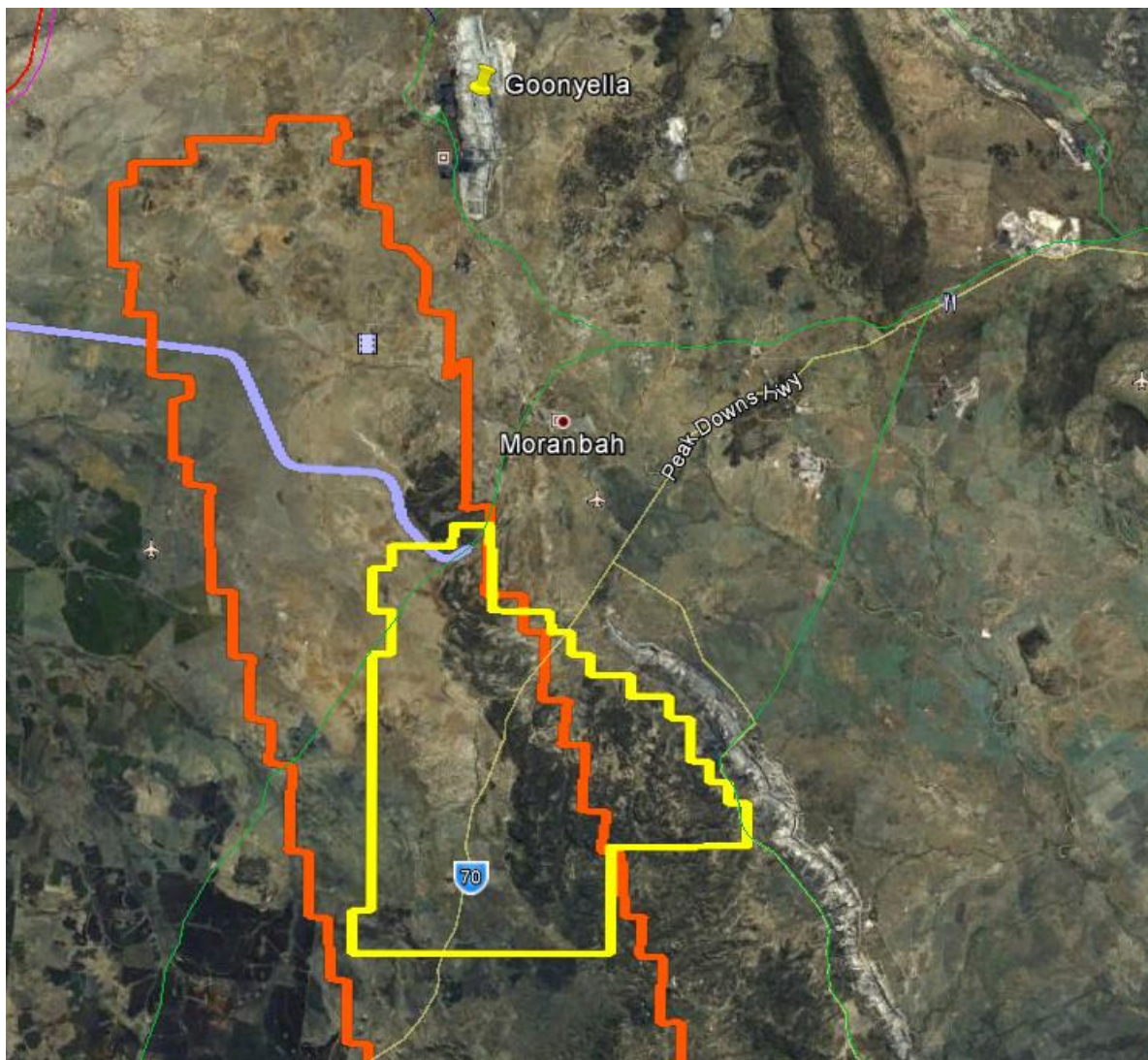
EPC13 - Clutha Development Pty Ltd

Report No:CR1845

Covers: Area 2 from report overlies north western portion of EPC1234, almost all of EPC2135 and EPC1244 and south half of EPC1069 (Figure 5.11).

Areas 1 and 2 are considered to be of no economic value. Conclusion based on negative geological findings in area 1 and test drilling in area 2 producing evidence of 27 feet of non-coking quality coal.

**Figure 5.11 – Historic EPC13 underlay Current EPC1234 (yellow outline)**





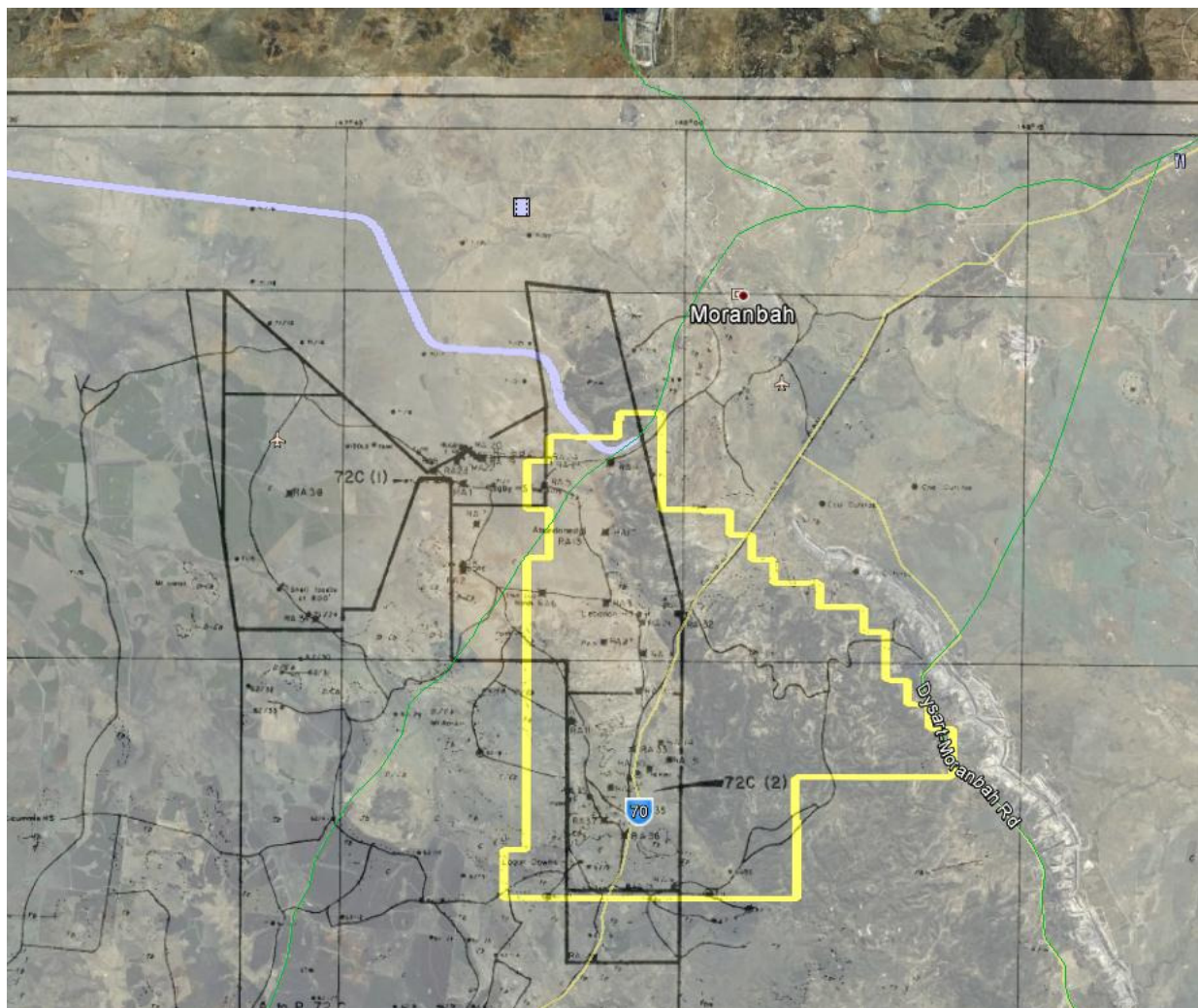
EPC72 - CRA Exploration Pty Ltd transferred to Blair Athol Coal Pty Ltd (1970)

Report No: CR3902, 3815, 3816, 4924, 3818, 4428, 3817, 4198

Covers: Covers southern rail corridor portion of EPC1069, western portion EPC1234 and surrounds EPC1244 (Figure 5.12)

Program included 2 rotary open holes completed for a total of 980 feet drilled. No coal or carbonaceous material encountered in either hole. No further work was proposed.

**Figure 5.12 – Historic EPC72 underlay Current EPC1234 (yellow outline)**



### 5.3.2 Summary of Previous Work on EPC1069- Carabella Resources Ltd

*Lodged 02/08/2006, Granted 04/06/2010, Expires 03/06/2015*

The previous tenement holders over the current lease area are as follows.

#### 2000 - Present

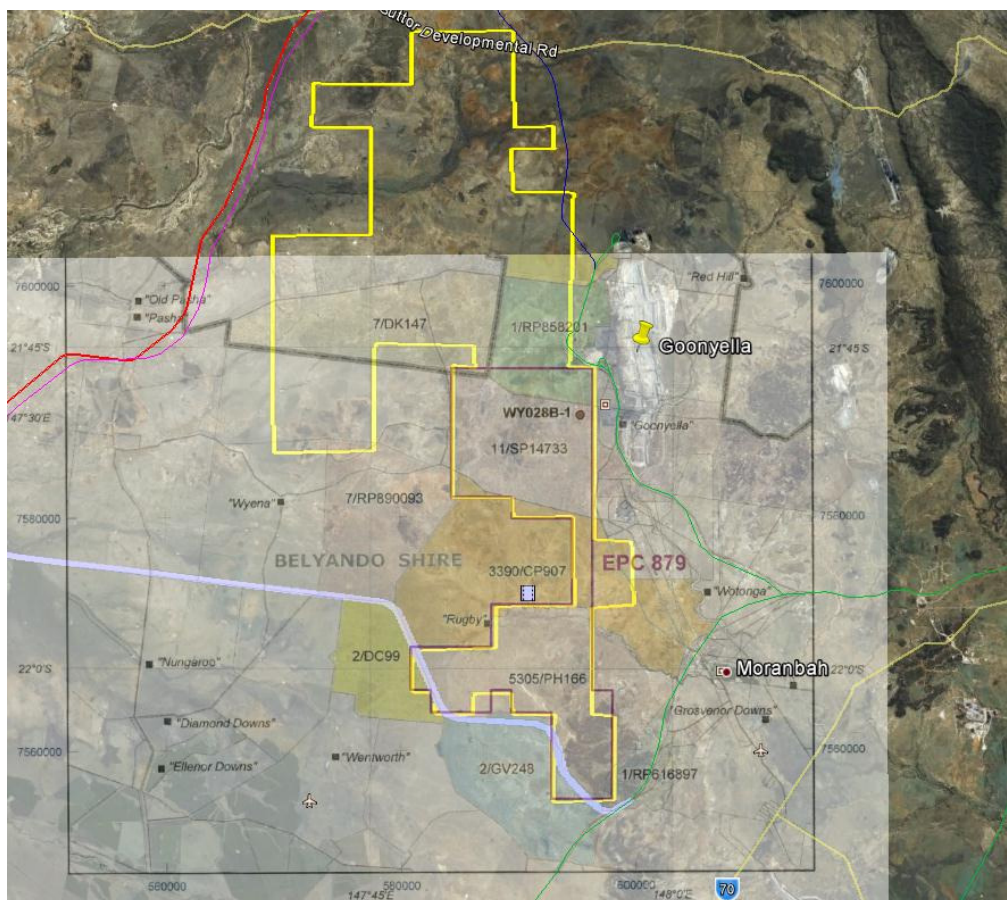
EPC879 - BHP Billiton Minerals Pty Ltd

Report No: CR42859

Covers: Entire southern portion of EPC1069 (Figure 5.13)

EPCs 879 and 875 were surrendered on 9<sup>th</sup> March 2006. Program included 3 holes drilled for a total of 752m. No coal was intersected downgrading potential of Wyena project to host significant coal seams at economic depths.

**Figure 5.13 – Historic EPC879 underlay Current EPC1069 (yellow outline)**





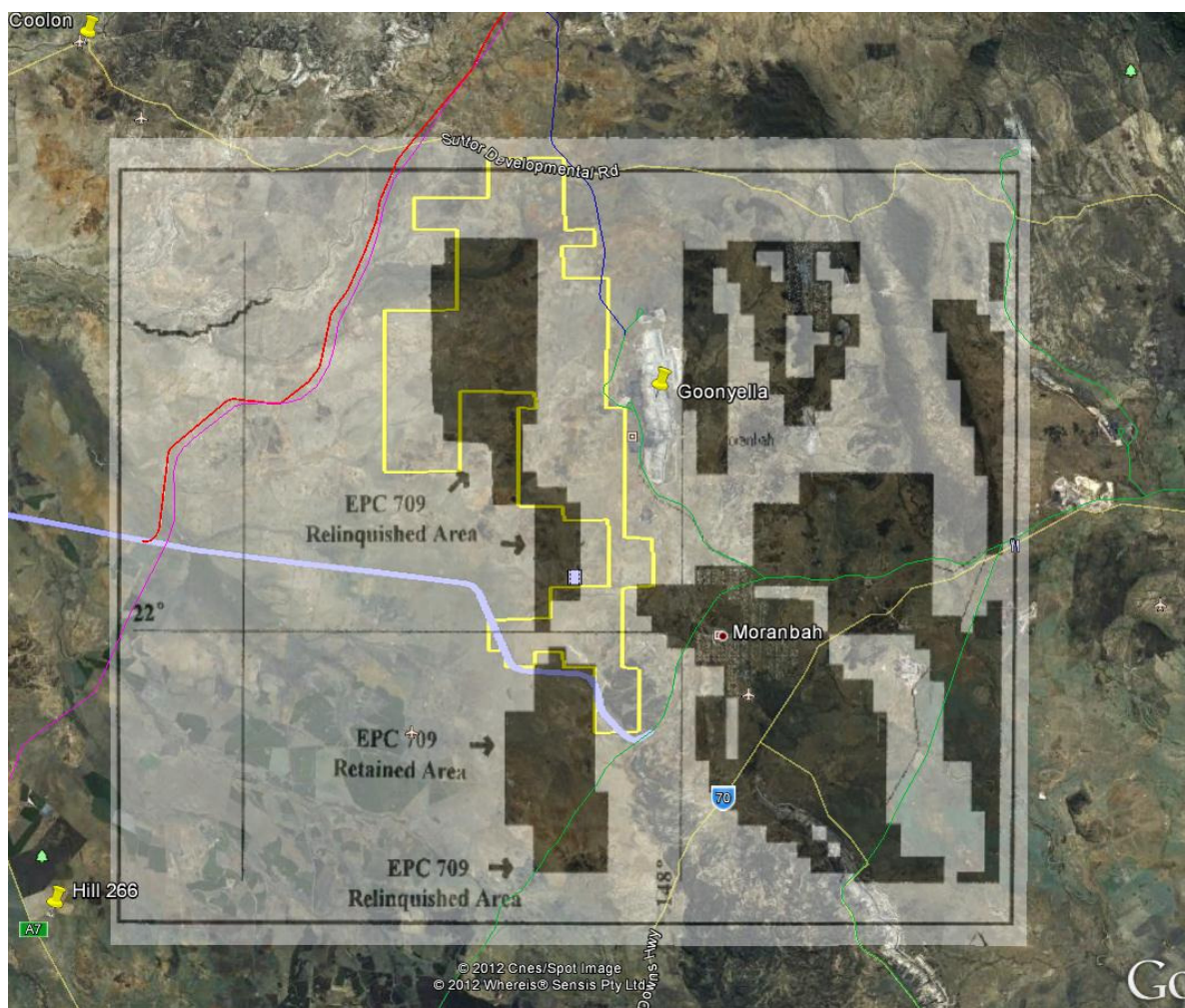
EPC709 - QCOAL Pty Ltd

Report No: CR32585, 39766, 50544

Covers: Area to north of EPC1244, south of EPC1069 and east of EPC2135 (Figure 5.14).

Partial relinquishment on the 14<sup>th</sup> December, 2000. Relinquished 128 sub blocks following review of geology and coal resources. The relinquished area was considered poorly prospective and likely to require very high cost exploration for discovery.

**Figure 5.14 – Historic EPC709 underlay Current EPC1069 (yellow outline)**





## 1990 - 1999

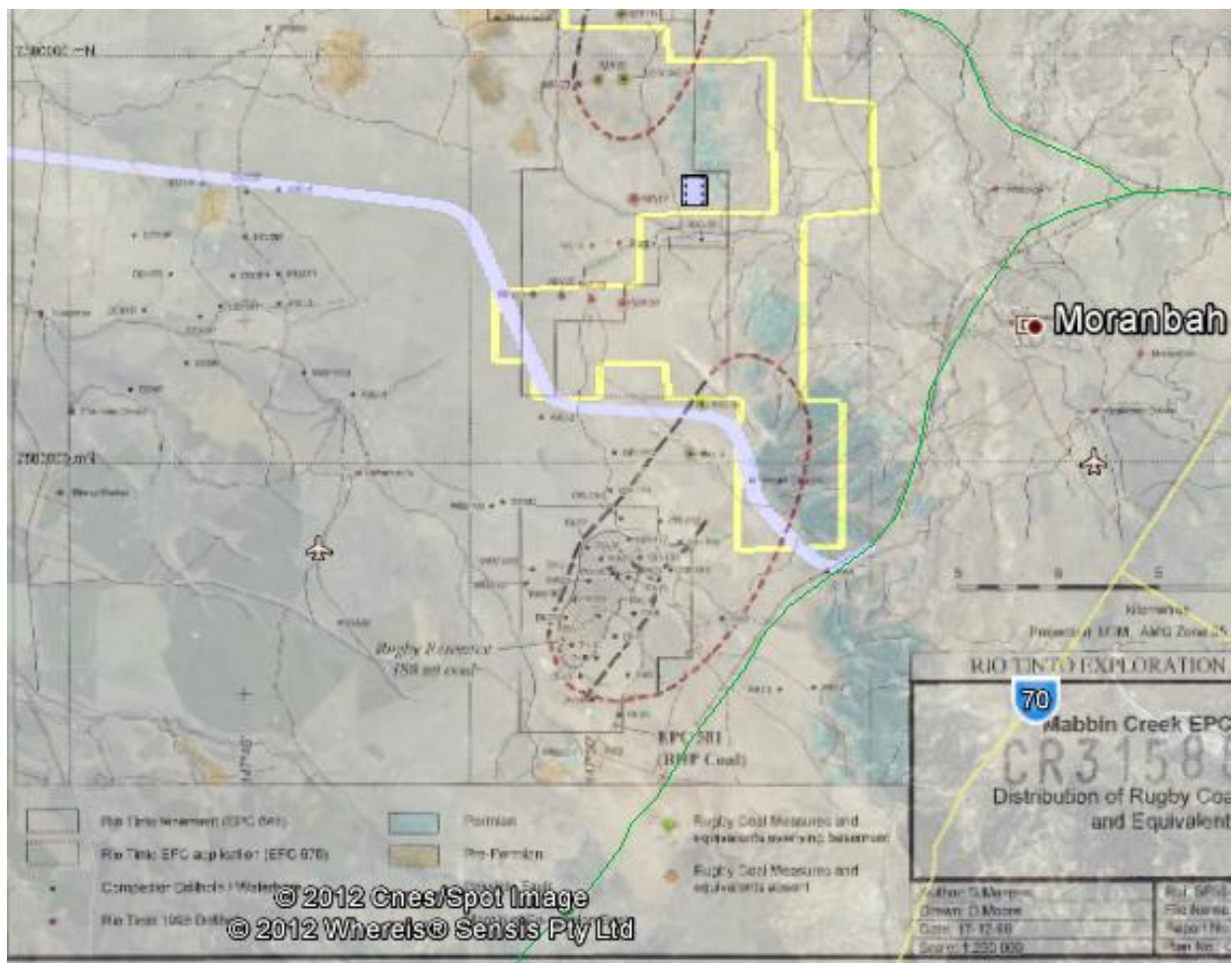
EPC645- Rio Tinto Exploration Pty Ltd

Report No: CR31588

Covers: Mabbins Creek Eastern side of EPC2135 and south western area of EPC1069 (Figure 5.15)

Decision to relinquish licence was made in December 1998. Exploration program included data compilation, gravity survey, drilling of 25 exploration holes for a total of 3250m, wireline logging of 5 of the previous mentioned holes, petrological and palynological analyses. Target deemed not sufficiently attractive, decision was made to relinquish.

**Figure 5.15 – Historic EPC645 underlay Current EPC1069 (yellow outline)**



## 1960 - 1969

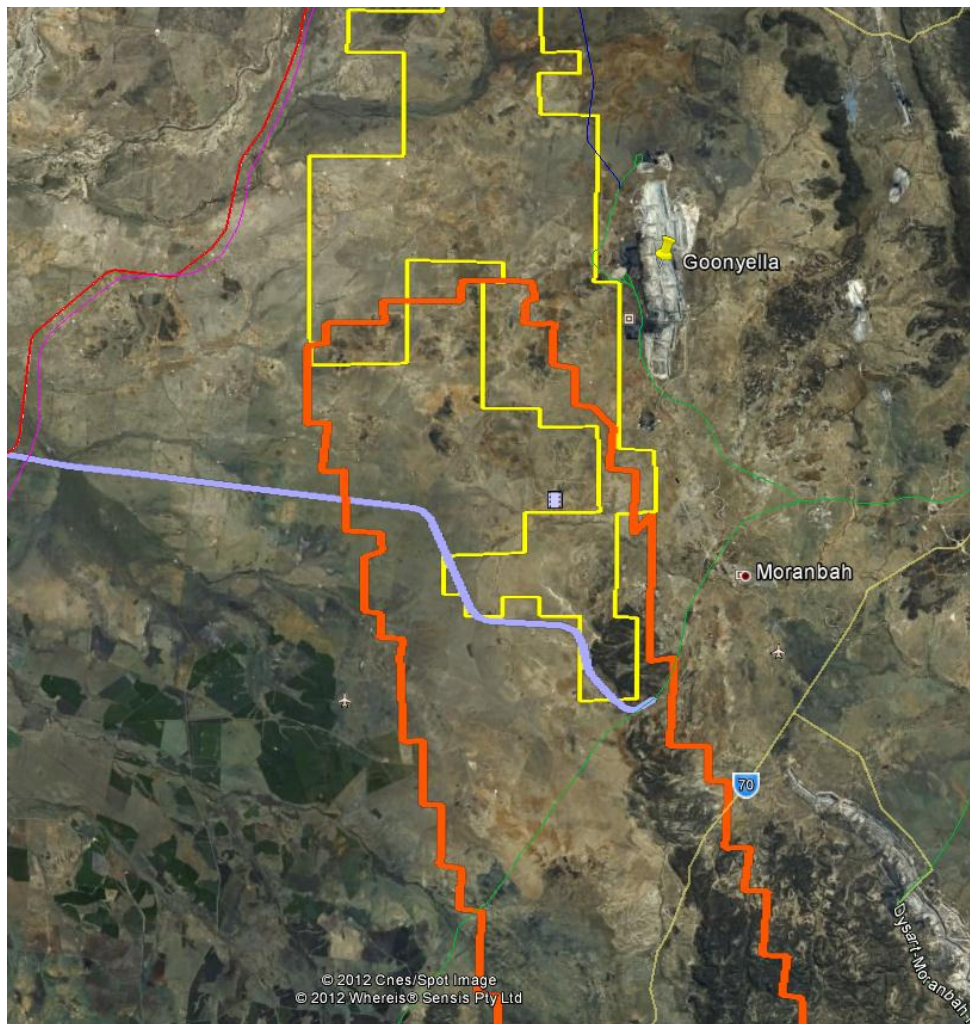
EPC13 - Clutha Development Pty Ltd

Report No: CR1845

Covers: Area 2 from report overlies north western portion of EPC1234, almost all of EPC2135 and EPC1244 and south half of EPC1069 (Figure 5.16)

Areas 1 and 2 are considered to be of no economic value. Conclusion based on negative geological findings in area 1 and test drilling in area 2 producing evidence of 27 feet of non-coking quality coal. Program included two cored holes proximal to Rugby Bore confirmed presence of coal.

**Figure 5.16 – Historic EPC13 underlay Current EPC1069 (yellow outline)**





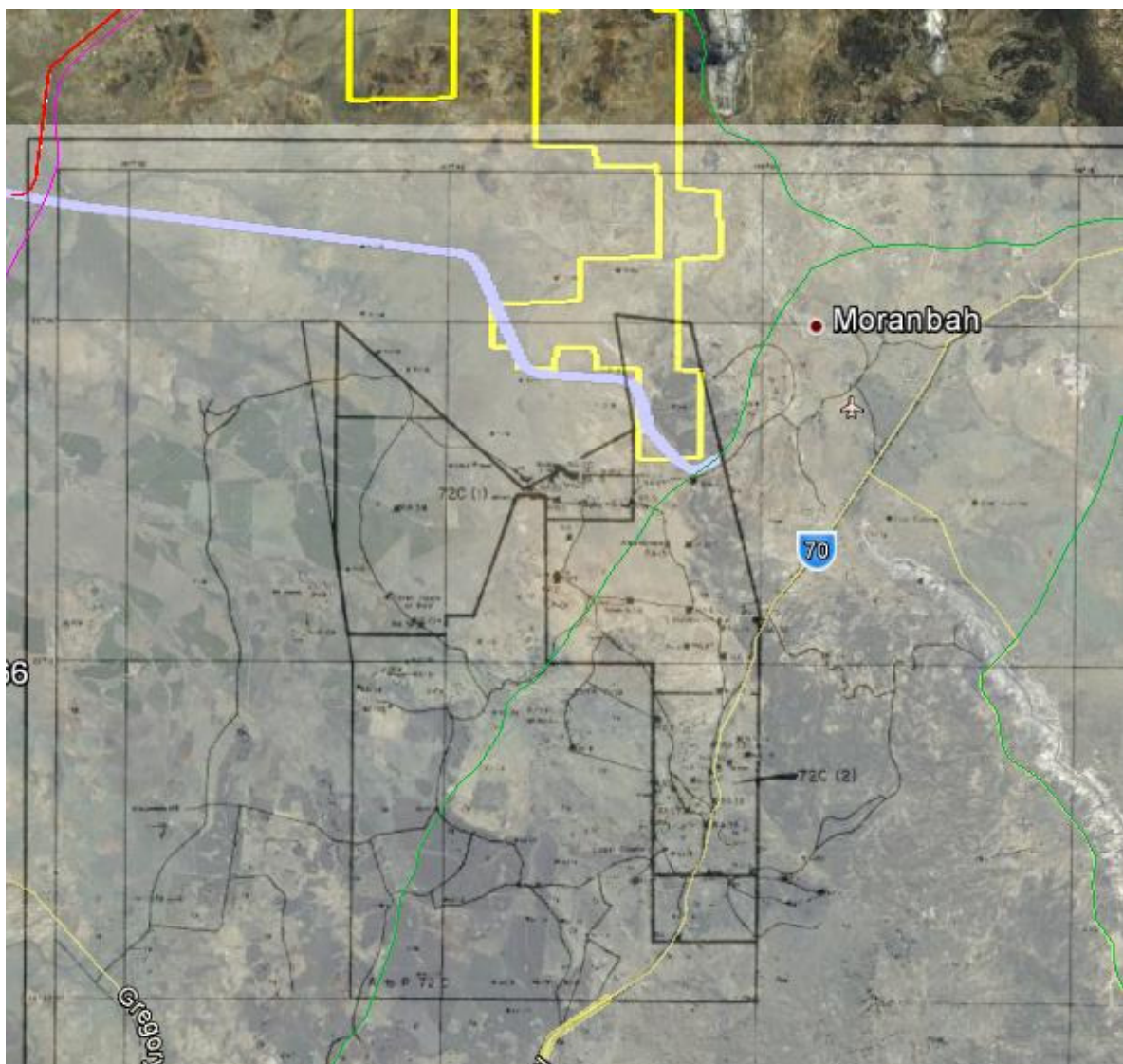
EPC72 - CRA Exploration Pty Ltd transferred to Blair Athol Coal Pty Ltd (1970)

Report No: CR3902, 3815, 3816, 4924, 3818, 4428, 3817, 4198

Covers: Covers southern rail corridor portion of EPC1069, western portion EPC1234 and surrounds EPC1244 (Figure 5.17)

Program included 2 rotary open holes completed for a total of 980 feet drilled. No coal or carbonaceous material encountered in either hole. No further work was proposed.

**Figure 5.17 – Historic EPC72 underlay Current EPC1069 (yellow outline)**





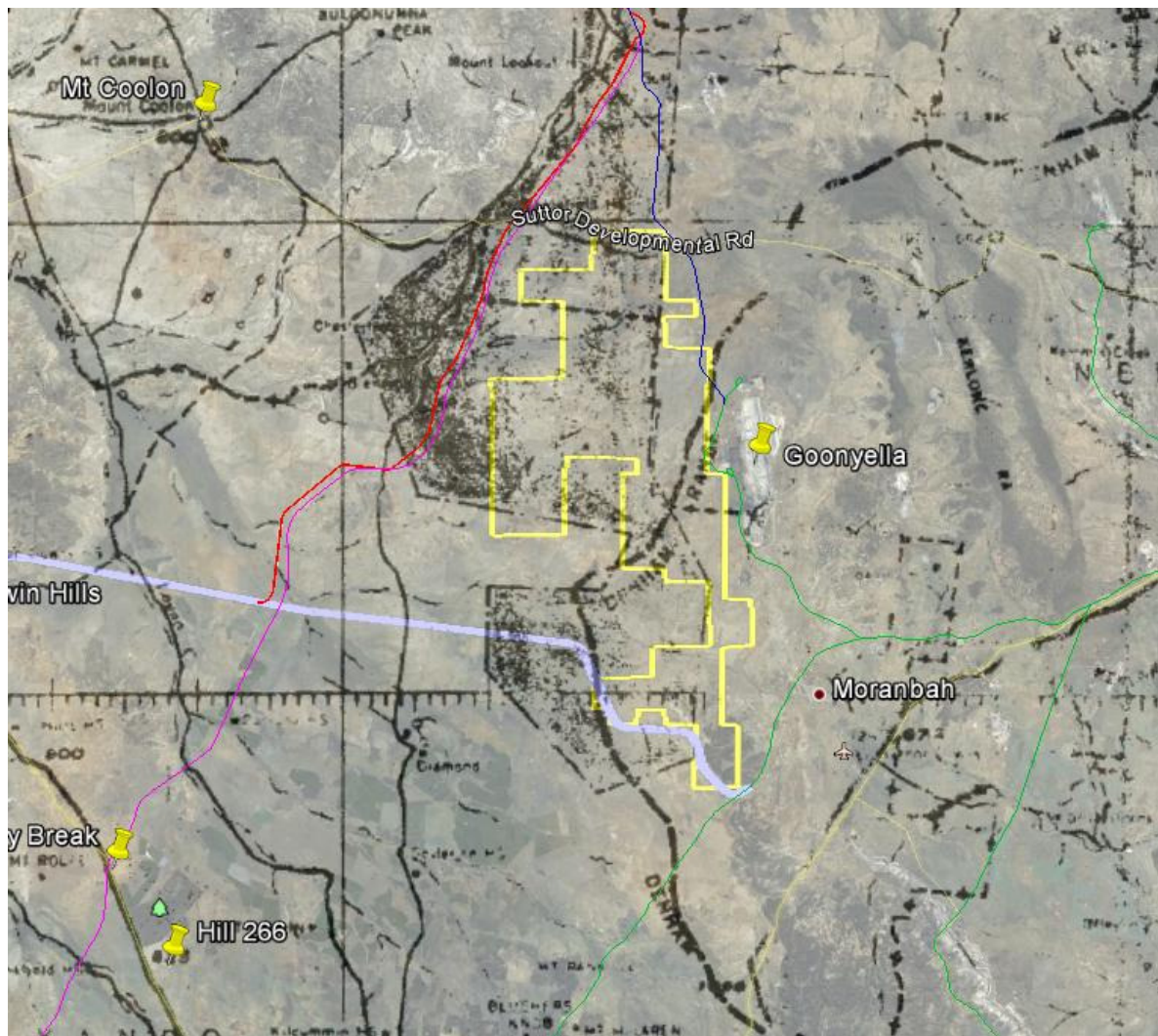
EPC49 - St. Joseph Phelps Dodge Exploration Pty Ltd

Report No: CR2790, 2698

Covers: Sutor River Area. Western side of EPC1069, EPC1244, EPC2135 rail portion.  
(Figure 5.18)

ATP surrendered on 30<sup>th</sup> April 1969. Program included field mapping and drilling of 18 rotary holes totalling 9,722 feet. No coal seams were intersected in the drilling.

**Figure 5.18 – Historic EPC49 underlay Current EPC1069 (yellow outline)**



### 5.3.3 Summary of Previous Work on EPC1244 – Energy Minerals Pty Ltd

*Lodged 22/02/2008, Granted 31/05/2011, Expires 30/05/2016*

The previous tenement holders over the current lease area are as follows.

#### 2000 - Present

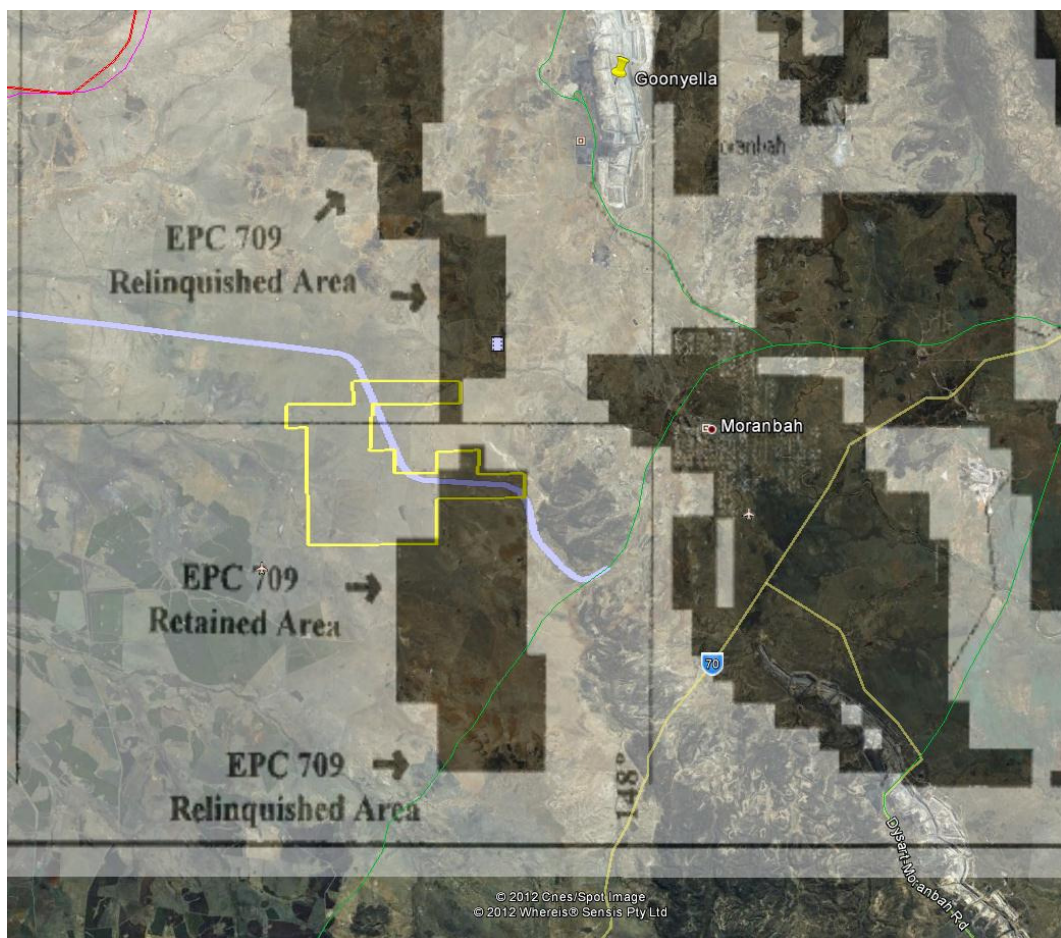
EPC709 - QCOAL Pty Ltd

Report No: CR32585, 39766, 50544

Covers: Area to north of EPC1244, south of EPC1069 and east of EPC2135 (Figure 5.19)

Partial relinquishment on the 14<sup>th</sup> December, 2000. Relinquished 128 sub blocks following review of geology and coal resources. The relinquished area was considered poorly prospective and likely to require very high cost exploration for discovery.

**Figure 5.19 – Historic EPC709 underlay Current EPC1244 (yellow outline)**





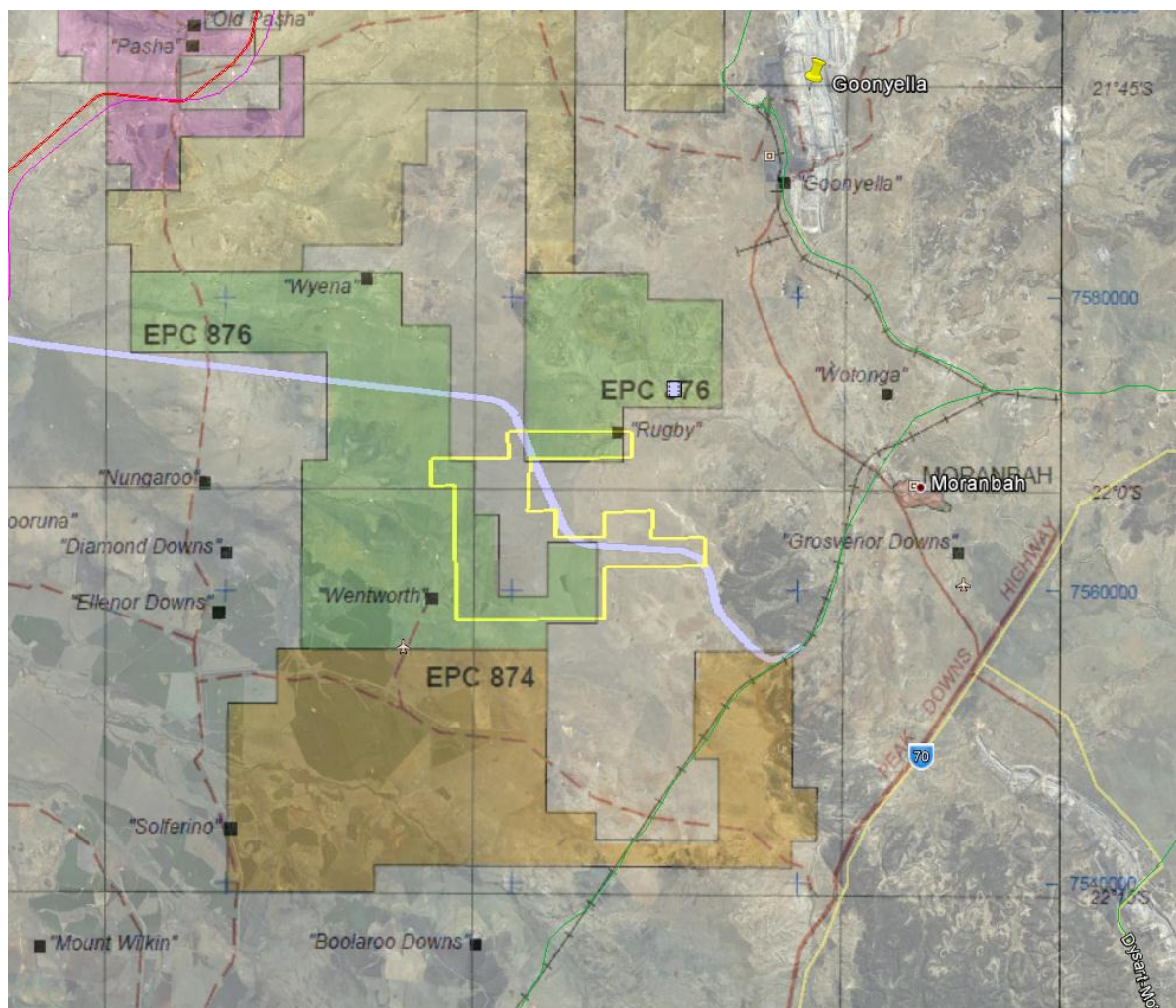
EPC876 - Billiton Minerals Pty Ltd

Report No: CR39777

Covers: South western portion of EPC1244, most of EPC2135, northern half of EPC2188 and central north section of EPC1069 (Figure 5.20).

EPC's 874, 876, 877 and 878 were surrendered on 6 April 2005. Program included 13 holes drilled for a total of 2641m. Drilling failed to intersect coal bearing basins below tertiary cover, gravity lows explained by weathered metamorphics, volcanics and thickening of tertiary cover.

**Figure 5.20 – Historic EPC876 underlay Current EPC1244 (yellow outline)**





Report No: CR54425

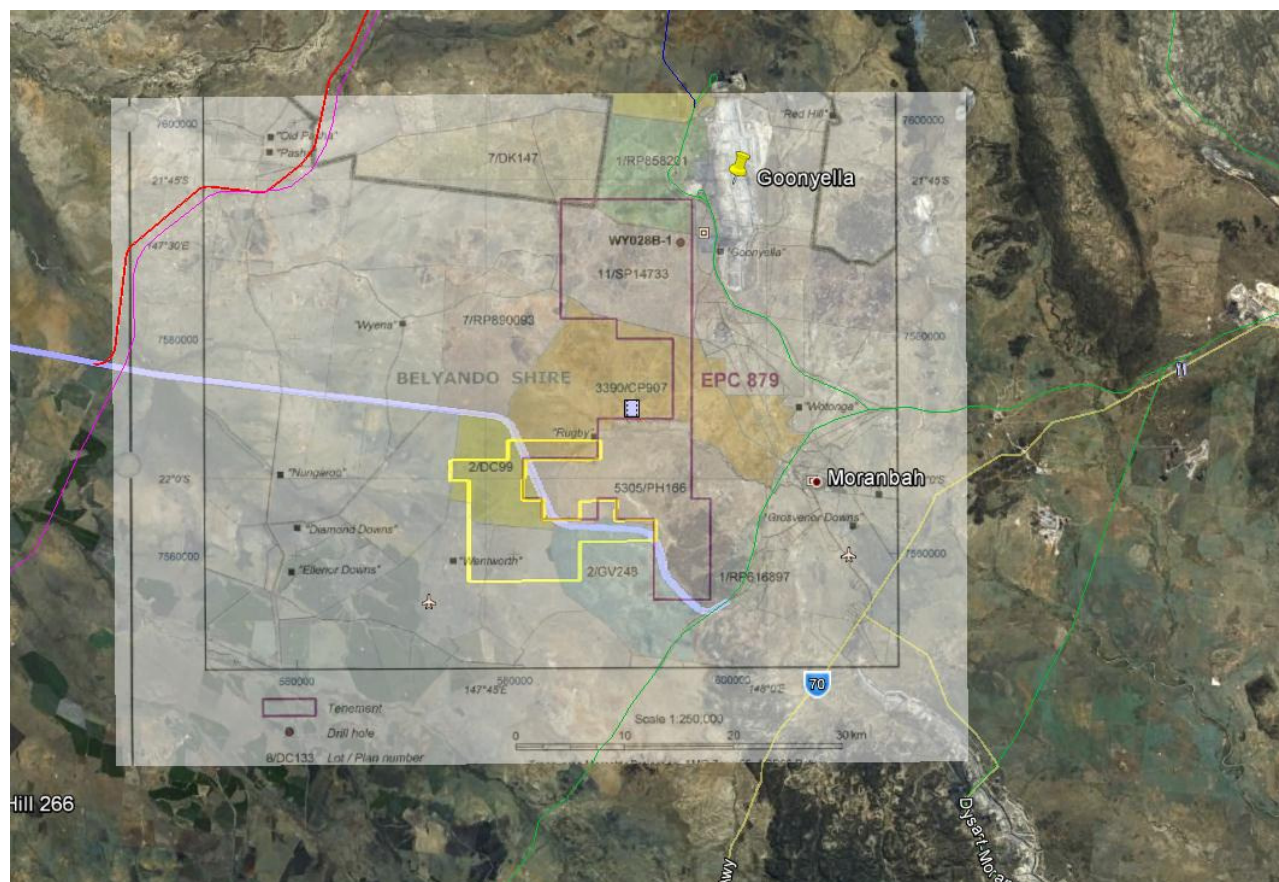
Nil Exploration, Nil Disturbance.

Report No: CR42859

Covers: Entire southern portion of EPC1069 (Figure 5.21)

EPCs 879 and 875 were surrendered on 9<sup>th</sup> March 2006. Program included 3 holes drilled for a total of 752m. No coal was intersected downgrading potential of Wyena project to host significant coal seams at economic depths.

**Figure 5.21 – Historic EPC879 surrounds Current EPC1244 (yellow outline)**



EPC1088 - *unknown*

No record on QDEX as of August 2012.

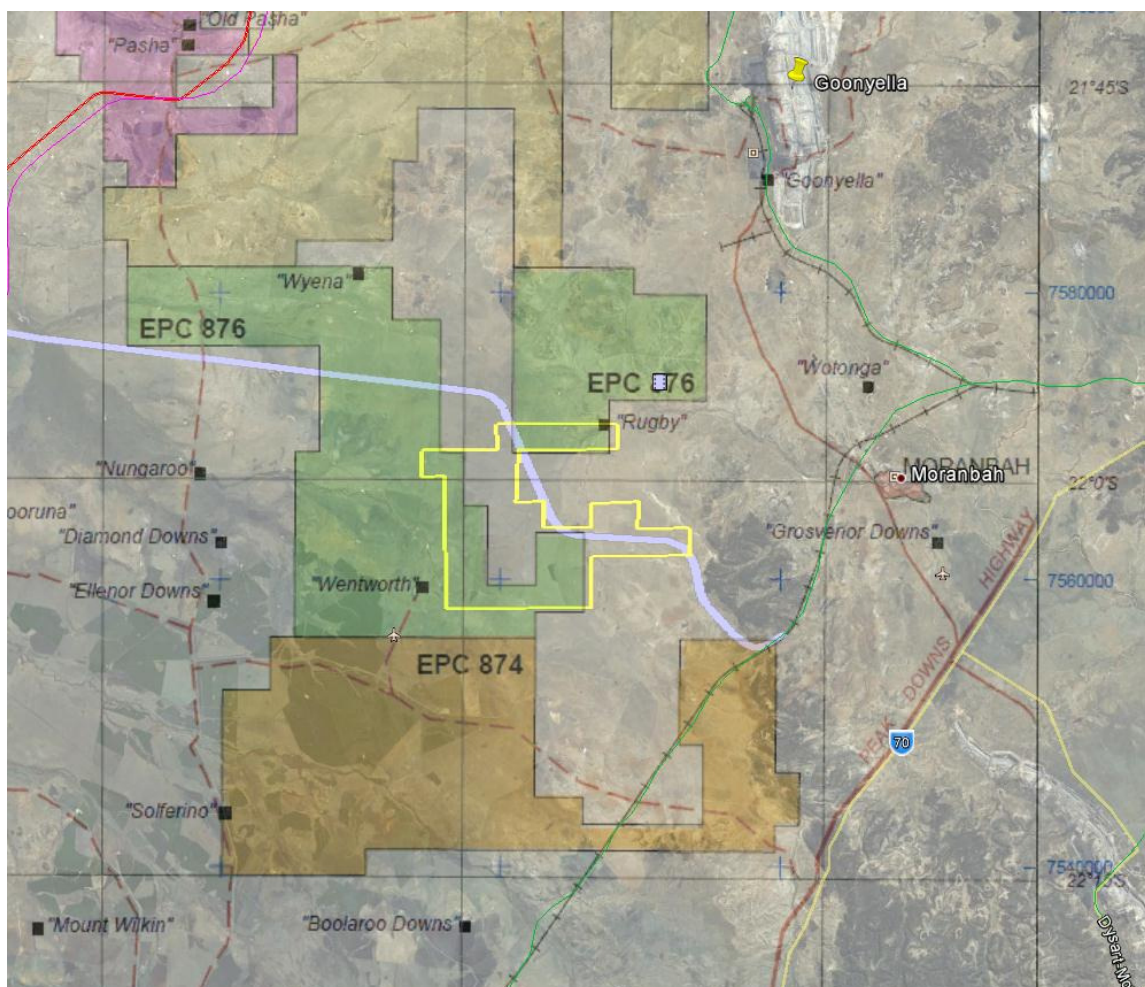
EPC876 - BHP Billiton Minerals Pty Ltd

Report No: CR39777

Covers: South western portion of EPC1244, most of EPC2135, northern half of EPC2188 and central north section of EPC1069 (Figure 5.22).

EPC's 874, 876, 877 and 878 were surrendered on 6 April 2005. Program included 13 holes drilled for a total of 2641m. Drilling failed to intersect coal bearing basins below tertiary cover, gravity lows explained by weathered metamorphics, volcanics and thickening of tertiary cover.

**Figure 5.22 – Historic EPC876 underlay Current EPC1244 (yellow outline)**





## 1990 - 1999

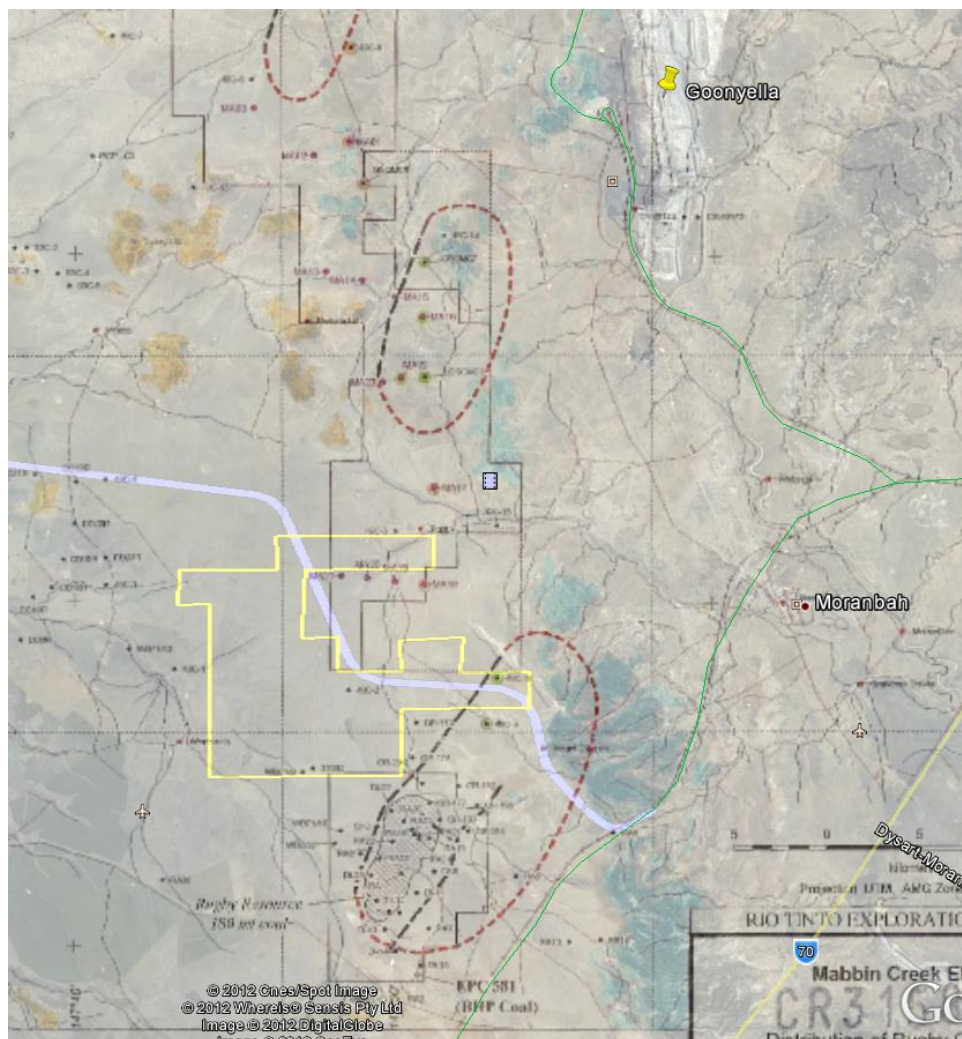
EPC645 - Rio Tinto Exploration Pty Ltd

Report No: CR31588

Covers: Mabbinn Creek Eastern side of EPC2135 and south western area of EPC1069 (Figure 5.23)

Decision to relinquish licence was made in December 1998. Exploration program included data compilation, gravity survey, drilling of 25 exploration holes for a total of 3250m, wireline logging of 5 of the previous mentioned holes, petrological and palynological analyses. Target deemed not sufficiently attractive, decision was made to relinquish.

Figure 5.23 – Historic EPC645 underlay Current EPC1244 (yellow outline)





## 1960 - 1969

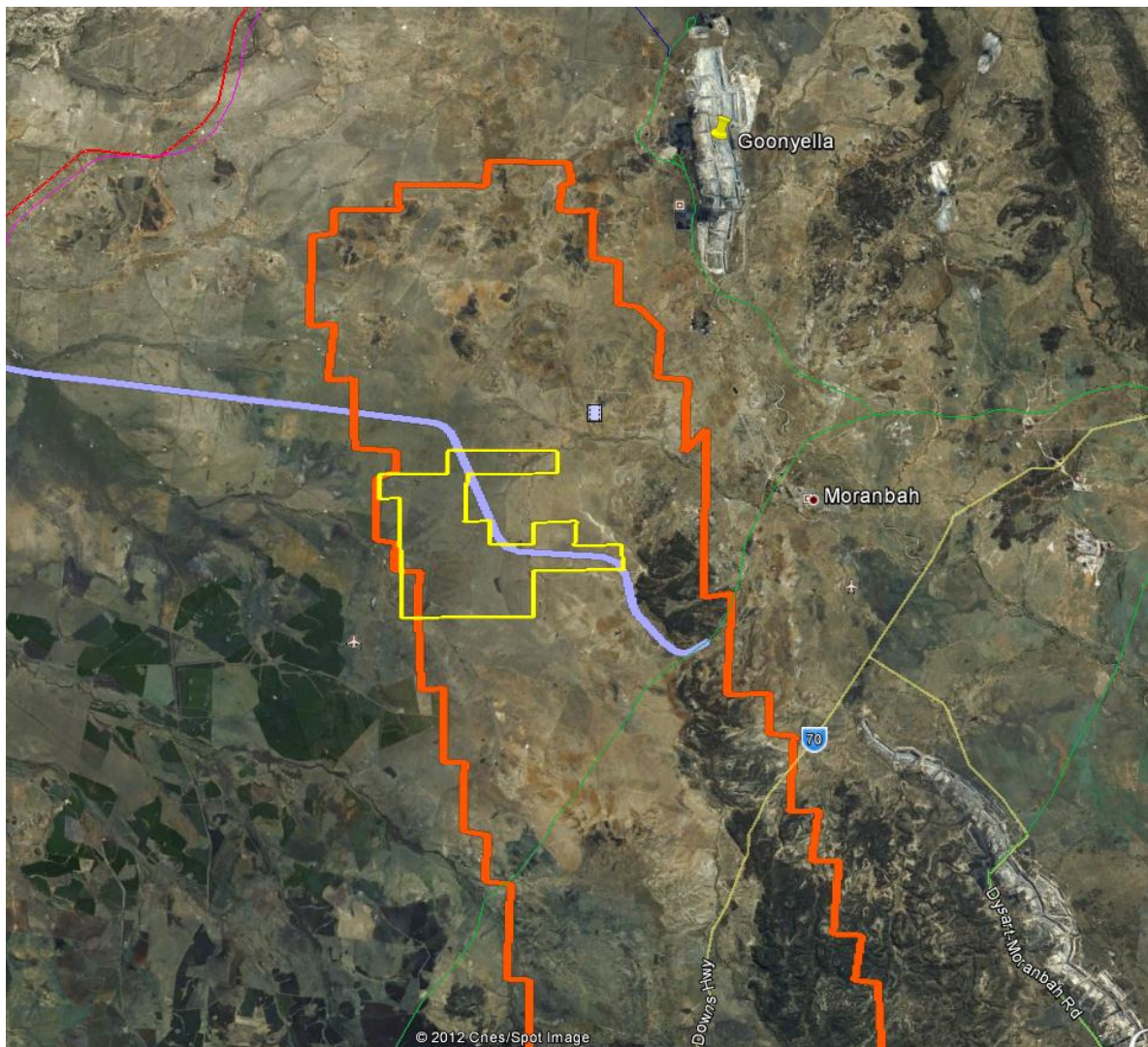
EPC13 - Clutha Development Pty Ltd

Report No: CR1845

Covers: Area 2 from report overlies north western portion of EPC1234, almost all of EPC2135 and EPC1244 and south half of EPC1069 (Figure 5.24).

Areas 1 and 2 detailed in historic report CR1845 are considered to be of no economic value. Conclusion based on negative geological findings in area 1 and test drilling in area 2 producing evidence of 27 feet of non-coking quality coal. Program included two cored holes proximal to Rugby Bore confirmed presence of coal.

**Figure 5.24 – Historic EPC13 underlay EPC1244 (yellow outline)**



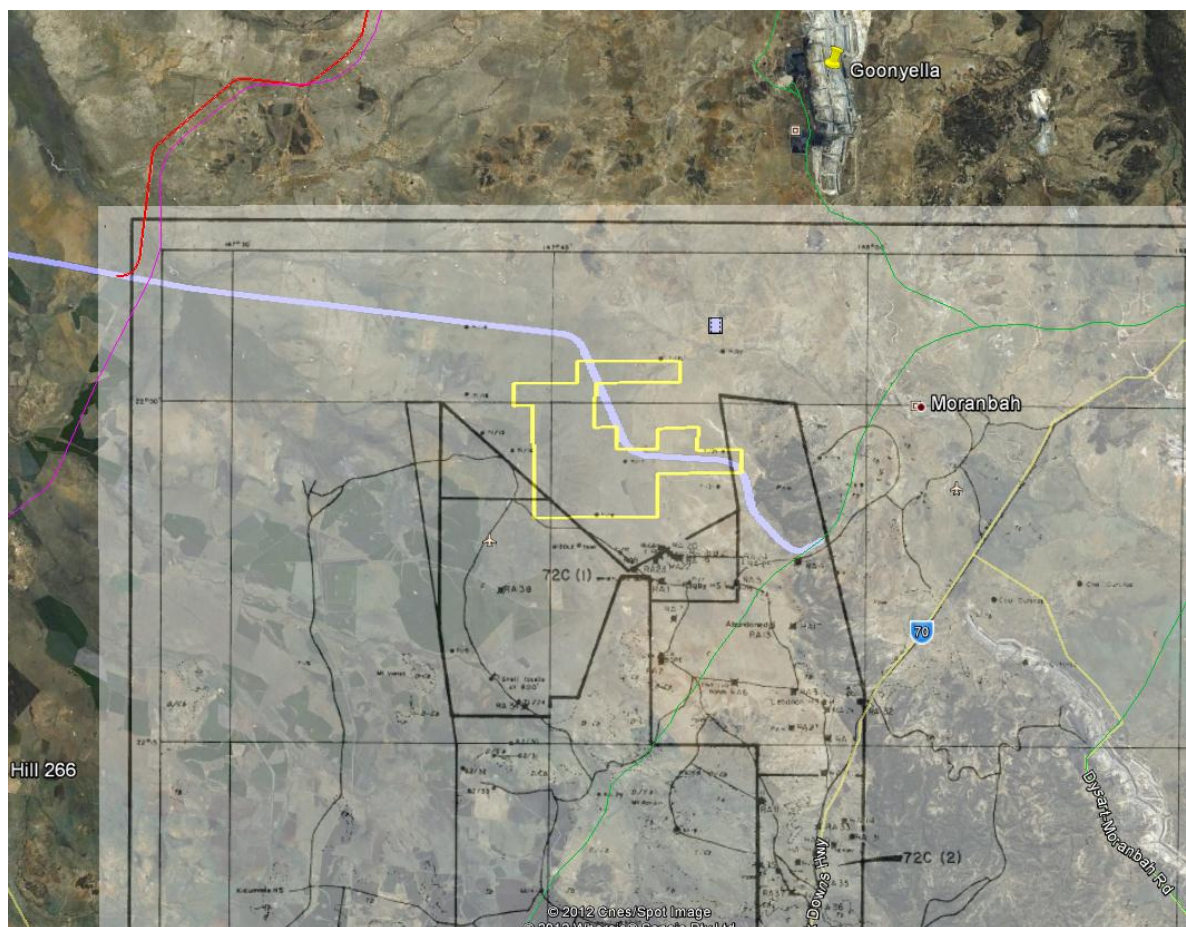
EPC72 - CRA Exploration Pty Ltd transferred to Blair Athol Coal Pty Ltd (1970)

Report No: CR3902, 3815, 3816, 4924, 3818, 4428, 3817, 4198

Covers: Covers southern rail corridor portion of EPC1069, western portion EPC1234 and surrounds EPC1244 (Figure 5.25)

Program included 2 rotary open holes completed for a total of 980 feet drilled. No coal or carbonaceous material encountered in either hole. No further work was proposed.

**Figure 5.25 – Historic EPC72 underlay Current EPC1244 (yellow outline)**





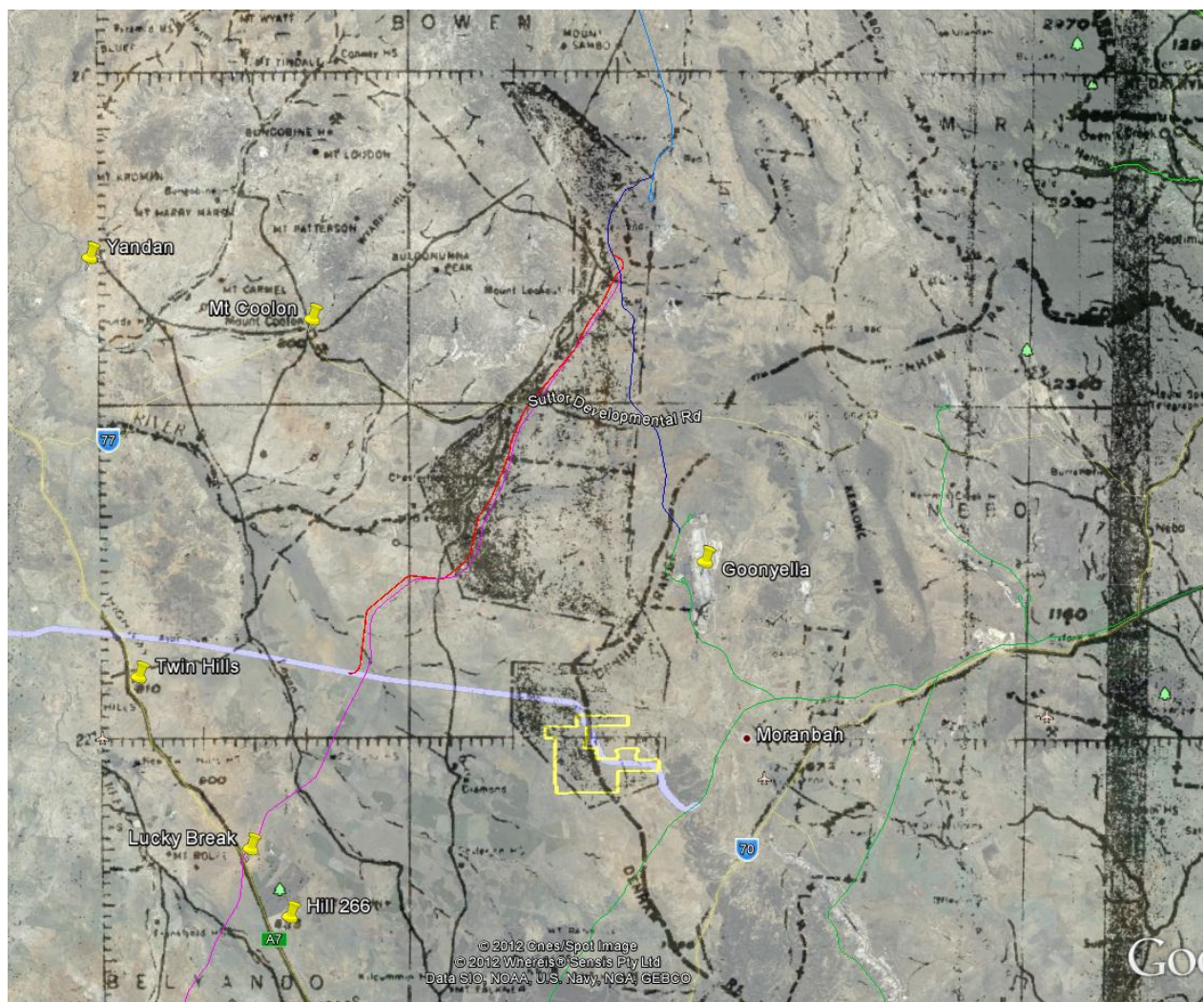
EPC49 - St. Joseph Phelps Dodge Exploration Pty Ltd

Report No: CR2790, 2698

Covers: Suttor River Area. Western side of EPC1069, EPC1244, EPC2135 rail portion (Figure 5.26).

ATP surrendered on 30<sup>th</sup> April 1969. Program included field mapping and drilling of 18 rotary holes totalling 9,722 feet. No coal seams were intersected in the drilling.

**Figure 5.26 – Historic EPC49 underlay Current EPC1244 (yellow outline)**





### 5.3.4 Summary of Previous Work on EPC2135- Carabella Resources Ltd

*Lodged 28/06/2010, Granted 01/08/2012, Expires 31/07/2017*

The previous tenement holders over the current lease area are as follows.

#### 2000 – Present

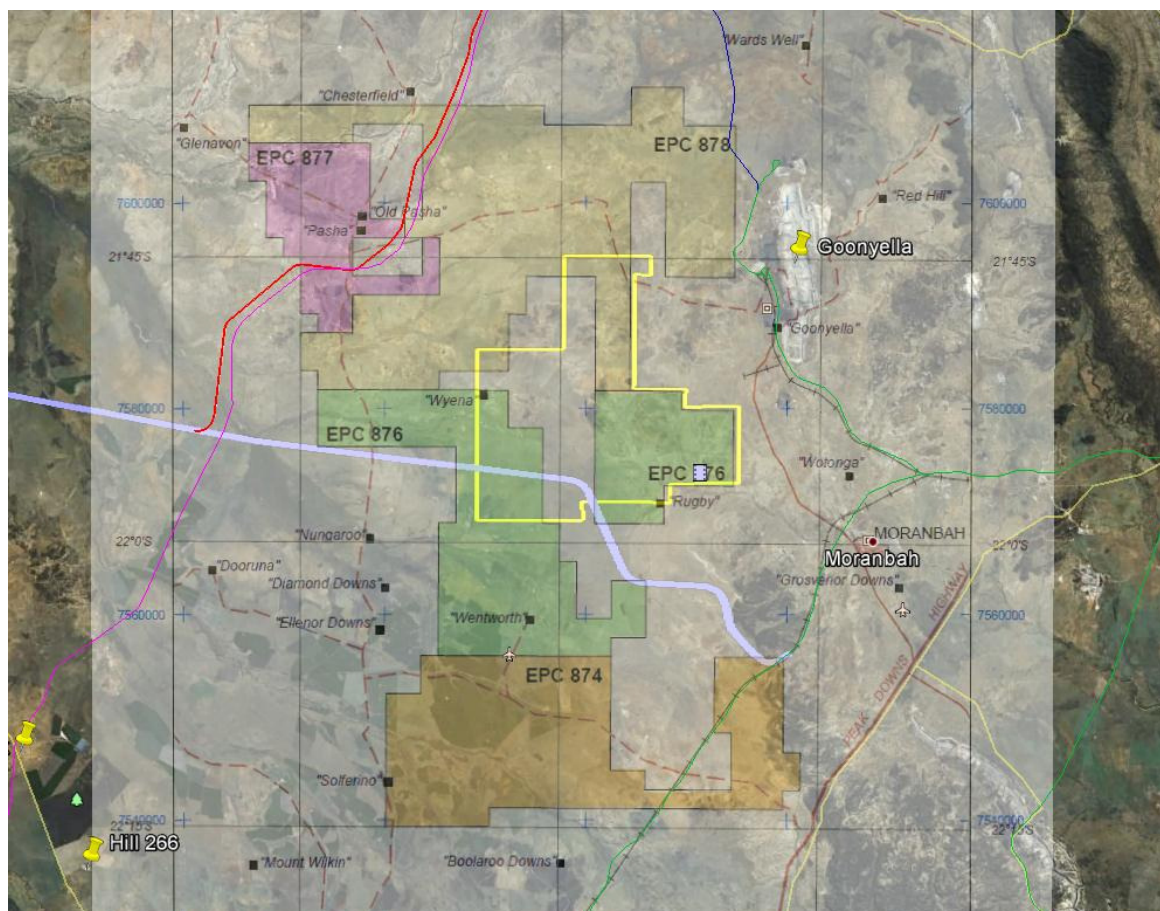
EPC876 - Billiton Minerals Pty Ltd

Report No: CR39777

Covers: South western portion of EPC1244, most of EPC2135, northern half of EPC2188 and central north section of EPC1069 (Figure 5.27).

EPC's 874, 876, 877 and 878 were surrendered on 6 April 2005. Program included 13 holes drilled for a total of 2641m. Drilling failed to intersect coal bearing basins below tertiary cover, gravity lows explained by weathered metamorphics, volcanics and thickening of tertiary cover.

**Figure 5.27 – Historic EPC876 underlay Current EPC2135 (yellow outline)**



EPC1088 - *unknown*

No report on QDEX as at August 2012

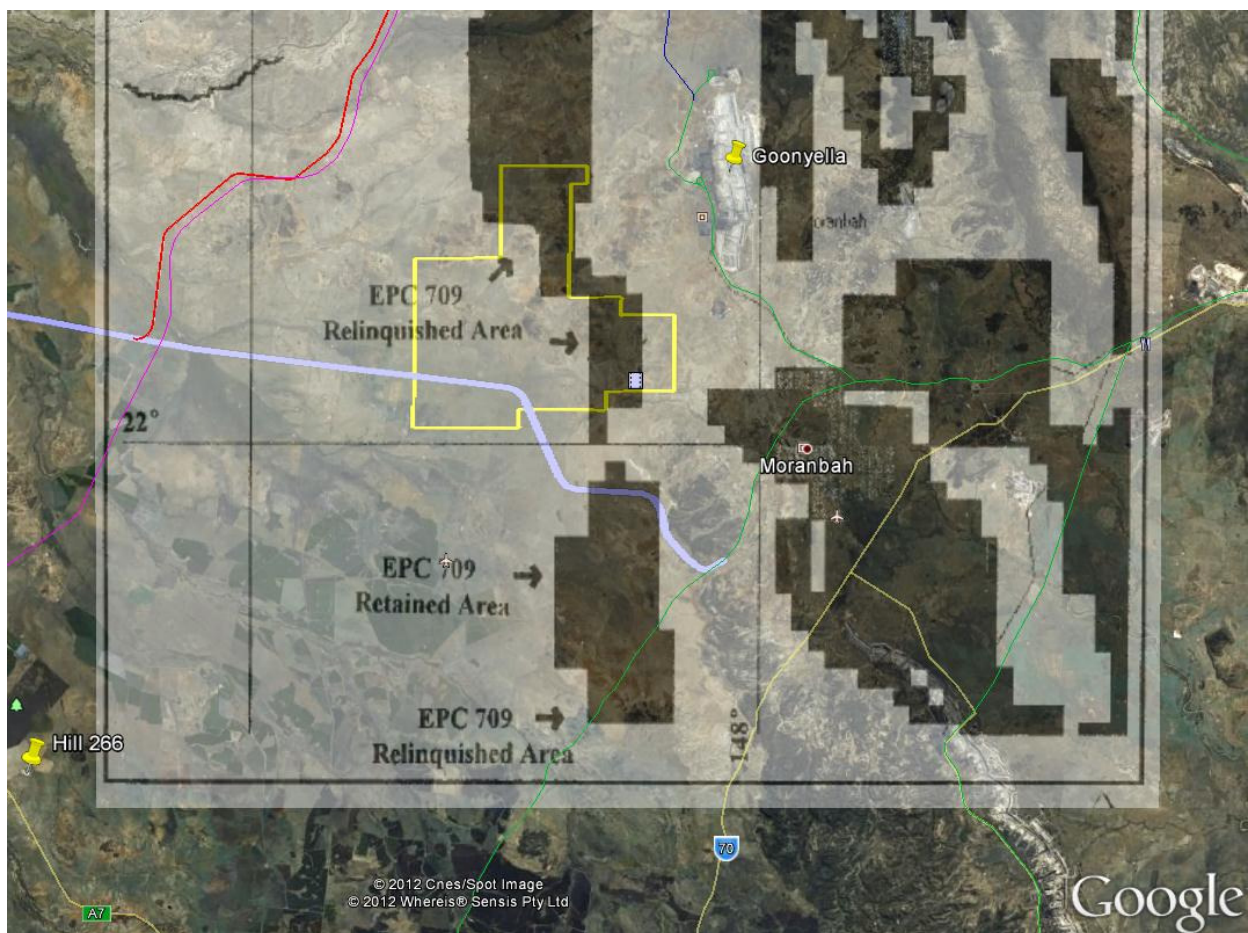
EPC709 - QCOAL Pty Ltd

Report No: CR32585, 39766, 50544

Covers: Area to north of EPC1244, south of EPC1069 and east of EPC2135 (Figure 5.28)

Partial relinquishment on the 14<sup>th</sup> December, 2000. Relinquished 128 sub blocks following review of geology and coal resources. The relinquished area was considered poorly prospective and likely to require very high cost exploration for discovery.

**Figure 5.28 – Historic EPC709 underlay Current EPC2135 (yellow outline)**





## 1960 – 1969

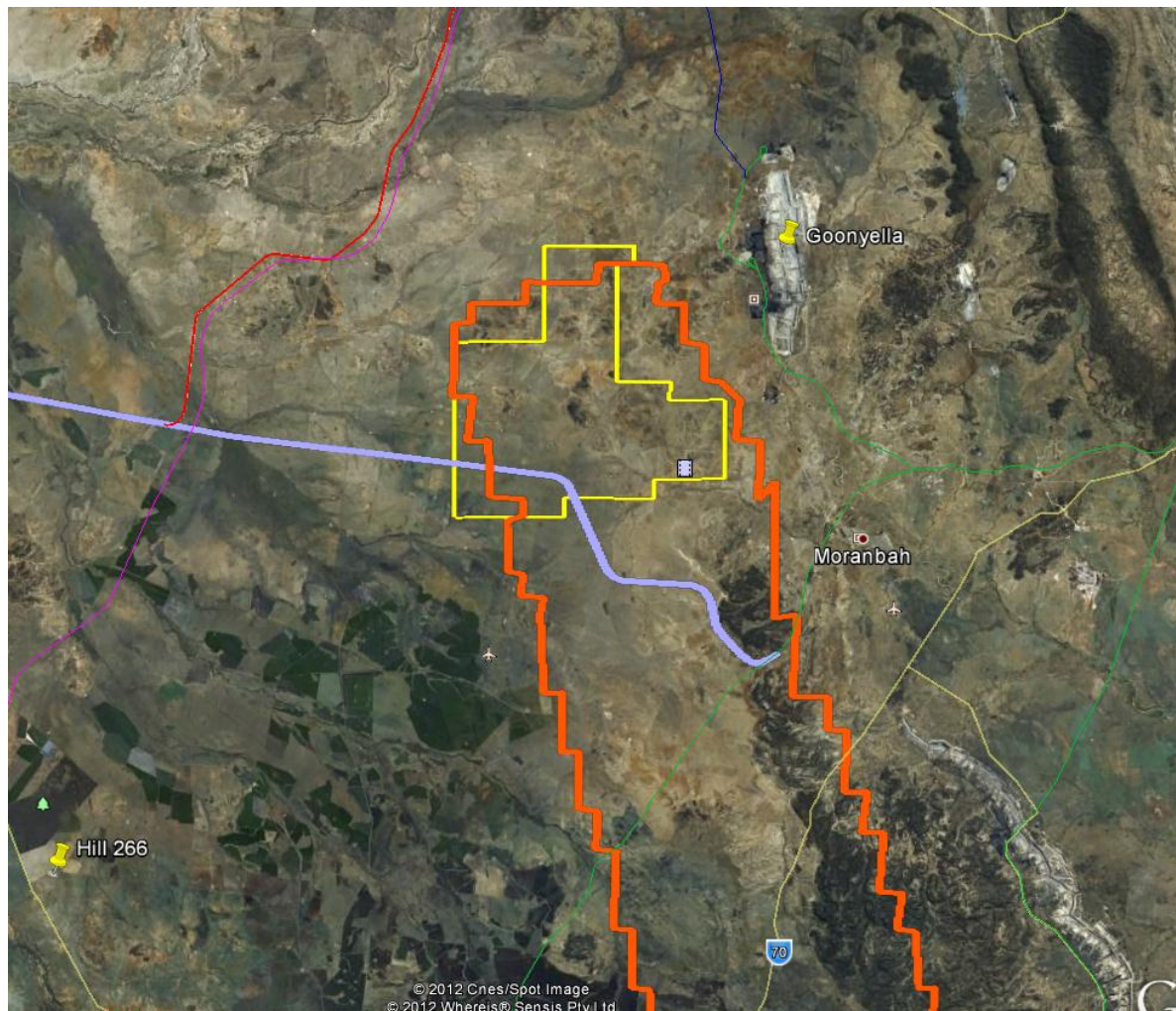
EPC13 - Clutha Development Pty Ltd

Report No: CR1845

Covers: Area 2 from report overlies north western portion of EPC1234, almost all of EPC2135 and EPC1244 and south half of EPC1069 (Figure 5.29).

Areas 1 and 2 are considered to be of no economic value. Conclusion based on negative geological findings in area 1 and test drilling in area 2 producing evidence of 27 feet of non-coking quality coal. Program included two cored holes proximal to Rugby Bore confirmed presence of coal.

**Figure 5.29 – Historic EPC13 underlay EPC2135 (yellow outline)**

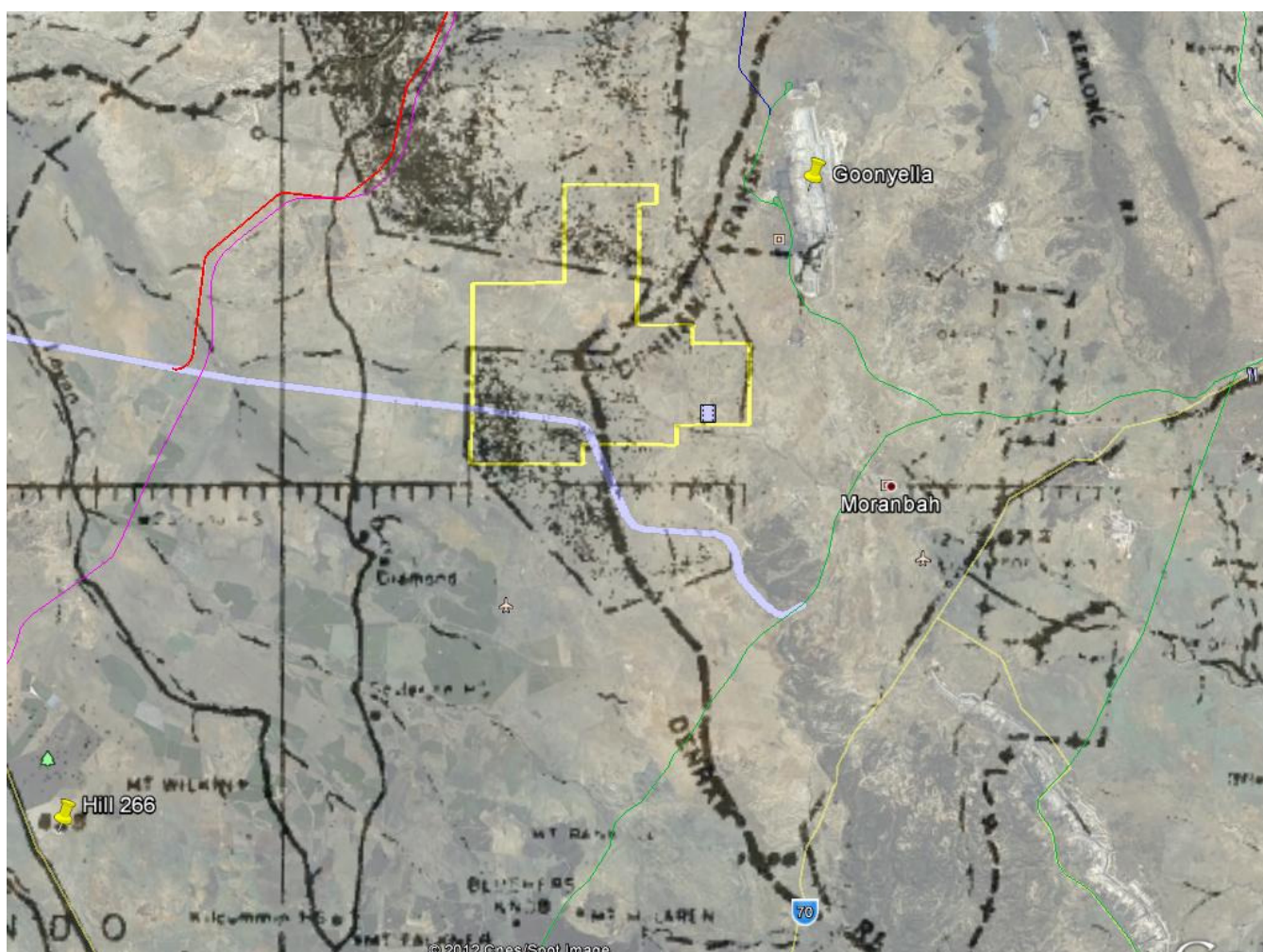




Report No: CR2790, 2698

ATP surrendered on 30<sup>th</sup> April 1969. Program included field mapping and drilling of 18 rotary holes totalling 9,722 feet. No coal seams were intersected in the drilling.

**Figure 5.30 – Historic EPC49 underlay Current EPC2135 (yellow outline)**



### 5.3.5 Summary of Previous Work on EPC2188 – Carabella Resources Ltd

*Lodged 04/08/2010, Granted 31/01/2011, Expires 30/01/2016*

The previous tenement holders over the current lease area are as follows.

#### 2000 - Present

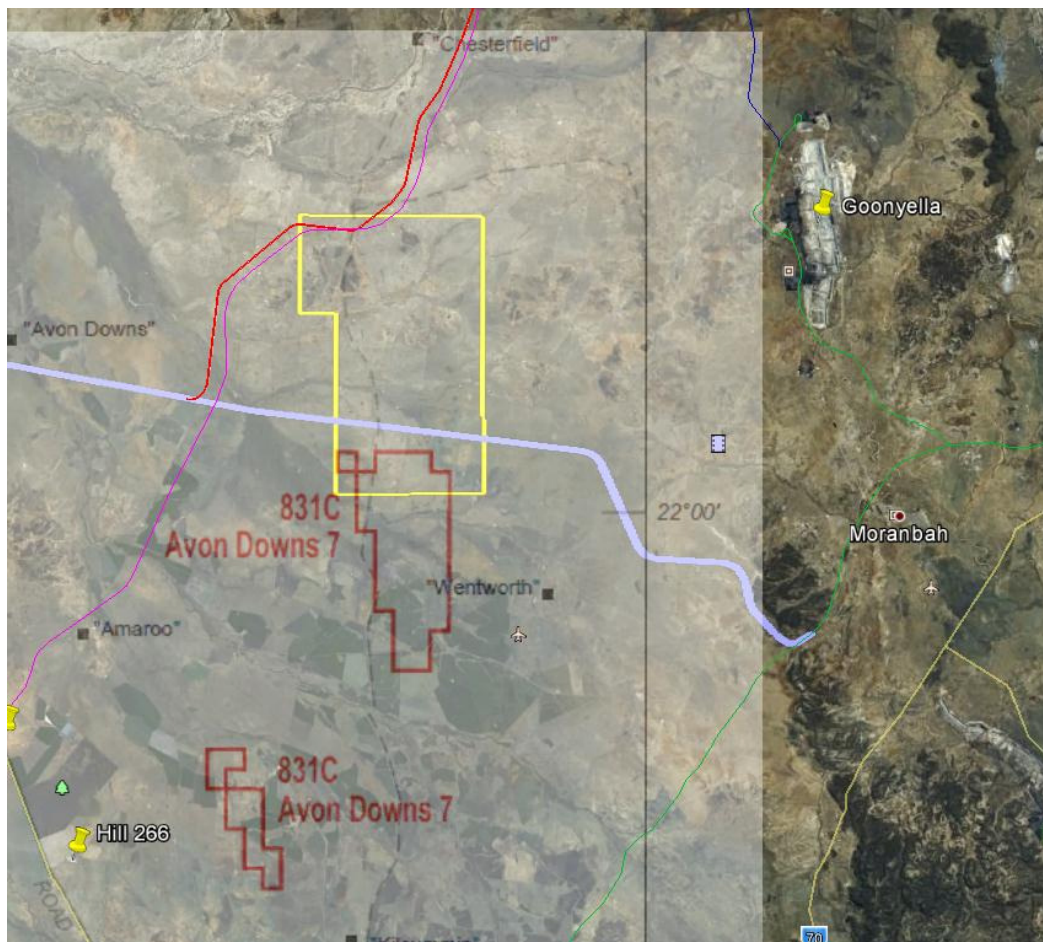
EPC831 - BHP Billiton Minerals Pty Ltd

Report No: CR36675

Covers: Southern section of EPC2188 (Figure 5.31)

EPC relinquished in full on 12<sup>th</sup> November 2003. Falcon airborne gravity survey over project area no anomalies of interest were discovered. No groundwork undertaken.

**Figure 5.31 – Historic EPC831 underlay Current EPC2188 (yellow outline)**









## 1970 - 1979

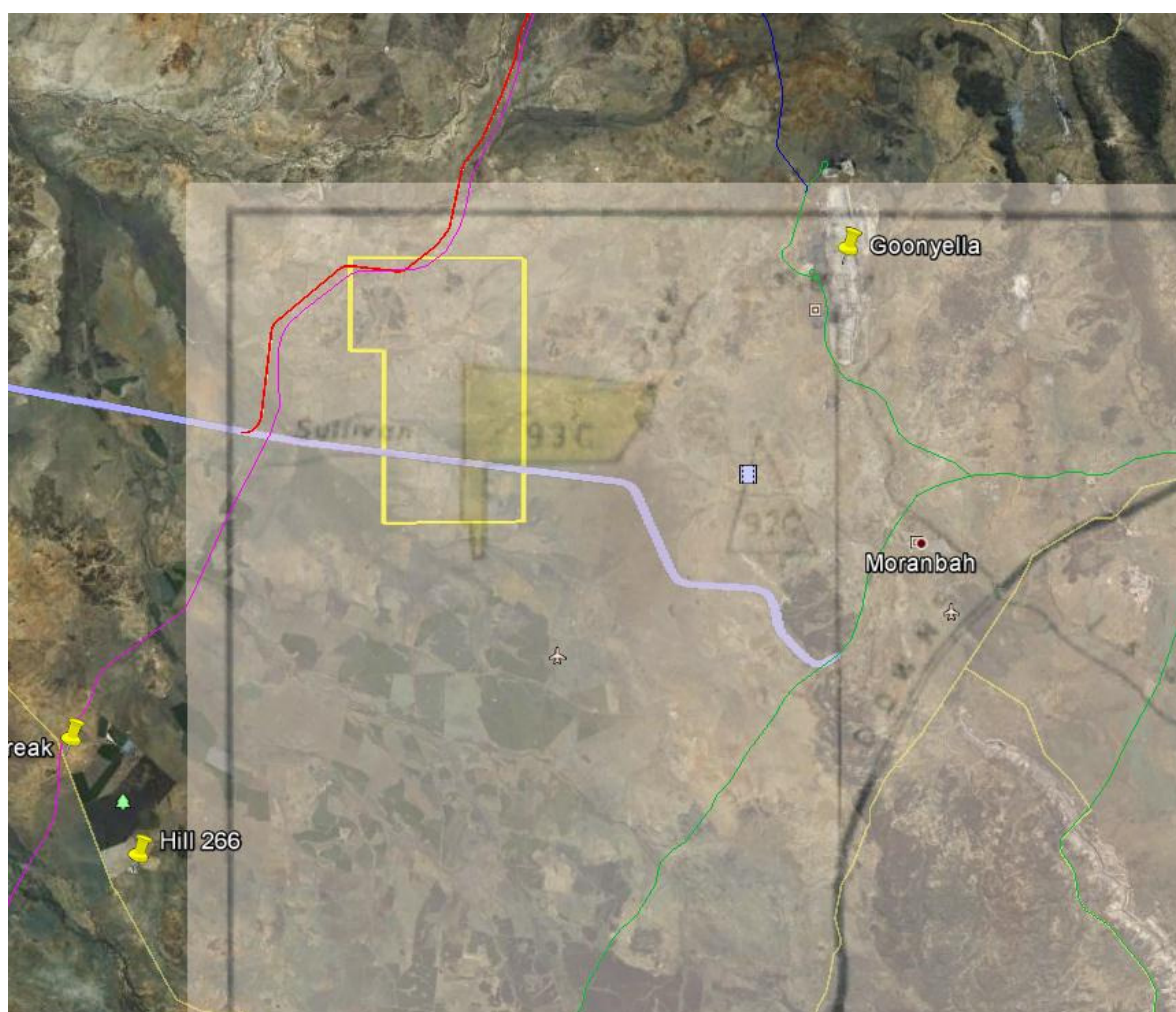
EPC93 - BHP Pty Ltd

Report No: CR3734

Covers: Western area of EPC2135 and Eastern area of EPC2188 (Figure 5.33)

ATP was surrendered. Shallow basement and thick sediments indicated no evidence for suitable economic coke making coal deposits.

**Figure 5.33 – Historic EPC93 underlay Current EPC2188 (yellow outline)**



## 1960 - 1969

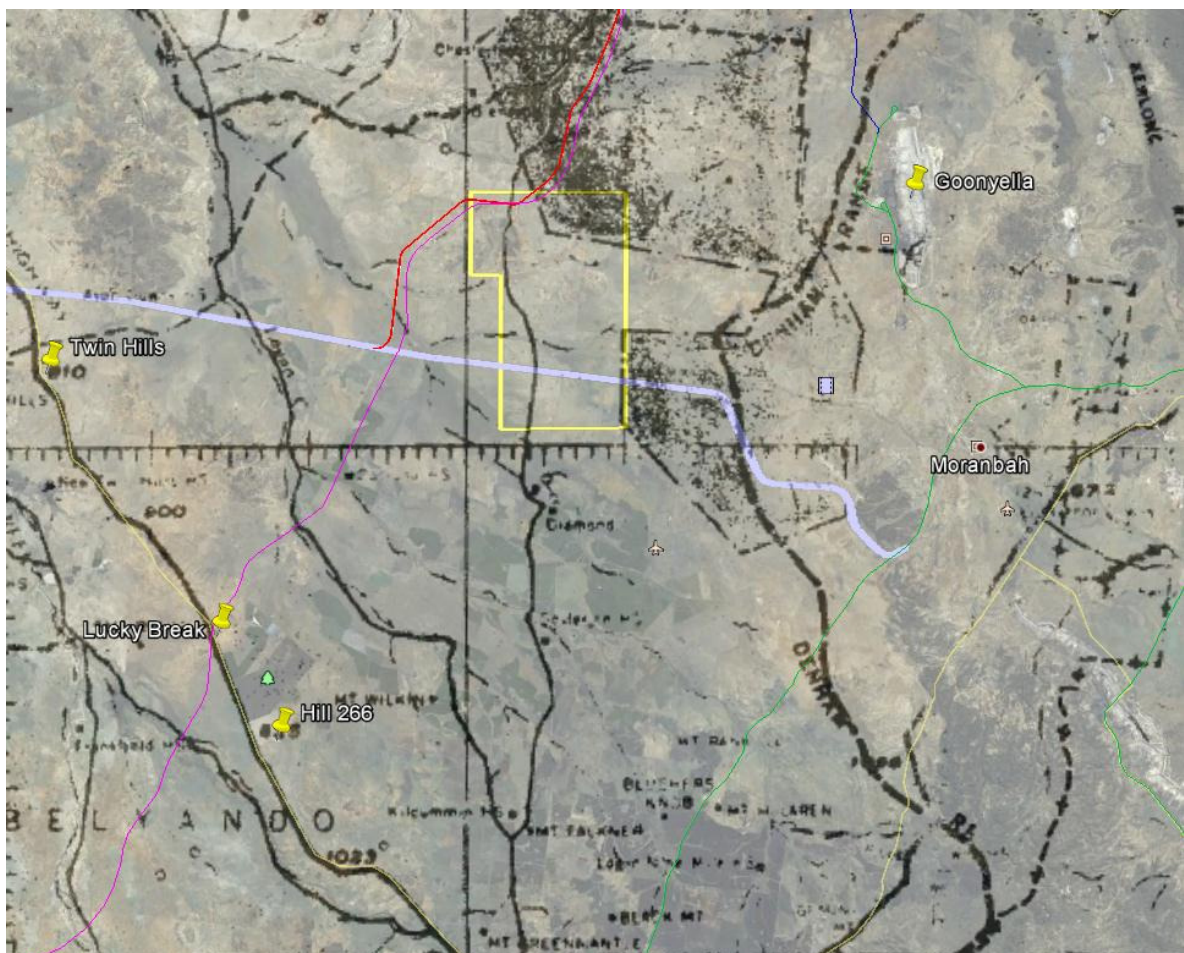
EPC49 - St. Joseph Phelps Dodge Exploration Pty Ltd

Report No: CR2790, 2698

Covers: Suttor River Area. Western side of EPC1069, EPC1244, EPC2135 rail portion EPC2188 surrounds (Figure 5.34)

ATP surrendered on 30<sup>th</sup> April 1969. Program included field mapping and drilling of 18 rotary holes totalling 9,722 feet. No coal seams were intersected in the drilling.

**Figure 5.34 – Historic EPC49 underlay Current EPC2188 (yellow outline)**





### 5.3.6 Summary of Previous Work on EPC2163 - Queensland Coal Investments

*Lodged 07/07/2010, Granted 15/05/2012, Expires 14/05/2017*

The previous tenement holders over the current lease area are as follows.

#### 2000 - Present

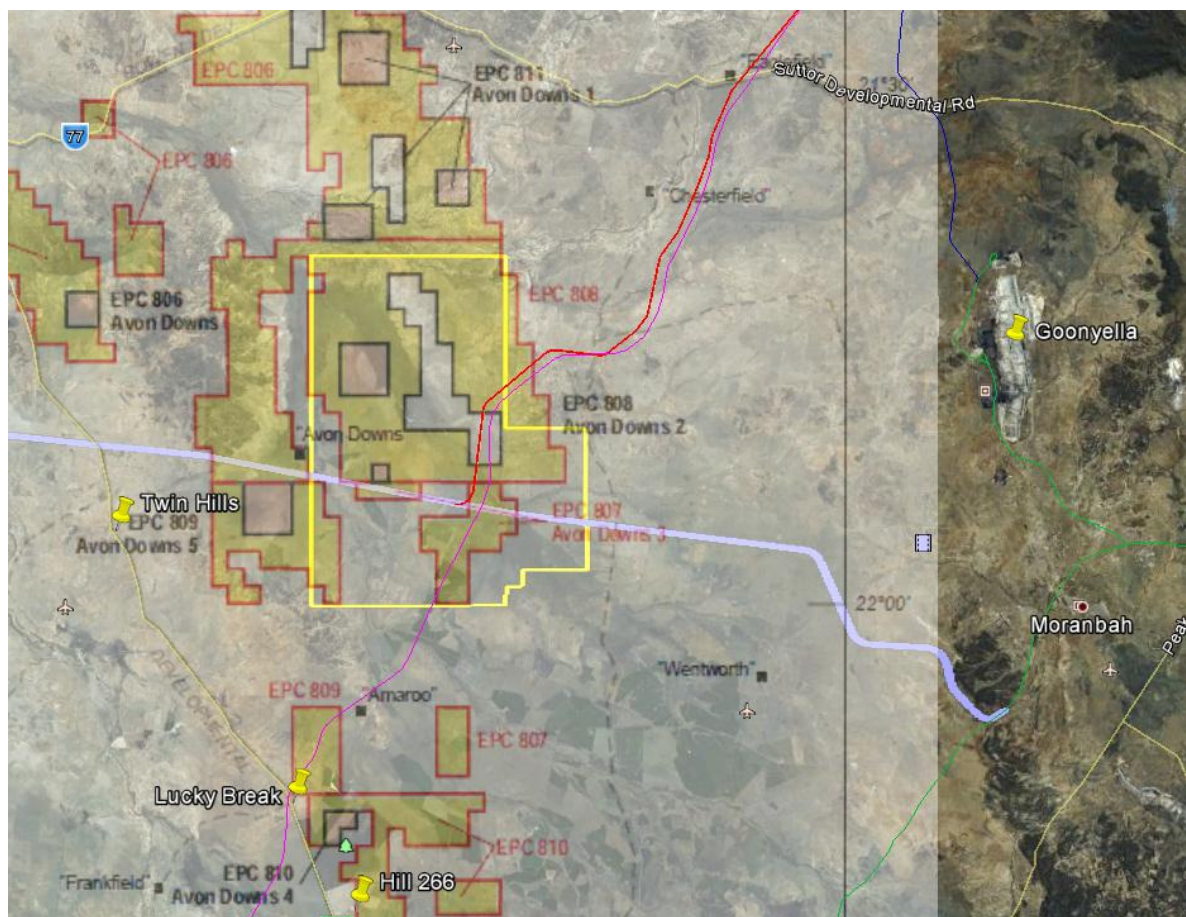
EPC809, EPC808, EPC807 - BHP Billiton Minerals Pty Ltd

Report No: CR36697, 38335, 38315, 36729, 38974, 38295 36697

Covers: Most of EPC2163 (Figure 5.35)

EPC Surrendered on 21 November 2004. Review of previous exploration and FALCON airborne gravity and drill hole data, downgraded potential of the EPC to host coal-bearing basins.

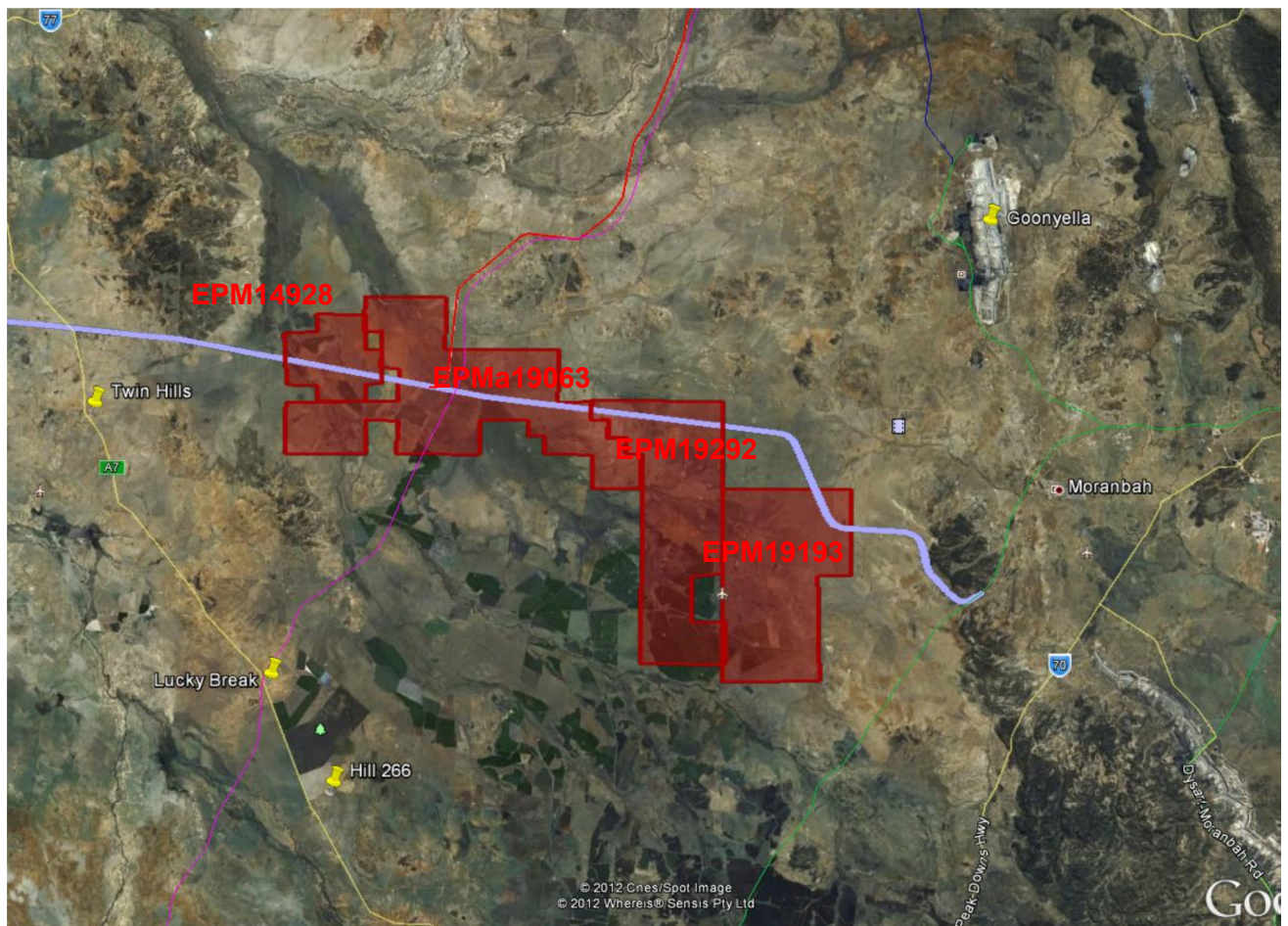
**Figure 5.35 – Historic EPC808, 809, 807 underlay Current EPC2163 (yellow outline)**



### EPMs Incurred in Area 3 Eastern Branch

A map of the EPM tenements affected by the proposed rail line is included as Figure 5.36. The shaded areas are those covered by historic reports.

Figure 5.36 – Current EPM's shading indicates areas covered historically





### 5.3.7 Summary of Previous Work on EPM19193 GBM Resources Ltd

*Lodged 19/04/2011, Granted 27/06/2011, Expires 26/06/2014*

The previous tenement holders over the current lease area are as follows.

#### 2000 - Present

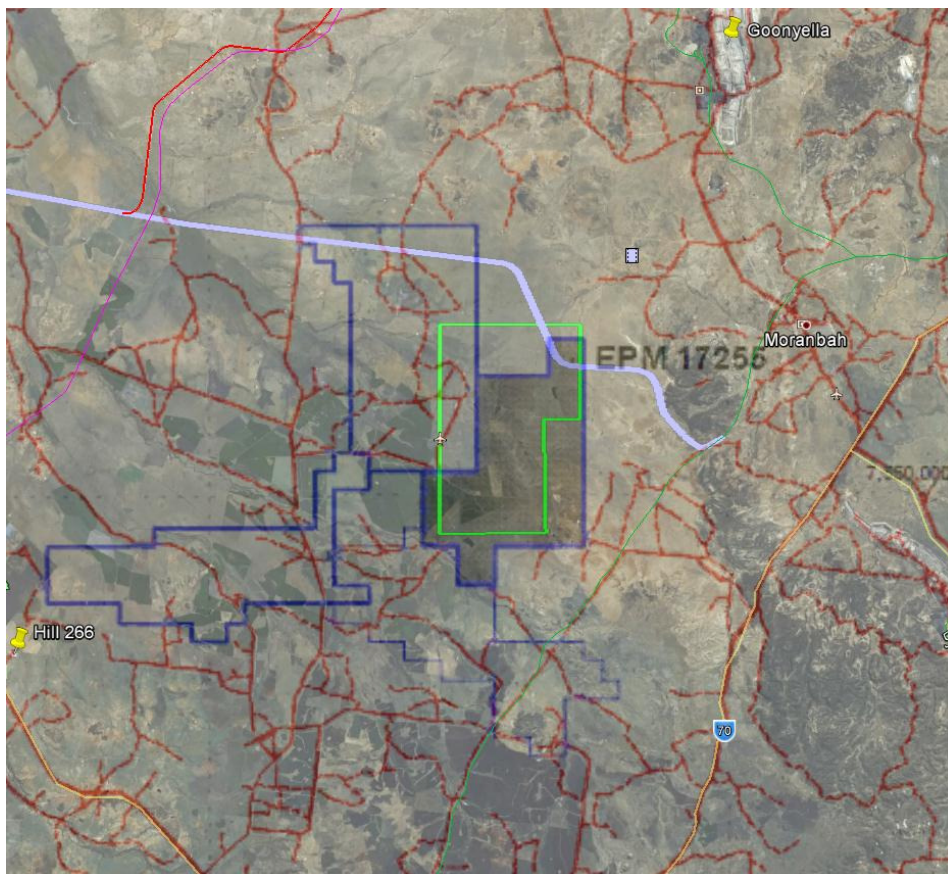
EPM17255 - Mt Coolon Gold Mines (Drummond Gold Ltd)

Report No: CR64357, 58498

Covers: Railway Corridor portion northeast of EPC1244 and eastern section of EPM19193 (Figure 5.37)

Tenement surrendered on 27<sup>th</sup> July 2010. Program included literature review, database compilation and an assessment of mineralisation potential. Assessment found limited potential for tenement to host gold or base metal mineralisation.

**Figure 5.37 – Historic EPM17255 underlay Current EPM19193 (green outline)**



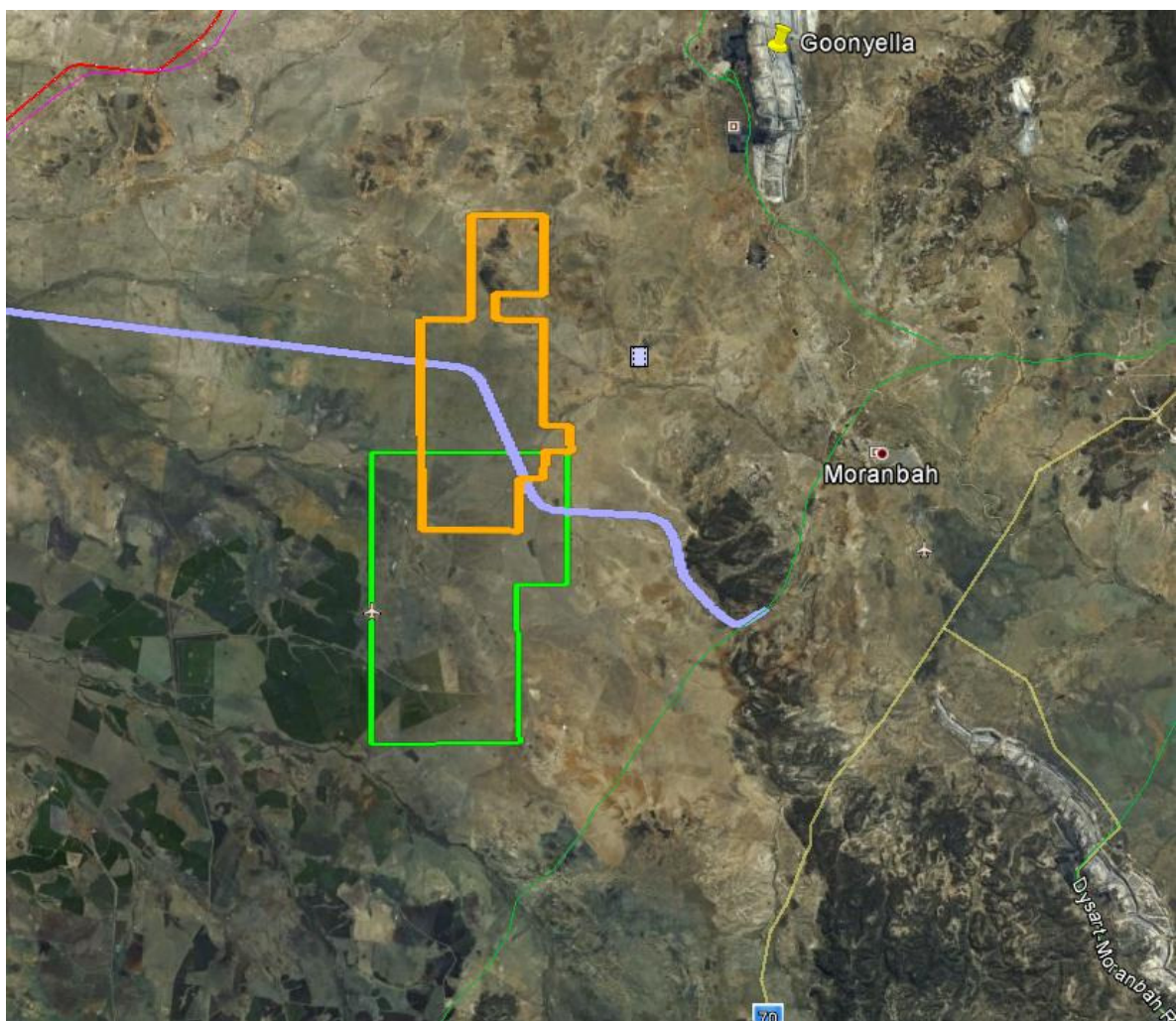
EPM14662 - Avonlea Minerals Ltd Purchased from Straits Resources Ltd 14<sup>th</sup> September 2007.

Report No: CR50865, 45357, 64440, 54897, 50625

Covers: South western area of EPC1069, north western region of EPC1244 and southern central region of EPC2135. Area surrendered covers northern region of EPM19193 (Figure 5.38).

After geological reconnaissance was completed, 12 sub-blocks were relinquished leaving 37 sub blocks within tenement. Following study of airborne geophysics the southern portion (which covers the rail corridor) was downgraded and subsequently surrendered.

**Figure 5.38 – Historic EPM14662 underlay Current EPM19193 (green outline)**





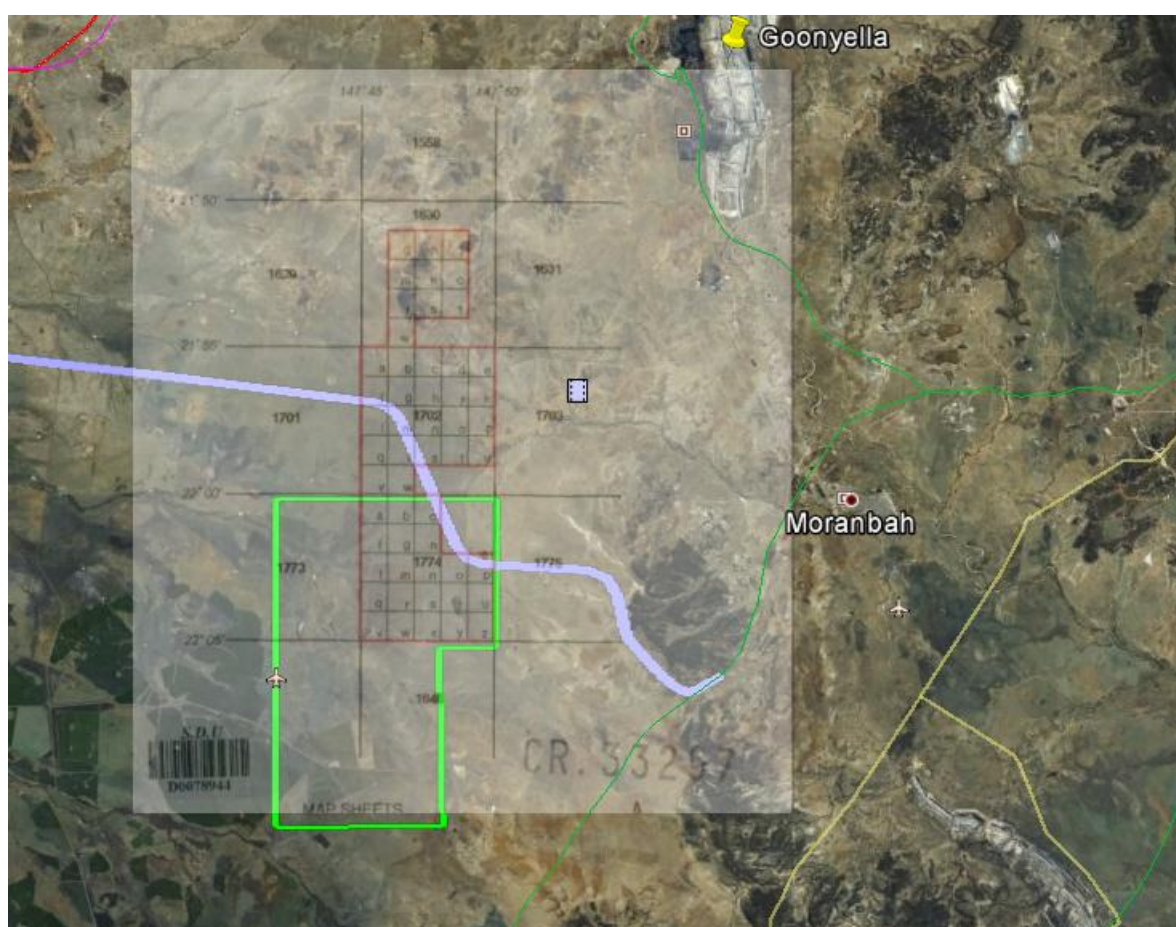
EPM13188 - Newmont Gold Exploration Pty Ltd

Report No: CR33297

Covers: Concurrent with EPM14662 EPM19193 (Figure 5.39)

Budgetary constraints and other priorities prevented exploration during period of tenure. Area surrendered under EPM14662 is concurrent with area held under EPM13188 (assumed low prospectivity).

**Figure 5.39 – Historic EPM13188 underlay Current EPM19193 (green outline)**



EPM17640 - *unknown*

No record on QDEX as at August 2012

EPM17254 - *unknown*

No report on QDEX as at August 2012

EPM14931 - *unknown*

No report on QDEX as at August 2012

### **1980-1989**

EPM5407- *unknown*

No report on QDEX as at August 2012

### **1970 –1979**

EPM2099 - Pennaroya (AUST) Pty Ltd

Report No: CR7430, 7754, 7616, 9431, 8168, 8655

Covers: EPC2135 and north of EPM19193

Low economic base metal anomalies found, mainly sphalerite

### **5.3.8 Summary of Previous Work on EPM19292 Goldfields Australasia Pty Ltd**

*Lodged 14/07/2011, Granted 23/01/2012, Expires 22/01/2017*

The previous tenement holders over the current lease area are as follows.

### **2000 - Present**

EPM17254 - *unknown*

No report on QDEX as at August 2012



EPM14931 - *unknown*

No report on QDEX as at August 2012

EPM14930- *unknown*

No report on QDEX as at August 2012

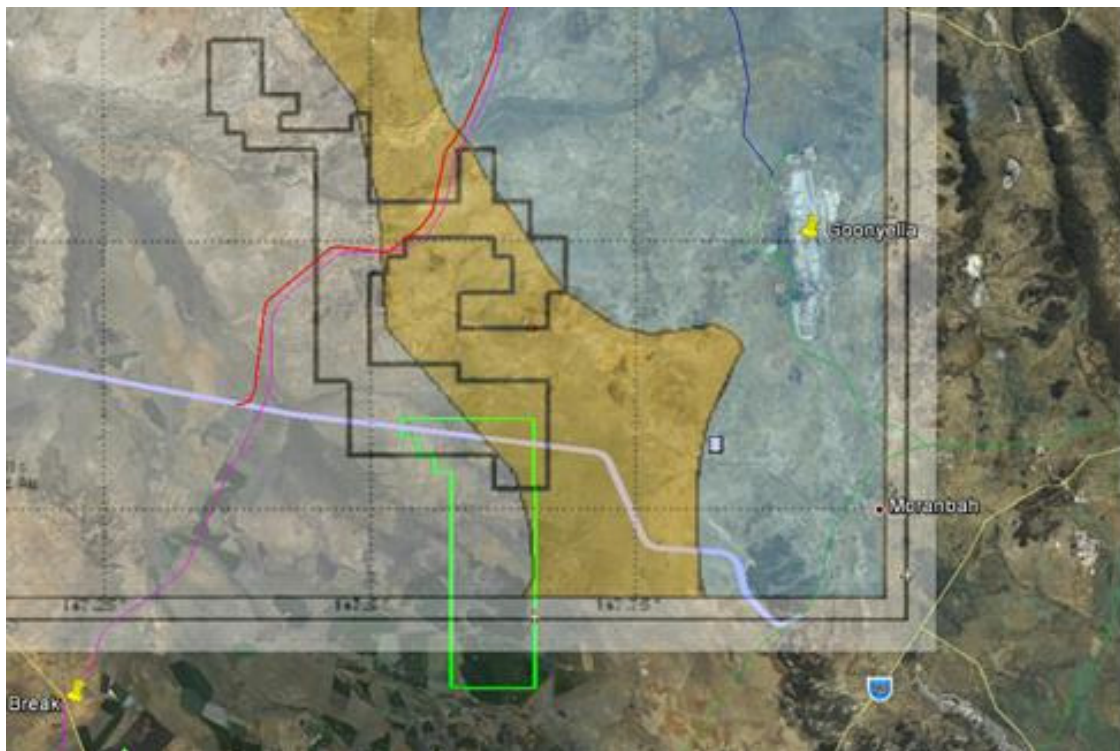
EPM11814 - Wirralie Mines Pty Ltd ( Ashburton Minerals Ltd)

Report No: CR39334

Covers: South western portion of EPC2135, southern half of EPC2188. EPM11814 also covers the northern railway corridor portion, of EPM19292 and the eastern area of EPMa19063 (Figure 5.40).

162 blocks surrendered in September 2004. Program for surrendering blocks included acquiring and processing regional geophysical data. A regolith study was also conducted to build upon geochemical database

**Figure 5.40 – Historic EPM11814 underlay Current EPM19292 (green outline)**



## 1990 - 1999

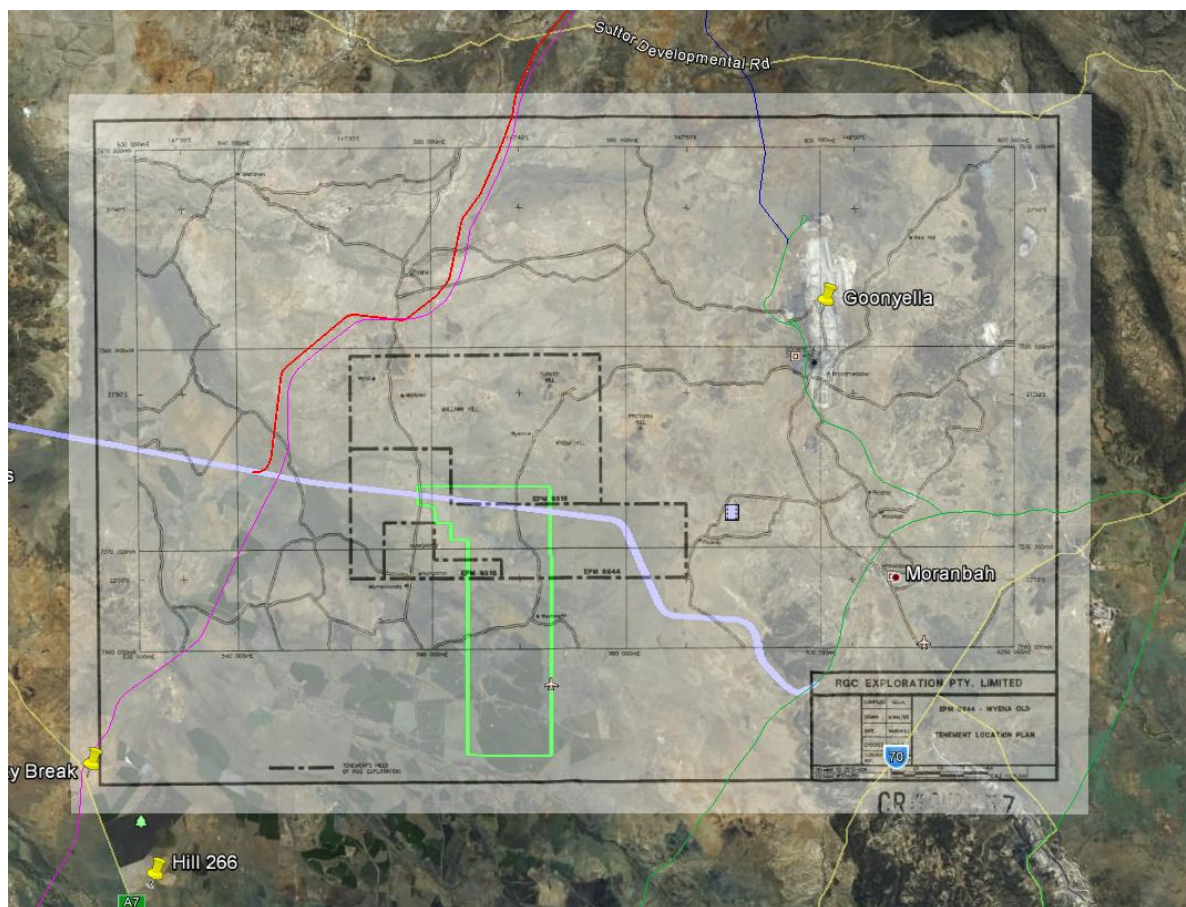
EPM8944 - consolidation of EPMs (8512, 8513 and 8611) RGC Exploration Pty Ltd

Report No: CR25657, 25198; EPM8611 CR24847

Covers: Eastern end of EPMA19063 and Northern region of EPM19192 Railway portion of EPCs (2135 and 2188), south eastern region of EPC2163, northern region of EPC1244 and south western area of EPC 1069. Covers southern area of EPM19292 and EPMA19063 (Figure 5.41)

EPM8944 was a consolidation of EPMs (8512, 8513 and 8611). Program of works included, regional geological mapping, rock chip sampling, lag sampling, modelling anomalies from aeromagnetics survey and air core drilling in the west of the EPMs over structural features identified in aeromagnetics. Most of the area obscured by black soil or Tertiary and or Quaternary sediments and drilling below produced no significant anomalies from either tertiaries or bedrock. As a result of work EPM 8944 was relinquished by Renison Ltd.

**Figure 5.41 – Historic EPM 8944 underlay Current EPM19292 (green outline)**





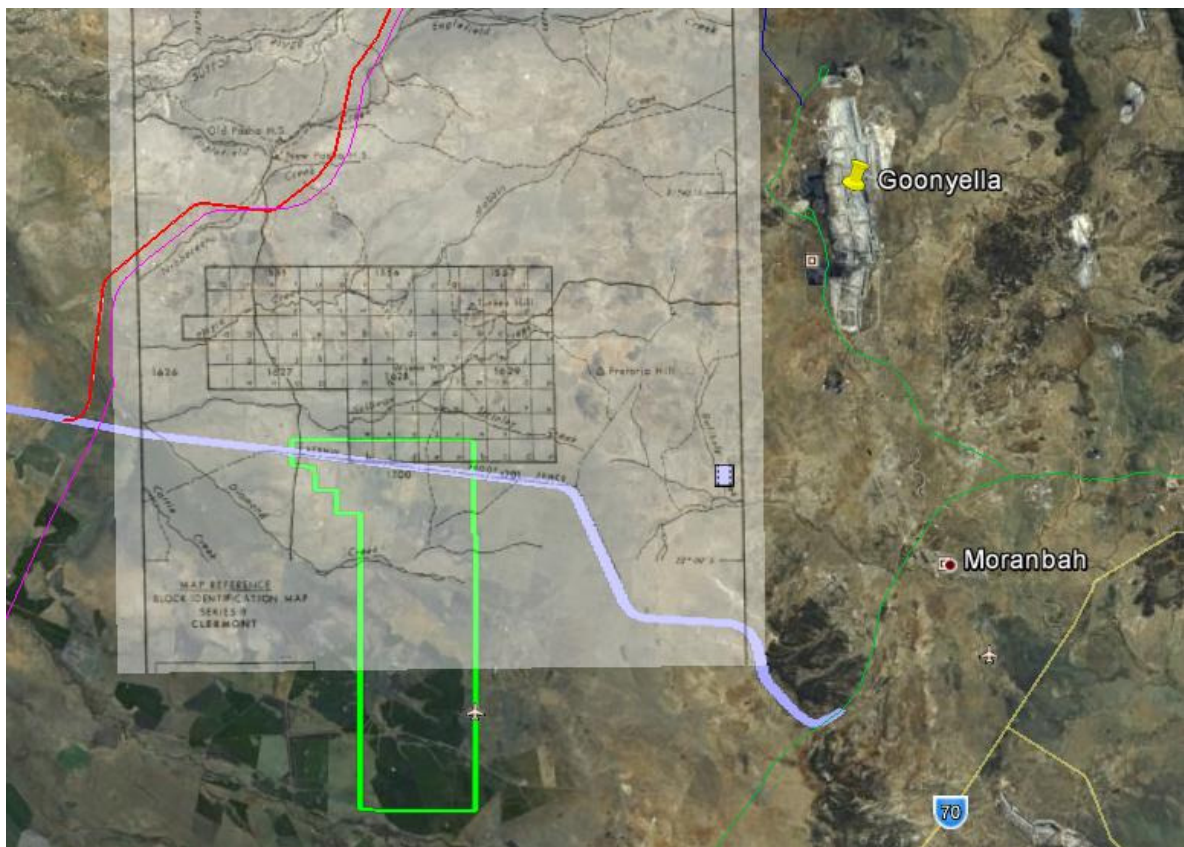
EPM8451 - Plutonic Operations Ltd

Report No: CR24172

Covers: Western portion of EPC2135, central portion of EPC2188, northern margin of EPM19292 (Figure 5.42).

Work program include 30 rock chip and 78 BCL soil samples identifying areas for future work. Subsequent examination of area with BLEG soil sampling and rock chip sampling failed to identify any targets for future work.

**Figure 5.42 – Historic EPM8451 underlay Current EPM19292 (green Outline)**



## 1980 - 1989

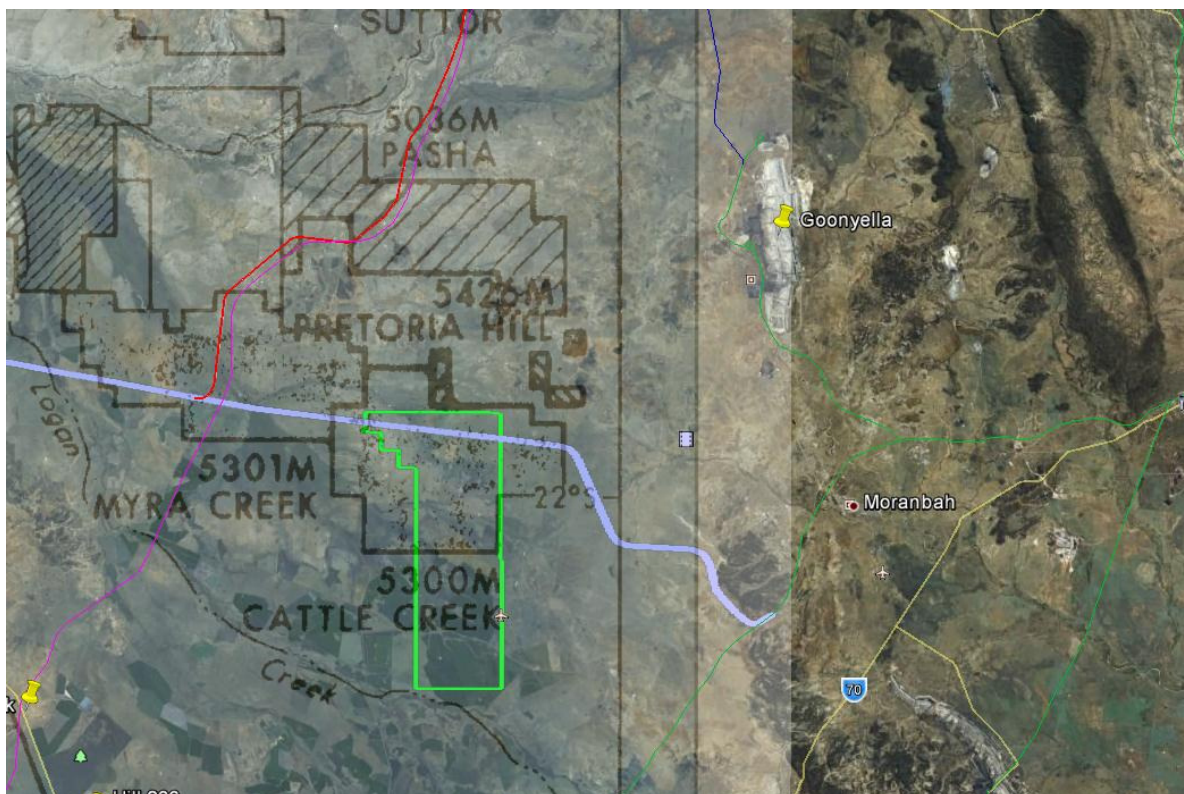
EPM5300 (Cattle Creek) and EPM5301 (Myra Creek)-Keela-Wee Exploration N.L.

Report No: CR19044

Covers: Rail Portion of central EPC2163 and EPC2188, southern and rail portion of EPCEPC2188. Also covers eastern margin of EPM14928, the rail portion of EPMA19063 and the northern and rail portion of EPM19292 (Figure 5.43).

EPMs were relinquished on 15<sup>th</sup> December 1988. Exploration program included assessing neighbouring data and soil sampling. 2km grid soil sampling over EPM5300 yielded one anomalous result. Poor results from neighbouring drilling and excessive soil cover downgraded the prospectivity of the EPMs. Program also included literature research, photogeological interpretation, field reconnaissance and BCL soil sampling. No significant assays were returned.

**Figure 5.43 – Historic EPM5300 underlay Current EPM19292 (green outline)**





EPM3111 - BHP Minerals Ltd

Report No: CR10890

Covers: Southern portion of EPC2188 and south western area of EPC2135. Covers north and western section of EPM19292 (Figure 5.44).

October 1981 23 open holes totalling 1228 metres failed to intersect Oil Shale further exploration considered unwarranted and recommended relinquishment.

**Figure 5.44 – Historic EPM3111 underlay Current EPM19292**



EPM5970 - Dominion Mining Ltd

Report No: CR22555

Covers: western side of EPC2188, and south eastern portion of EPC2163. Covers eastern half of EPMa19063 and north western corner of EPM19292 (Figure 5.45)

Lack of outcrop through thick sediments and no aerodata magnetic coverage, meant targets weren't defined and area was recommended for relinquishment.

**Figure 5.45 – Historic EPM5970 underlay Current EPM19292 (green outline)**





### **5.3.9 Summary of Previous Work on EPMA19063 – Drummond West Pty Ltd**

*Lodged 10/02/2011*

The previous tenement holders over the current lease area are as follows.

#### **2000 - Present**

EPM17254 – *unknown*

No report on QDEX as at August 2012

EPM14931 - *unknown*

No report on QDEX as at August 2012

EPM14930 - *unknown*

No report on QDEX as at August 2012

EPM19292 - *unknown*

No report on QDEX as at August 2012

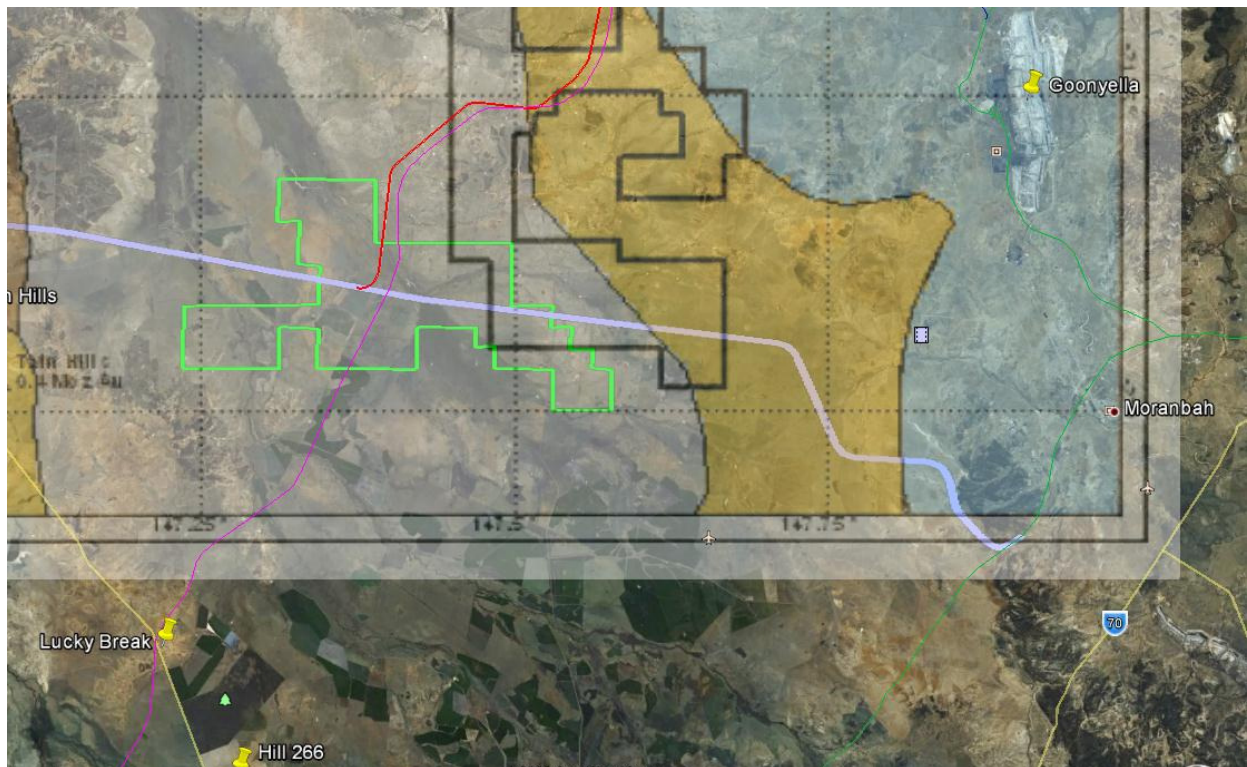
EPM11814 - Wirralie Mines Pty Ltd ( Ashburton Minerals Ltd)

Report No: CR39334

Covers: South western portion of EPC2135, southern half of EPC2188. EPM11814 also covers the northern railway corridor portion, of EPM19292 and the eastern area of EPMa19063 (Figure 5.46).

162 blocks surrendered in September 2004. Program for surrendering blocks included acquiring and processing regional geophysical data. A regolith study was also conducted to build upon geochemical database

**Figure 5.46 – Historic EPM11814 underlay Current EPMa19063 (green outline)**





## 1990 –1999

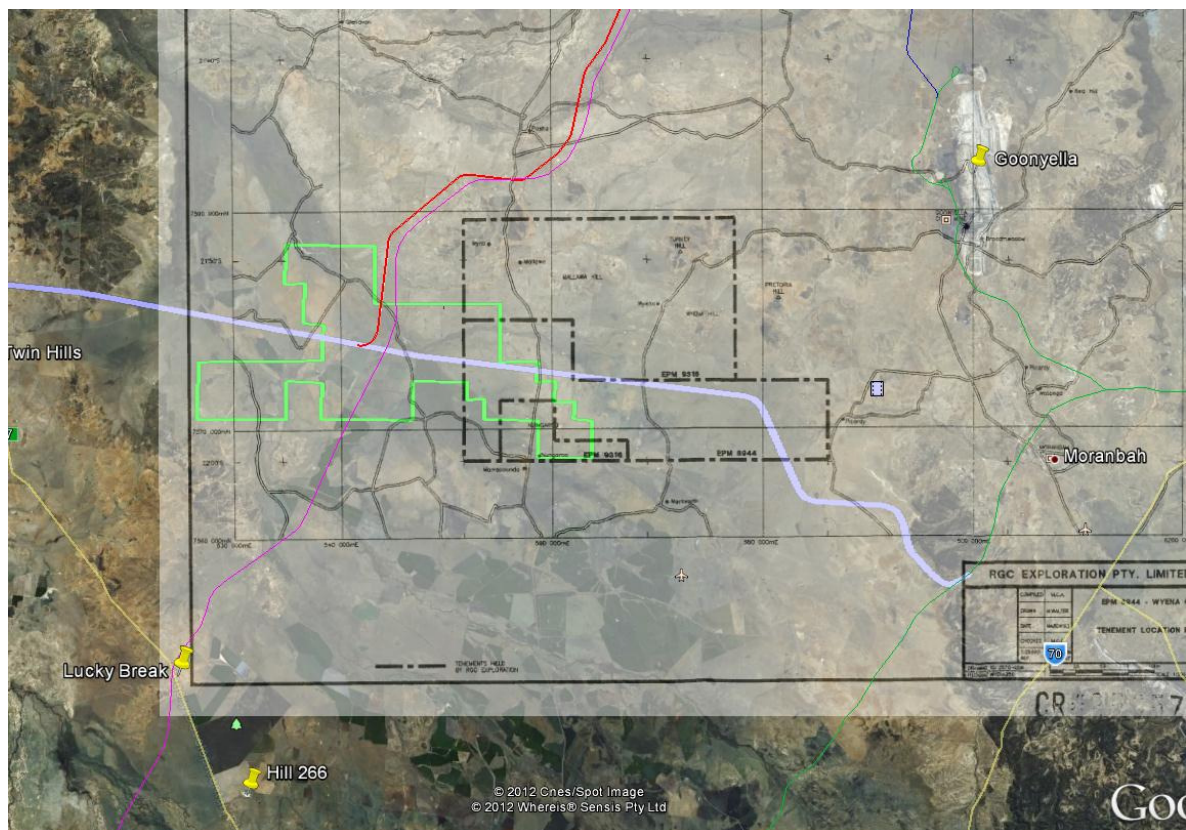
EPM8944 - consolidation of EPMs (8512, 8513 and 8611) RGC Exploration Pty Ltd

Report No: CR25657, 25198; EPM8611 CR24847

Covers: Railway portion of EPCs (2135 and 2188), south eastern region of EPC2163, northern region of EPC1244 and south western area of EPC 1069. Covers southern area of EPM19292 and EPMA19063 (Figure 5.47)

EPM8944 was a consolidation of EPMs (8512, 8513 and 8611) EPM9316. Program of works included, regional geological mapping, rock chip sampling, lag sampling, modelling anomalies from aeromagnetics survey and air core drilling in the west of the EPMs over structural features identified in aeromagnetics. Most of the area obscured by black soil or Tertiary and or Quaternary sediments and drilling below produced no significant anomalies from either tertiaries or bedrock. As a result of work EPM 8944 was relinquished by Renison Ltd.

**Figure 5.47 – Historic EPM8944 underlay Current EPMA19063 (green Outline)**



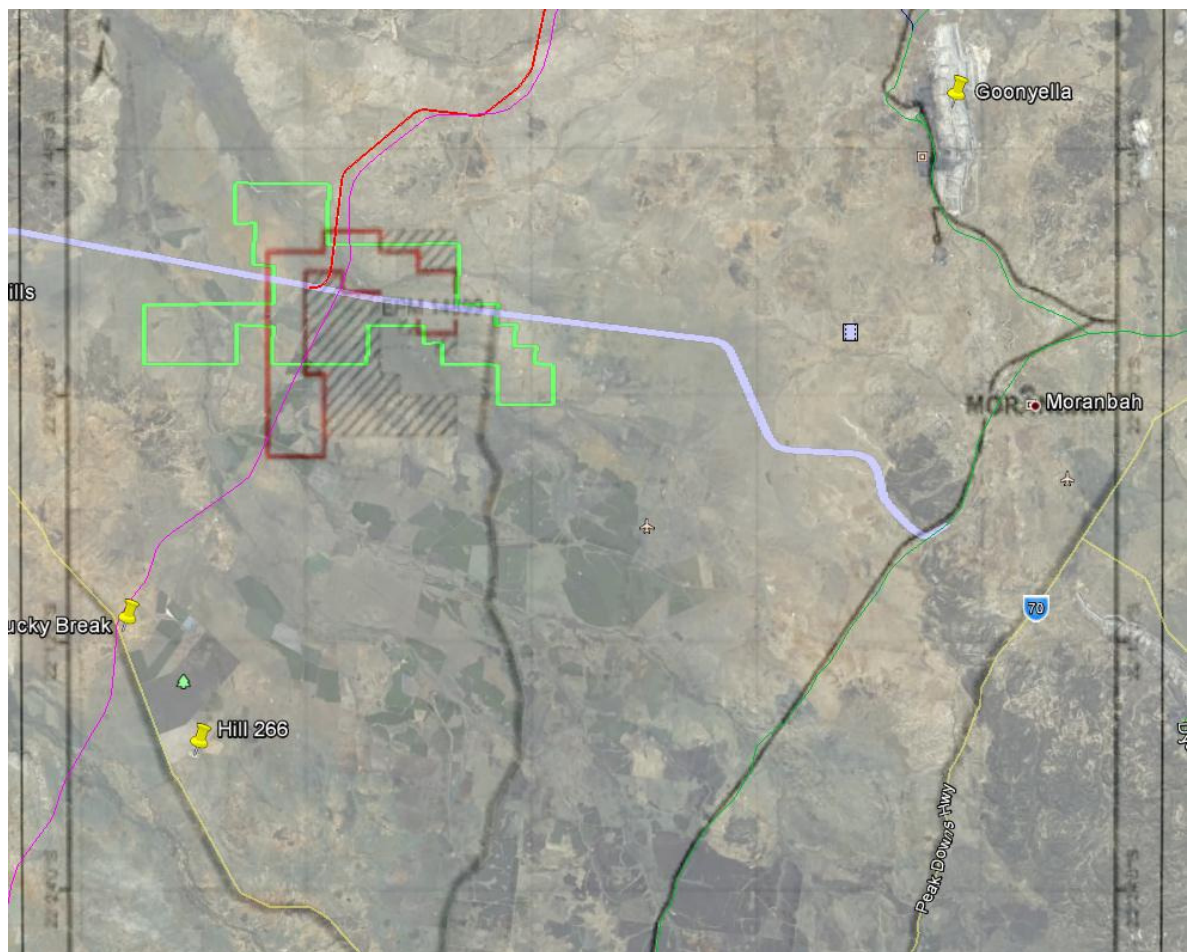
EPM14899 - Gold Finance and Exploration Pty Ltd

Report No: CR47035

Covers: EPMa19063 (Figure 5.48)

Partially relinquished due to the lack of anomalies and the presence of a thick sedimentary cover.

**Figure 5.48 – Historic EPM14899 underlay Current EPMa19063 (green outline)**





EPM6987 and EPM8036-Newcrest Mining Ltd

CR23610, 23199, 23629, 23050, 22587, 24552, 23944, 22818

Covers: Proposed railway corridor portion of central EPMa19063 covered in report.

Deemed unlikely to uncover a shallowly buried resource in areas tested and hence tenement was surrendered.

### 1980 - 1989

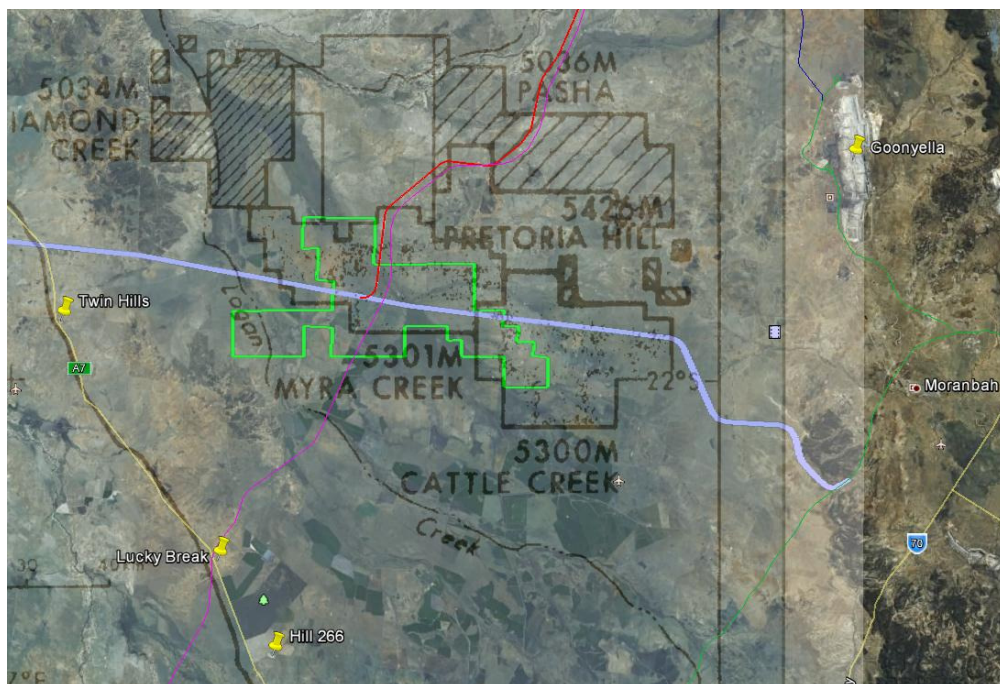
EPM5300 (Cattle Creek) and EPM5301 (Myra Creek)-Keela-Wee Exploration N.L.

Report No: CR19044

Covers: Rail Portion of central EPC2163 and EPC2188, southern and rail portion of EPCEPC2188. Also covers eastern margin of EPM14928, the rail portion of EPMa19063 and the northern and rail portion of EPM19292 (Figure 5.49).

EPMs were relinquished on 15<sup>th</sup> December 1988. Exploration program included assessing neighbouring data and soil sampling. 2km grid soil sampling over EPM5300 yielded one anomalous result. Poor results from neighbouring drilling and excessive soil cover downgraded the prospectivity of the EPMs. Program also included literature research, photogeological interpretation, field reconnaissance and BCL soil sampling. No significant assays were returned.

**Figure 5.49 – Historic EPM5300 and 5301 underlay Current EPMa19063 (green outline)**



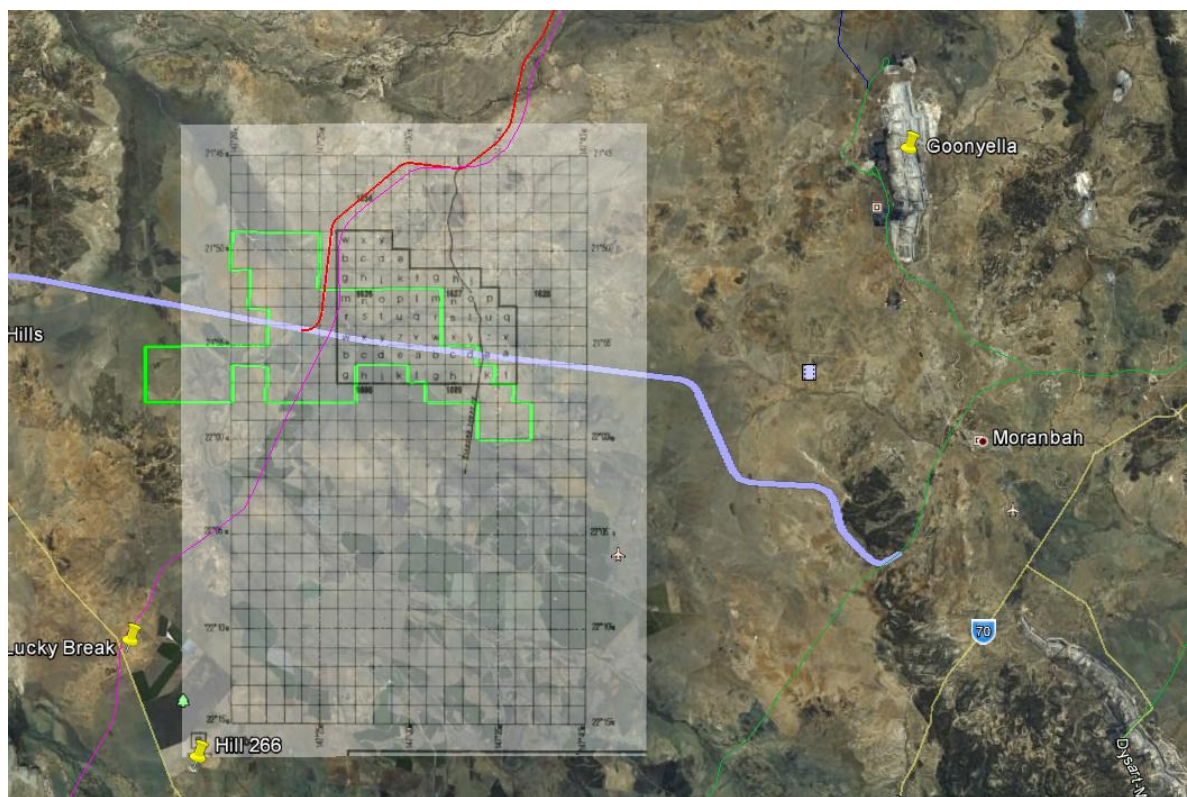
EPM5970 - Dominion Mining Ltd

Report No: CR22555

Covers: western side of EPC2188, and south eastern portion of EPC2163. Covers eastern half of EPMa19063 and north western corner of EPM19192 (Figure5.50)

Lack of outcrop through thick sediments and no aerodata magnetic coverage, meant targets weren't defined and area was recommended for relinquishment.

**Figure 5.50 – Historic EPM59701 underlay Current EPMa19063 (green outline)**





### 5.3.10 Summary of Previous Work on EPM14928 Drummond West Pty Ltd

*Lodged 04/01/2005, Granted 16/06/2006, Expires 15/06/2015*

The previous tenement holders over the current lease area are as follows.

#### 2000 - Present

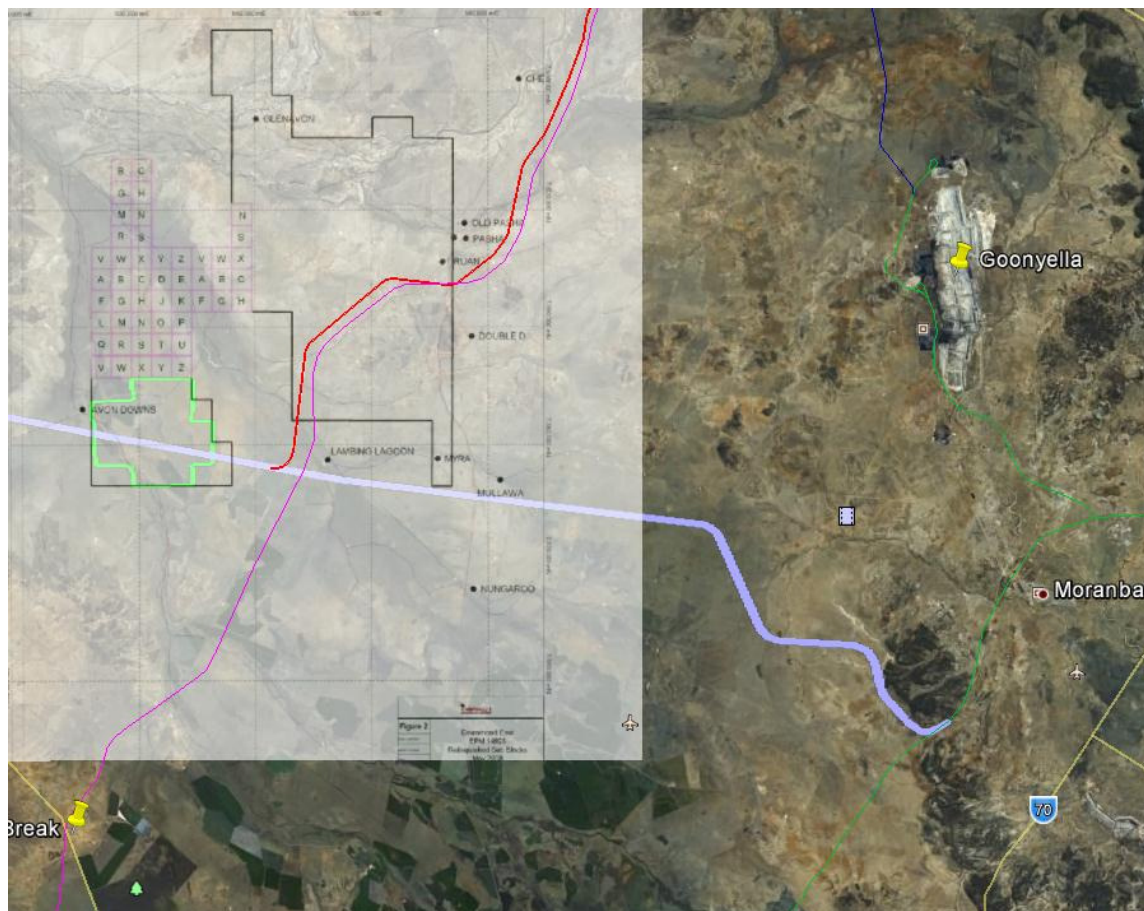
EPM14928 - Drummond West PTY LTD

Report No: CR52104

Covers: EPM14928 (Figure 5.51)

Partial relinquishment of blocks to the north of the proposed rail corridor. Sub blocks were relinquished due to interpreted unfavourable geology 16<sup>th</sup> June 2008.

**Figure 5.51 – EPM14928 blocks relinquished to current status (green outline)**



## 1980 - 1989

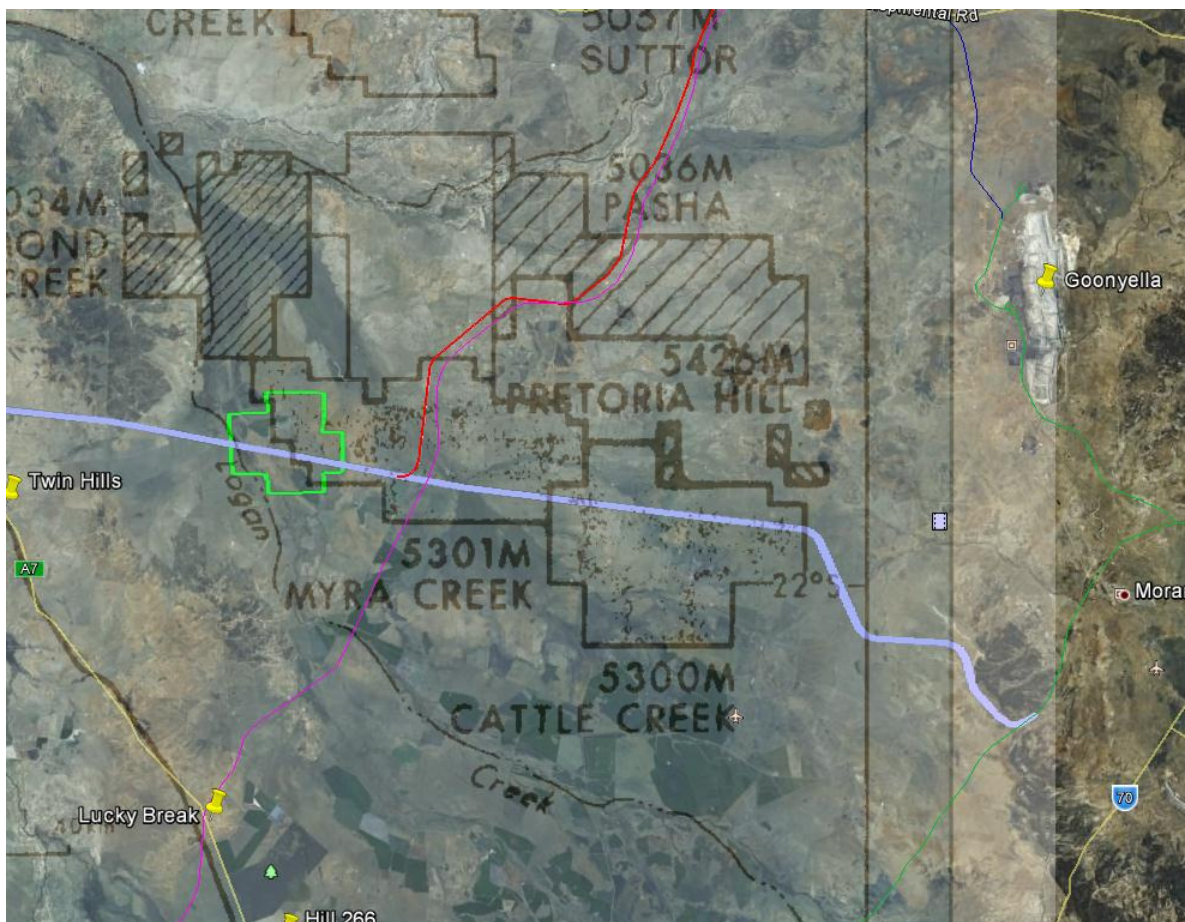
EPM5300 (Cattle Creek) and EPM5301 (Myra Creek)-Keela-Wee Exploration N.L.

Report No: CR19044

Covers: Rail Portion of central EPC2163 and EPC2188, southern and rail portion of EPCEPC2188. Also covers eastern margin of EPM14928, the rail portion of EPMA19063 and the northern and rail portion of EPM19292 (Figure 5.52).

EPMs were relinquished on 15<sup>th</sup> December 1988. Exploration program included assessing neighbouring data and soil sampling. 2km grid soil sampling over EPM5300 yielded one anomalous result. Poor results from neighbouring drilling and excessive soil cover downgraded the prospectivity of the EPMs. Program also included literature research, photogeological interpretation, field reconnaissance and BCL soil sampling. No significant assays were returned.

**Figure 5.52 – Historic EPM5301 and 5300 underlay Current EPM14928 (green outline)**





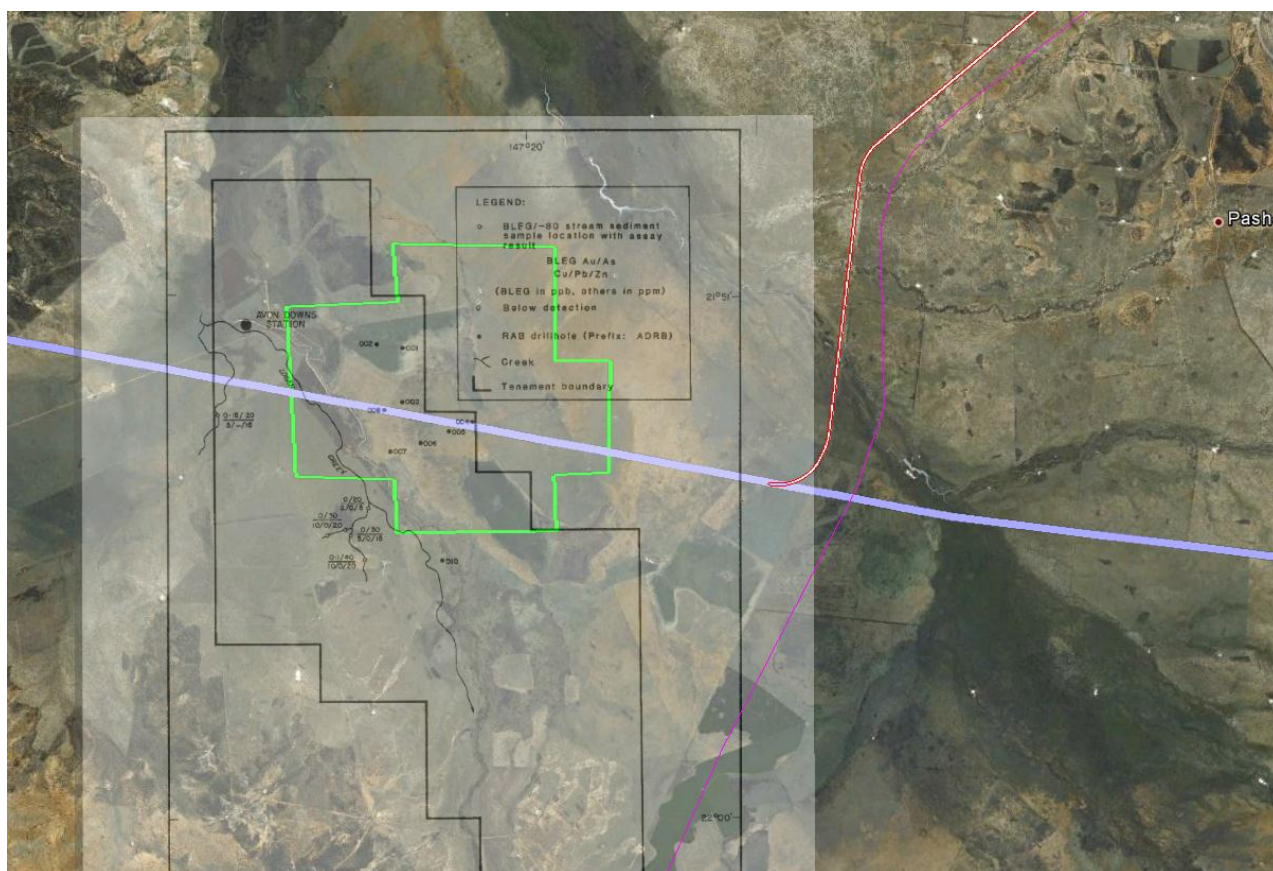
EPM4875 - Sabminco N.L. (Rhodes Resources Pty Ltd?)

Report No: CR21108, 17591, 21204, 18601

Covers: Western side of EPC2163. Covers western half of EPM14928 (Figure 5.53)

No evidence of gold mineralization was located in the tenements.

**Figure 5.53 – Historic EPM4875 underlay Current EPM14928 (green outline)**



### EPPs Incurred in Area 3 Eastern Branch

A map of the EPP tenements affected by the proposed rail line is included as Figure 5.54. The shaded areas are those covered by historic reports.

**Figure 5.54 – Current EPP's shading indicates areas covered historically**





### **5.3.11 Summary of Previous Work on EPP814 Eureka Petroleum Pty Ltd; Summary of Previous Work on EPP793 Diamond Creek Coal Pty Ltd**

EPP814: *Lodged 17/11/2004, Granted 02/02/2006, Expires 28/02/2018*

EPP793: *Lodged 03/06/2004, Granted 14/09/2004, Expires 30/09/2008 (Renewal Lodged)*

The previous tenement holders over the current lease area are as follows.

#### **2000 - Present**

EPP814 - (Eureka Petroleum Pty Ltd)

Report No: CR61140, 61141, 68161, 57393, 63423, 62056, 62058, 62053, 60432

Covers: Same as current Lease (Figure 5.54)

Tenement held since 2006. Program has included several drilled wells, all of which have occurred in the Bowen Basin to the east. Most reports recognize limited exploration and limited data available for tenement. There has been no drilling in area of rail easement to estimate prospectivity. The likelihood of methane potential in this region is speculative but based on limited presence of a significant coal resource there may be low potential.

#### **1980 – 1989**

EPP273 - Hematite Petroleum Pty Ltd

Report No: CR12187, 10814, 12386, 10064, 10062, 10063, 8947

Data from drilling to east in Bowen Basin – Inconclusive for area of interest under rail easement.

EPP364 - CH4 Pty Ltd and BHP Coal Pty Ltd, MGC Resources Aust Pty Ltd and Mount Isa Mines Ltd

Report No: CR40864, 17761, 25653, 33916, 33910, 25639, 40111, 40088, 40054, 25689, 38755, 30484, 25457, 39903, 25649, 40117, 63888.

Data from drilling to east in Bowen Basin – Inconclusive for area of interest under rail easement

## **1970 – 1979**

EPP239 - Leighton Mining N.L.et. al.

Report No: CR15423, 14939, 24803, 11648, 10704, 9858, 8229, 19172, 8083, 13514, 6748, 6906, 7514, 8081, 19372, 12744, 11433, 11647, 11871, 8080, 8082, 12914, 13721, 14940, 11649

Data predominately from Drummond Basin coal measures to the west and to the south. The large portion of EPP surrounding and to the north and east of Clermont was relinquished.

## **1950 – 1959**

EPP16 - Santos Ltd

Report No: CR40, 41, 39, 468, 463

Data from drilling to east in Bowen Basin – Inconclusive for area of interest under rail easement.

EPP56 - Associated Australian Oil Fields NI & Associated Freney Oil Fields NL

Report No: CR1185, 1803, 1659, 1452, 1748, 1635, 1539, 1471, 1658, 1031, 1709, 1806, 1379, 1548, 895, 847, 1632, 1437, 1660, 502,

Well data and seismic report data from drilling to east, in Bowen Basin – Inconclusive for area of interest under rail easement.