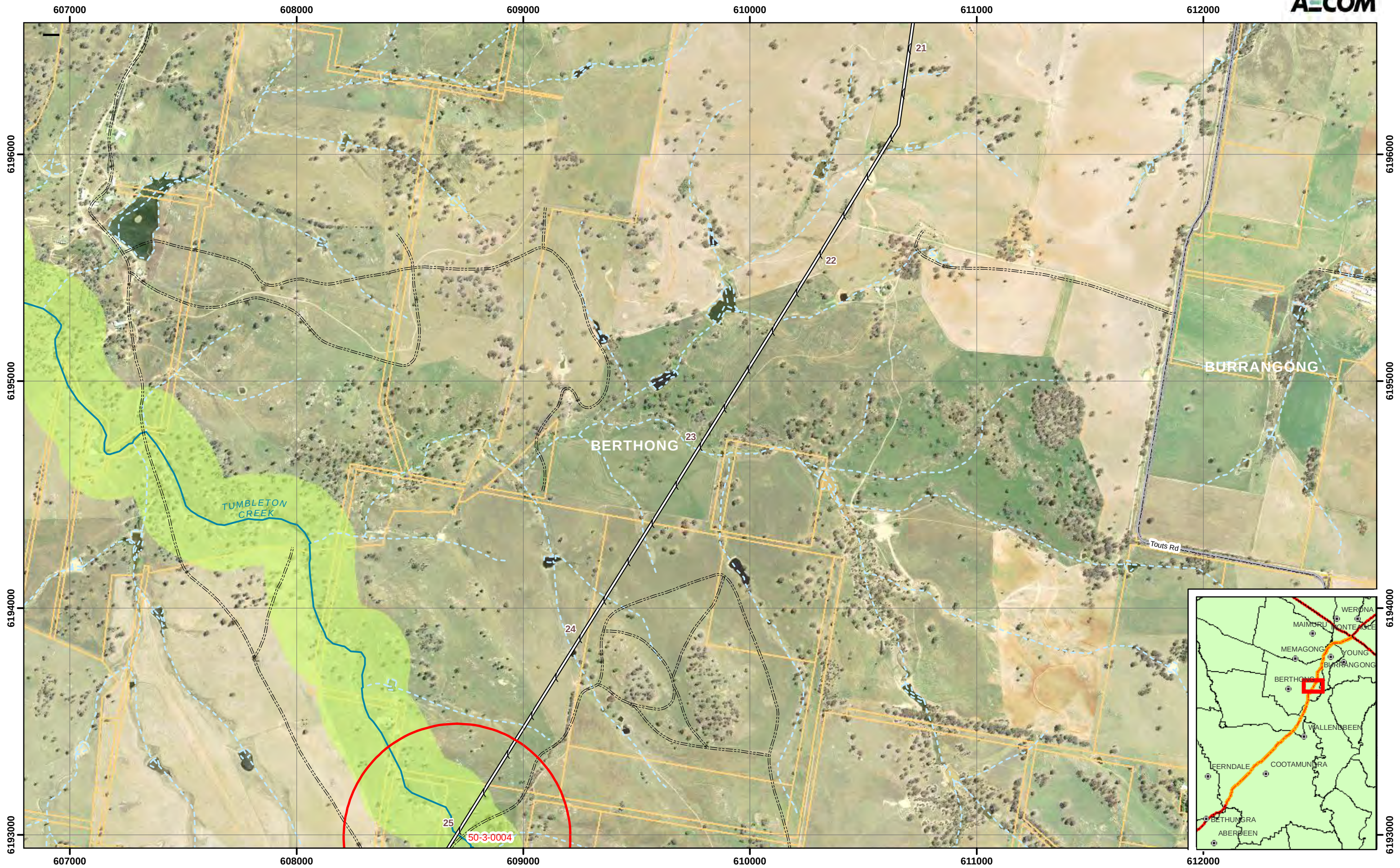




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|-------------------------------|------------------------|----------------|----------------------|---------------|-----------------|
| Registered AHIMS Sites | 200m Interval Point | Major Drainage | Built-up | Highway | Path |
| Cultural Heritage Sensitivity | Gas Pipeline Section 2 | Minor Drainage | Park/ Nature Reserve | Main Road | Private Road |
| Property Boundary | Suburb | | Connector Road | Unsealed Road | Vehicular Track |
| Railway | | | Local Road | | |

YOUNG - WAGGA WAGGA PIPELINE SECTION 2
AHIMS Registered Sites & Cultural Heritage Sensitivity

Source: LPMA (2010), StreetPro (2009)

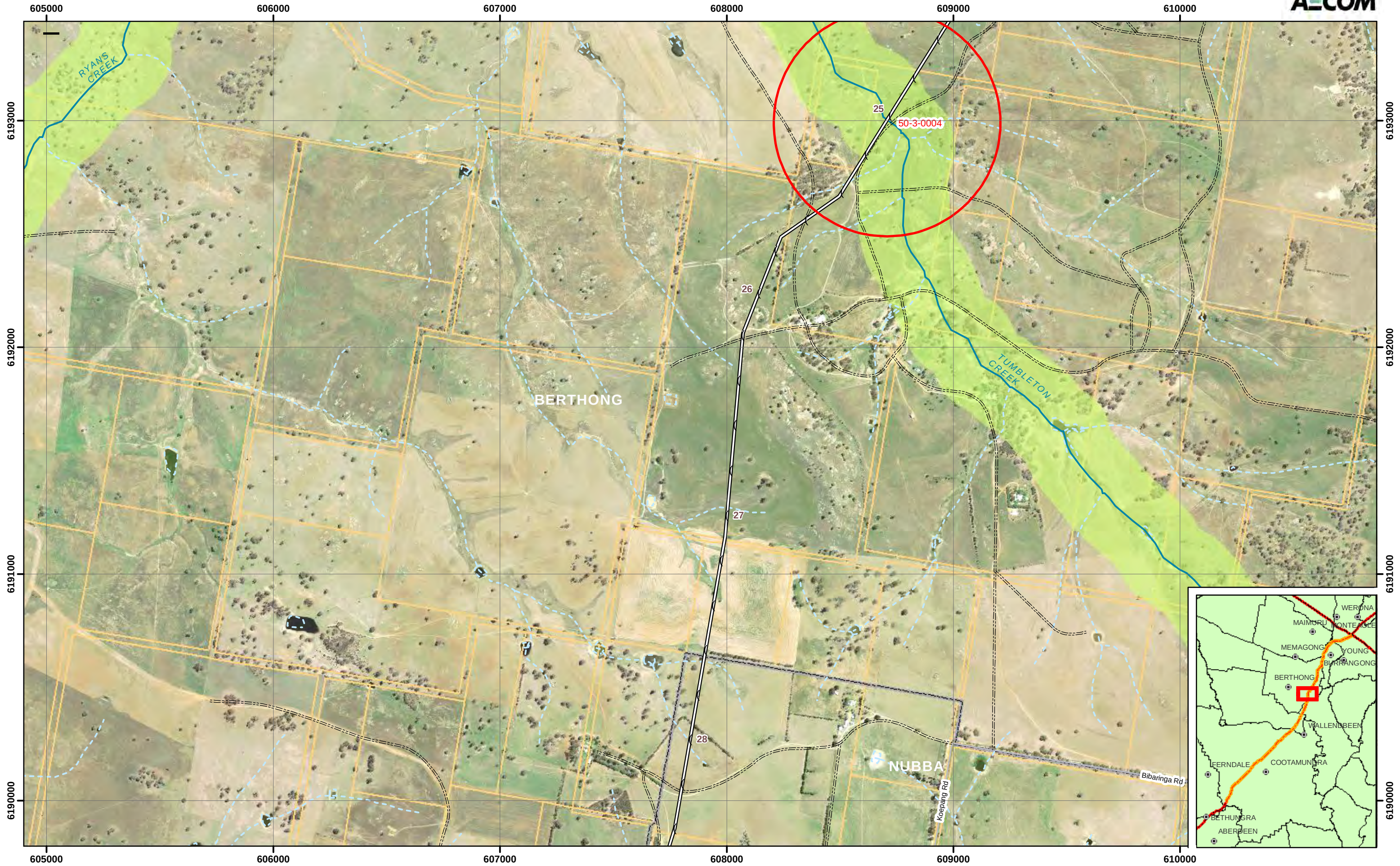


GDA94 - MGA Zone 55

APRIL 2012

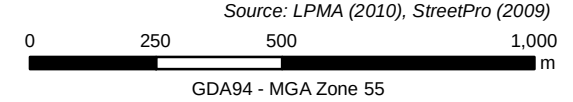
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Fig. **2.6**

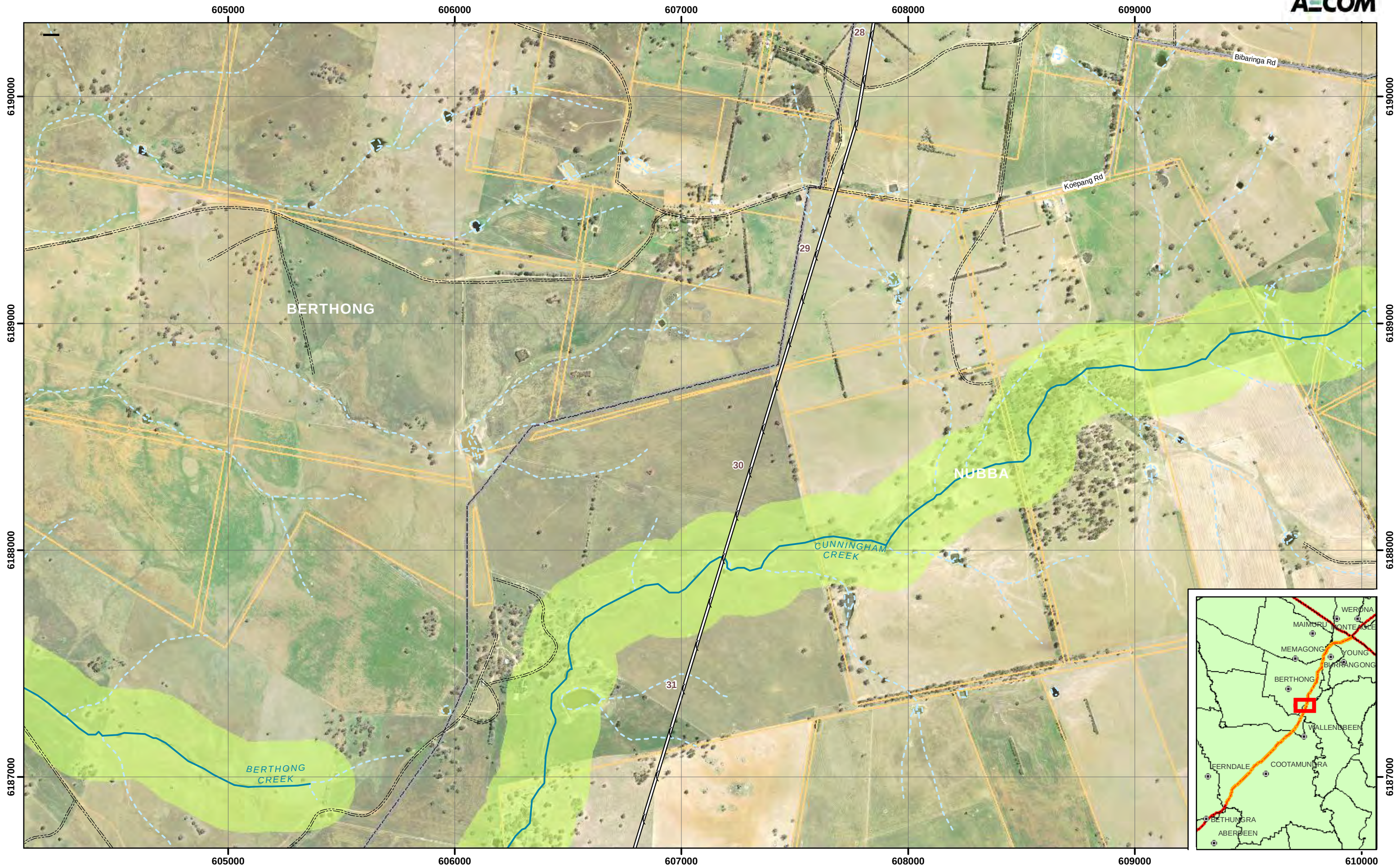


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|---------------------------------|-------------------------|----------------|----------------------|----------------|-----------------|
| () Registered AHIMS Sites | () 200m Interval Point | Major Drainage | Built-up | Highway | Path |
| ■ Cultural Heritage Sensitivity | Gas Pipeline Section 2 | Minor Drainage | Park/ Nature Reserve | Main Road | Private Road |
| | Property Boundary | | Suburb | Connector Road | Unsealed Road |
| | Railway | | | Local Road | Vehicular Track |

YOUNG - WAGGA WAGGA PIPELINE SECTION 2
AHIMS Registered Sites & Cultural Heritage Sensitivity



Source: LPMA (2010), StreetPro (2009)



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|-------------------------------|------------------------|----------------|----------------------|----------------|-----------------|
| Registered AHIMS Sites | 200m Interval Point | Major Drainage | Built-up | Highway | Path |
| Cultural Heritage Sensitivity | Gas Pipeline Section 2 | Minor Drainage | Park/ Nature Reserve | Main Road | Private Road |
| | Property Boundary | | Suburb | Connector Road | Unsealed Road |
| | Railway | | | Local Road | Vehicular Track |

YOUNG - WAGGA WAGGA PIPELINE SECTION 2
AHIMS Registered Sites & Cultural Heritage Sensitivity

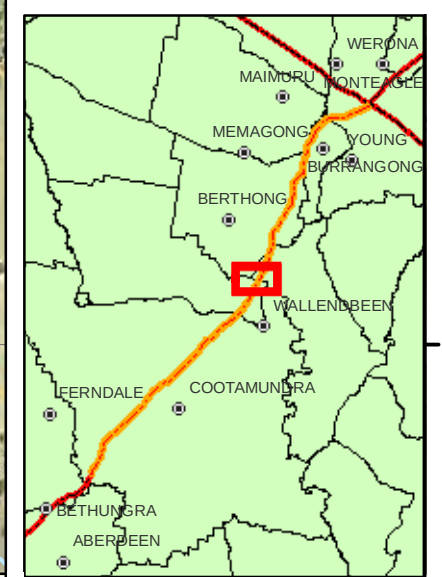
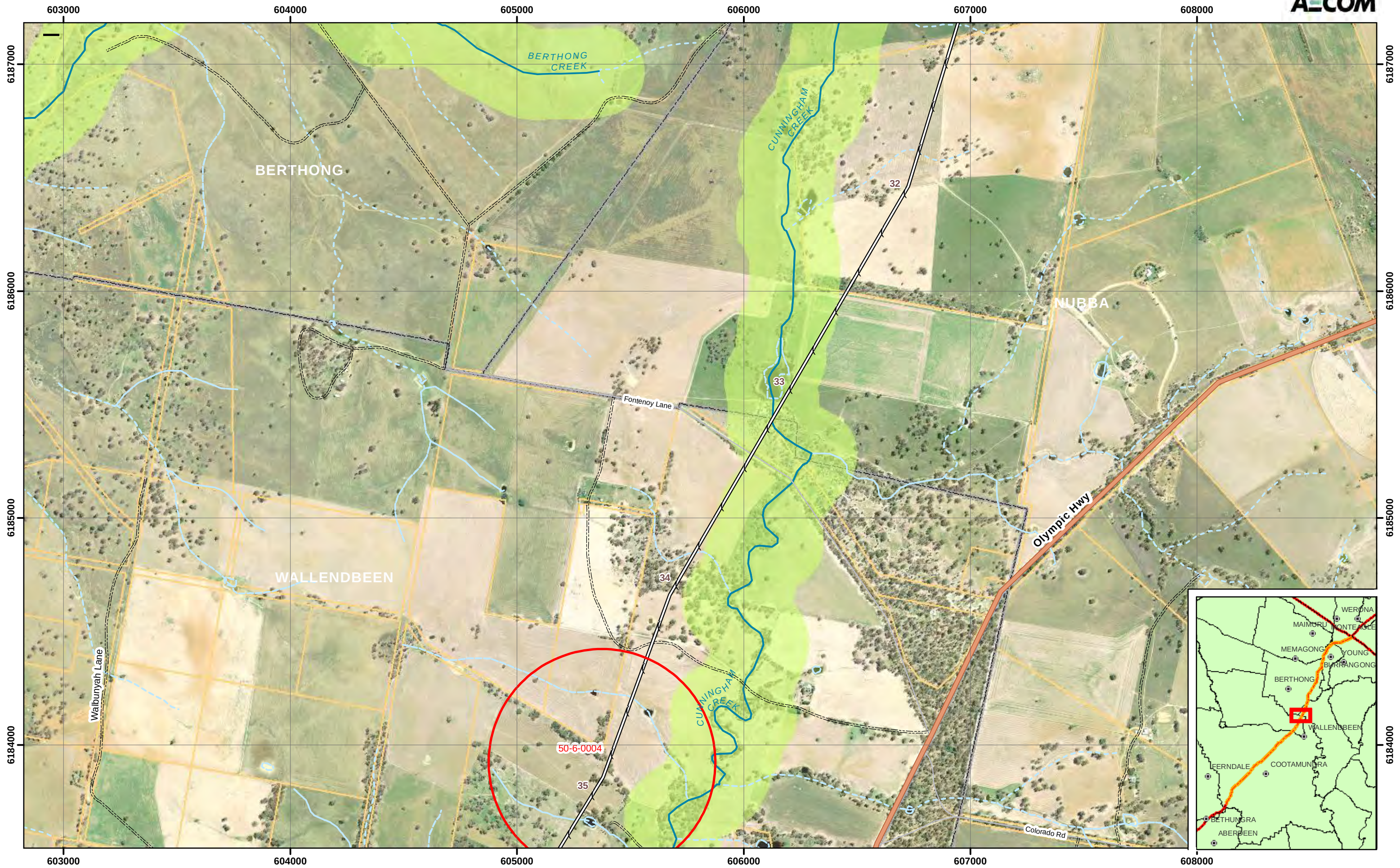
Source: LPMA (2010), StreetPro (2009)



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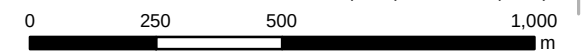
Fig. **2.8**



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|-------------------------------|------------------------|----------------|----------------------|---------------|-----------------|
| Registered AHIMS Sites | 200m Interval Point | Major Drainage | Built-up | Highway | Path |
| Cultural Heritage Sensitivity | Gas Pipeline Section 2 | Minor Drainage | Park/ Nature Reserve | Main Road | Private Road |
| Property Boundary | Suburb | | Connector Road | Unsealed Road | Vehicular Track |
| Railway | | | Local Road | | |

YOUNG - WAGGA WAGGA PIPELINE SECTION 2
AHIMS Registered Sites & Cultural Heritage Sensitivity

Source: LPMA (2010), StreetPro (2009)



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Fig. **2.9**

7.0 Archaeological Survey

7.1 Aims and Objectives

In keeping with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010*, the overarching aim of the survey undertaken was to identify, record and map Aboriginal heritage values within the project area. These values include both the tangible remains of past Aboriginal activity (i.e. archaeological evidence) as well as intangible cultural values. More specific survey objectives were as follows:

- 1) to re-locate and re-record all AHIMS registered Aboriginal archaeological sites within the project area;
- 2) to achieve a survey coverage that adequately reflects the variable archaeological potential of differing landform types within the project area;
- 3) to inspect, where appropriate, areas of known or potential Aboriginal cultural value, as identified by Aboriginal stakeholder representatives; and
- 4) to provide sufficient data to assist the design & development of the pipeline with appropriate recommendations and management options for the project area.

7.2 Survey Strategy

Prior to survey, six key influences on the sampling strategy to be developed were identified. These comprised:

- 1) the demonstrably large size of the pipeline alignment at c. 70 km;
- 2) the requirement for individual landholder access permissions;
- 3) the presence of areas of highly modified/disturbed terrain within the precinct;
- 4) poor to non-existent Ground Surface Visibility (GSV) across the vast majority of the precinct, with areas of higher visibility restricted to limited ground surface exposures;
- 5) the need to concentrate survey on landform types known to have higher archaeological potential; and
- 6) the known Aboriginal archaeology of the precinct and its environs.

Accordingly, prior to entering the field, it was decided that a targeted survey strategy involving the division of the pipeline easement into its constituent landform types and a proportional field emphasis on those considered to have higher archaeological potential (i.e. areas adjacent to creeks and those with known archaeological sites) would be adopted, with 'potential' defined on both practical and archaeological grounds. At the same time, in recognition of the above-mentioned access, disturbance and visibility issues, it was decided that decisions concerning the number, placement and length of transects would be made in the field.

7.2.1 Field Team and Methods

Survey of the precinct was conducted over five days (6-10 June 2011) by two AECOM archaeologists and four Aboriginal stakeholder representatives (Table 4). Three of the six registered Aboriginal stakeholder groups provided representatives for participation in the survey.

All survey was conducted on foot with a typical linear transect width of 40 m. The location of all transects was recorded using a hand held Trimble differential GPS, with additional transect data (e.g. landform, exposure, GSV, land use and disturbance) recorded separately. All mature trees were inspected for cultural scarring.

All Aboriginal archaeological sites identified during the survey were recorded to the standard required by the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010*. For each site located or re-visited, individual artefact locations were captured by differential GPS. Associated site data (e.g. location, type, content) was documented using AECOM's standard open site recording form. As a minimum, information recorded on stone artefacts included raw material, type and size (i.e. maximum length, width and thickness). Where more than 25 artefacts was identified within a site, recording was limited to a sample of 20 artefacts. Photographic records of each site were also taken. Finally, where provided, information concerning the cultural value(s) of recorded sites and their associated environmental characteristics was noted.

Table 4 Field survey team

Organisation	Representative(s)
AECOM Australia Pty Ltd (AECOM)	Luke Kirkwood & Luke Atkinson
Individual/Young LALC	Enid Clarke
Individual/Young LALC	Krystal Ingram
Individual/Young LALC	Keith Freeman
Individual/Young LALC	Jirrah Freeman

7.2.2 Survey Coverage and Limitations

A total of 16 pedestrian transects were completed over the five day survey, with transect lengths ranging from 1 km to 6 km. Because of the size of the project area (c.70 km), limited ground surface visibility and landholder access issues 100% coverage of the precinct was unfeasible. Accordingly, a survey strategy involving the division of the project into its constituent landform types and a proportional field emphasis on those considered to have higher archaeological potential - in this case, creek flats (aggrading & flood prone) and shallow rises - was adopted. This strategy proved effective in sampling a representation of landforms within the study area. For each transect, any areas of acceptable ground surface visibility were inspected by pedestrian survey. In some cases, vehicular inspection was used in places due to extensive thistle infestation across the study area. Thistle infestation also significantly reduced ground surface visibility to 0% in these areas.

7.3 Results

Description of Aboriginal and historic archaeological sites identified by AECOM 2011, including comparison with previously conducted surveys is provided in Sections 7.3.1, 7.3.2 and 7.3.3. Figures showing the Aboriginal and historic archaeological sites identified are provided in Section 9.2 Figures 5.1 to 5.18.

7.3.1 Previously Recorded Aboriginal Archaeological Sites

Site ID: 50-3-0002

Site Name: Young (BY/12)

Co-ordinates: 613827mE 6205834mN GDA 94 (Zone 55)

Approximate Kilometre Point: 10.8

Site Description: 50-3-0002 is a low-density artefact scatter within a ploughed field extending approximately 150m x 390m. Located on a lower slope adjacent to a natural drainage channel and east of Stony Creek & Milly Milly Lane. The site is centred around the intersection of the pipeline easement and an electrical power line easement.

Previous Assessments: Witter (1980) identified this site during the original pipeline easement heritage survey noting the existence of two main archaeological zones. Zone A centred around the intersection of the pipeline easement and electrical power line easement contained the main concentration of artefacts, with Zone B consisting of light background scatter.

The majority of artefacts (n=80) consisted of extensive quartz debitage and one quartz core. He also observed debitage composed of a hornfels-like material with at least one comprising of a flake tool. Witter theorized that this was possible a 'domestic type of site typical for the area'. Witter recommended the following management conditions for the site: surface collection for tools; sieve sample collection and test pitting.

2011 AECOM Survey: This site was relocated using Witter's site plan recorded on the site card. While the general area was covered in angular quartz fragments, only three definite quartz artefacts were identified. These included a proximal and medial flake and one quartz core located near an electrical power line pole. No hornfels-like material was observed. Ground surface visibility was reduced within the general area as low grass cover covered the site.

Ground disturbance in the area included the ploughing of the field, the extant pipeline easement and the single powerline pole within the site. Despite the presence of this surface disturbance within the area, there remains potential for intact sub surface material to be present.



Plate 4 – Young (BY/12) (50-3-0002)

Context photo looking south towards electrical power line pole. Stony Creek can be seen as the tree line to the right of the shot. Grass cover can be seen across the site.



Plate 5 – Young (BY/12) (50-3-0002)

Two quartz flakes identified near the electrical power line pole

Site ID: 50-3-0003**Site Name:** Stony Creek (BY/13)**Co-ordinates:** 612588mE 6202492mN GDA 94 (Zone 55)**Approximate Kilometre Point:** 14.4

Site Description: 50-3-0003 is a low-density artefact scatter located on the southern bank of a heavily incised and deep gully that leads into Stony Creek to the east. Mostly cleared for pastoral grasses, the site is comprised of quartz, tuff and chert flakes and cores and suffers from erosional damage to its northern boundaries

Previous Assessments: Witter (1980) identified this site during the original pipeline easement heritage survey observing the majority of artefacts were the result of 'quartz chipping debris' and found along the eroding southern bank of the gully. Witter identified 30 quartz artefacts, 24 "hornfels" artefacts, one "chert" flake and a possible basin shaped charcoal hearth about 2 metres across and 24 centimetres wide. Witter theorized that the site was an extension of general occupation concentrated where the gully met Stony Creek 500 metres to the north of the site. His recommendations for the site included: total surface collection; limited salvage excavation testing the possible hearth and the vertical sectioning of the gully bank to understand the depositional history of the site.

2011 AECOM Survey: This site was relocated using Witter's site plan recorded on the site card and found to extend 90 metres by 10 metres on the southern side of the gully. 55 artefacts were identified with the majority being predominately quartz (n=42). The remaining artefacts were comprised of flakes of green tuff (n=8) and black chert (n=5). It is believed that Witter's "hornfels" category is likely to be the green tuff identified at this site. No evidence of a hearth was identified during the survey, it is possible this featured may have washed away or was covered by pasture grasses.

The soil profile from the eroded bank identified three main sedimentary units. The top 'A-horizon' comprised 5 centimetres of a light yellow sandy layer (possibly aeolian in origin). This immediately overlaid a dark yellow clay deposit which extended three to four metres down to an ancient orange clay. The roughly 3 metre in depth orange clay deposit was found to sit on top of a granite bedrock. Artefacts were found to occur within the first five centimetres of deposit (the A-horizon). Significant erosion was observed along the northern boundaries of the site with artefacts found eroded out of the banks into the gully.



Plate 6 – Stony Creek (BY/13) (50-3-0003)

Context photo looking west along southern banks of gully. Artefacts are flagged with pink flags. Extensive sheet erosion can be seen along the southern bank of the gully.



Plate 7 – Stony Creek (BY/13) (50-3-0003)

Selection of quartz and green tuff artefacts identified within the main concentration of artefacts at 50-3-0003.

Site ID: 50-3-0004

Site Name: Wombat (BY/14)/ Tumbleton Creek

Co-ordinates: 608751mE 6192998mN GDA 94 (Zone 55)

Approximate Kilometre Point: 25

Site Description: 50-3-0004 is a low-density artefact scatter located on the both sides of the banks of Tumbleton Creek. Measuring 120 x 360m, the main component of the site is found on the higher southern side of the site.

Previous Assessments: Witter (1980) identified this site during the original pipeline easement heritage survey observing the majority of artefacts were quartz debris with some hornfels-like material. Two quartz cores , one broken quartz backed blade and a blade tool were identified on the northern banks, with the majority of quartz debris being identified on the southern bank.

2011 AECOM Survey: This site was relocated using Witter's site plan recorded on the site card. 7 artefacts were identified with six being angular quartz fragments and one chert flake. Low ground surface visibility characterized the site and it is likely that subsurface deposits exist.



Plate 8 – Wombat (BY/14)/Tumbleton Creek (50-3-0004)

Context photo looking west along Tumbleton Creek. Site exists along both sides of the creek.



Plate 9 – Wombat (BY/14)/Tumbleton Creek (50-3-0004)

Red chert flake identified on northern bank of the Tumbleton Creek.

Site ID: 50-5-0007

Site Name: Frampton (BY/9)

Co-ordinates: 582819mE 6159135mN GDA 94 (Zone 55)

Approximate Kilometre Point: 69

Site Description: 50-5-0007 is a low-density artefact scatter located on slope of a ridge overlooking Cunjegong Creek. Measuring 4 x 10m, the site was previously located on a slope in a thistle patch with limited ground surface visibility.

Previous Assessments: Witter (1980) identified this site during the original pipeline easement heritage survey locating 8 artefacts with mostly of quartz with some hornfels-like material. Two quartz cores, and one quartzite and one silcrete flake were identified within the site.

2011 AECOM Survey: Despite extensive survey of the area identified by Witter (1980), this site could not be relocated. It is likely that limited ground surface visibility through pastoral grasses inhibited the survey team's ability to relocate this site.



Plate 10 – Frampton (BY/9) (50-3-0007)

Context photo looking east towards the Olympic Highway and Cunjegong Creek.

Site ID: 50-6-0002

Site Name: Cootamundra (BY/10)

Co-ordinates: 591265mE 6169619mN GDA 94 (Zone 55)

Approximate Kilometre Point: 55.2

Site Description: 50-6-0002 is a low-density artefact scatter located on the southern side of a gully overlooking the Hodgman's Tank area. The gully and tank area are part of a low lying area that feeds the Muttama Creek watershed.

Previous Assessments: Witter (1980) identified this site during the original pipeline easement heritage survey identifying 35 quartz artefacts with some hornfels-like material. One flake tool was identified comprised of this hornfels rock with a possible hammerstone also identified.

2011 AECOM Survey: This site was relocated using Witter's site plan recorded on the site card. Only one possible quartz flake was identified at the site's location. Heavy revegetation with young eucalypts had substantially reduced ground surface visibility. The area also showed evidence of extensive ground disturbance through the creation of dams and contour banks



Plate 11 – Cootamundra (BY/10) (50-6-0002)

Context photo looking east across main area of site as described by Witter 1980



Plate 12 – Cootamundra (BY/10) (50-6-0002)

Single possible quartz flake identified within Witter's Zone A concentration of artefacts.

Site ID: 50-6-0003

Site Name: Muttama Creek (BY/11)

Co-ordinates: 593416mE 6171191mN GDA 94 (Zone 55)

Approximate Kilometre Point: 52.6

Site Description: 50-6-0003 is a large lithic scatter located on the eastern side of Berthong Road, east of a small tributary of Muttama Creek. Comprised of 182 stone fragments predominately composed of quartz angular fragments, the site extends over 500 metres and contains unique artefacts such as stone axes and anvils.

Previous Assessments: Witter (1980) identified this site during the original pipeline easement heritage survey identifying it as a general scatter of 121 mainly quartz artefacts, with a singular porcellanite and silcrete flakes also recorded. Witter recommended surface collection and test and salvage excavation to be conducted for areas both east and west of the road.

2011 AECOM Survey: This site was relocated using Witter's site plan recorded on the site card. 182 stone fragments were identified immediately either side of the gas pipeline easement with the majority of artefacts being located nearest to the road. While the majority of stone fragments represented angular quartz pieces with no diagnostic artefactual features, two unique lithic artefacts were identified within the site complex. These included a stone axe made of a likely basaltic material and a quartzite circular anvil with obvious pecking occurring in the centre of the disc.



Plate 13 – Muttama Creek (BY/11) (50-6-0003)

Hand axe identified at Muttama Creek (BY/11)



Plate 14 – Muttama Creek (BY/11) (50-6-0003)

Broken quartzite anvil identified. Impact marks can be seen in the centre bottom of the artefact.

Site ID: 50-6-0004 **Site Name:** Connaughtmans Creek/Wallendbeen (BY/16)

Co-ordinates: 605467mE 6183793mN GDA 94 (Zone 55) **Approximate Kilometre Point:** NA

Site Description: 50-6-0004 was a dead scarred tree with a single scar measuring 293cm in length. The tree was destroyed in a bush fire sometime in the last ten years.

Previous Assessments: Witter (1980) identified this site during the original pipeline easement heritage survey. Measuring 239 cm by 51 cm, the oval shaped scar was located above a ring barked section of the trunk.

2011 AECOM Survey: Despite extensive initial survey, this scarred tree could not be located. Discussions with the landowner indicated that the tree in question had burnt down in a bush fire within the last ten years. No remains of this tree were found to have survived.



Plate 15 – Connaughtmans Creek/Wallendbeen (BY/16) (50-6-0004)

General area near probable location of 50-6-0004

7.3.2 New Aboriginal Archaeological Sites

Site Name: APA-AS1-11

Co-ordinates: 617082mE 6208655mN GDA 94 (Zone 55)

Approximate Kilometre Point: 6.2

Site Description: APA-AS1-11 is a small artefact scatter of 8 lithics composed predominately quartz. The site is located on the southern bank of a tributary of Burragong Creek and east of Henry Lawson Way.



Plate 16 – APA-AS1-11

General context of APA-AS1-11 looking north towards the adjacent tributary of Burragong Creek.



Plate 17 – APA-AS1-11

Orange chalcedony flake identified as part of APA-AS1-11

Site Name: APA-AS2-11

Co-ordinates: 616533mE 6208655mN GDA 94 (Zone 55)

Approximate Kilometre Point: 6.8

Site Description: APA-AS2-11 is a small artefact scatter located on a shallow rise and is composed of 5 lithics of predominately quartz with one flake of tuff and one of banded chert. The site is located on the southern bank of a tributary of Burragong Creek, east of Henry Lawson Way and west of site APA-AS2-11.



Plate 18 – APA-AS2-11

General context of APA-AS2-11 looking west towards Henry Lawson Way.



Plate 19 – APA-AS2-11

Quartz flake identified as part of APA-AS2-11

Site Name: APA-AS3-11

Co-ordinates: 606059mE 6185519mN GDA 94 (Zone 55)

Approximate Kilometre Point: 33.15

Site Description: APA-AS3-11 is a small artefact scatter on the southern slope of a drainage channel and is composed of 6 quartz artefacts. The site is located west of Conaughtmans Creek near a large dam.



Plate 20 – APA-AS3-11

Shot of APA-AS3-11 looking north towards dam.



Plate 21 – APA-AS3-11

Quartz flake identified as part of APA-AS3-11

Site Name: APA-IA1-11

Co-ordinates: 616184mE 6208559mN GDA 94 (Zone 55)

Approximate Kilometre Point: 7.1

Site Description: APA-IA1-11 is an isolated quartz artefact located during the field survey in a ploughed field near Henry Lawson Way and McHenry's Creek. It is located 200m west of APA-AS2-11. Despite extensive ground surface visibility, no evidence of further archaeological material was non-existent.



Plate 22 – APA-IA1-11

Pink flag marks the location of archaeological site APA-IA1-11 within ploughed field.

Site Name: APA-IA2-11

Co-ordinates: 602407mE 6179901mN GDA 94 (Zone 55)

Approximate Kilometre Point: 39.9

Site Description: APA-IA2-11 is an isolated quartz artefact located during the field survey in a ploughed field overlooking a remnant swamp just south of Burley Griffin Way within the pipeline easement. It is located 150m south west of APA-IA3-11. Despite extensive ground surface visibility, no evidence of further archaeological material was non-existent.



Plate 23 – APA-IA2-11

Pink flag marks the location of archaeological site APA-IA2-11 within ploughed field.

Site Name: APA-IA3-11

Co-ordinates: 602534mE 6180000mN GDA 94 (Zone 55)

Approximate Kilometre Point: 39.7

Site Description: APA-IA3-11 is an isolated quartz artefact located during the field survey in a ploughed field overlooking a remnant swamp just south of Burley Griffin Way within the pipeline easement. It is located 150m north east of APA-IA2-11. Despite extensive ground surface visibility, no evidence of further archaeological material was non-existent.



Plate 24 – APA-IA3-11

Pink flag marks the location of archaeological site APA-IA3-11 within ploughed field.

Site Name: APA-ST1-11

Co-ordinates: 613485mE 6205632mN GDA 94 (Zone 55)

Approximate Kilometre Point: 34.3

Site Description: APA-ST1-11 is a large scarred tree located outside of the pipeline easement on Milly Milly Lane next to Stony Creek. The tree is located 400 metres to the south west of AHIMS registered site 50-3-0002. The largest of the five scarred tree identified with a tree girth of 505cm, the symmetrical scar measured approximately 286 cm and appeared to be in good condition. While the tree is outside of the pipeline easement and therefore unlikely to be impacted, its location should be noted during the construction planning stage as an area of avoidance.

Site Name: APA-ST2-11

Co-ordinates: 605480mE 6184440mN GDA 94 (Zone 55)

Approximate Kilometre Point: NA

Site Description: APA-ST2-11 is a large scarred tree located on a fence line 100 metres to the west of the centre of the pipeline easement. Unusual and almost circular, the scar measured 81 centimetres in length and is found on a mature tree with a girth of 464 cm.



Plate 25 – APA-ST2-11

Close up of scar on tree at APA-ST2-11

Site Name: APA-ST3-11

Co-ordinates: 605400mE 6183672mN GDA 94 (Zone 55)

Approximate Kilometre Point: 35.1

Site Description: APA-ST3-11 is a hollowed out tree stump with a large scar located at its base. Approximately 100 metres from the centre of the pipeline easement, the dead tree stump suffers from extensive termite damage with the hollow marking the scar measuring approximately 117 cm in length and being roughly symmetrical in shape.



Plate 26 – APA-ST3-11

Large hollow scar tree APA-ST3-11

Site Name: APA-ST4-11

Co-ordinates: 606795mE 6184113mN GDA 94 (Zone 55)

Approximate Kilometre Point: NA

Site Description: APA-ST4-11 is a large scarred tree located on Fontenoy Lane that was identified during attempts to access properties within the vicinity. The scar measures 265 centimetres and was most likely represents a canoe or bark hut roofing scar. This large red gum is located outside of the pipeline easement and therefore unlikely to be impacted, but its location is noted to assist in the development of access procedures.

Site Name: APA-ST5-11

Co-ordinates: 591285mE 6169670mN GDA 94 (Zone 55)

Approximate Kilometre Point: 55.2

Site Description: APA-ST5-11 is a symmetrical scar that is located on a split trunk. The scar measures 91 centimetres and is unusual in that the epicormic stem (A subsidiary limb on a tree bole, caused by a traumatic event) is similar in size to the original trunk creating a forked trunk.



Plate 27 – APA-ST5-11

Scarred tree APA-ST5-11 showing a distinct symmetrical scar.

7.3.3 Historic Archaeological Sites

Site Name: Old Nubba Homestead

Co-ordinates: 605508mE 6183674mN GDA 94 (Zone 55)

Approximate Kilometre Point: 35

Site Description: The Old Nubba Homestead is a ruin building and historic archaeological deposit located 200 metres east of the proposed pipeline route and is approximately 2 hectares in area. The ruins principally consist of two standing stone fire places (living room & kitchen) and a collapsed fabric of wooden walls and a corrugated iron roof. The surrounding areas are littered with historic cultural material including bricks, intact bottles, ceramics, metalwork and farm equipment.

Site History: Following identification of this site, an investigation of the site's history determined that the area was originally claimed in 1832 (and illegally squatted) as part of a larger pastoral run by Edward Ryan, an ex-convict who later settled at Galong. Nubba Station was one of a number of homesteads that Ryan had built to service his extensive holdings.

The Crown Plan (144-1716) for Lot 32 within the Parish of Nubba, County Harden, provides some information regarding the area. William Bowen applied for a Conditional Purchase under the Crown Lands Alienation Act of 1861. The charting for the application was undertaken on 29 July 1867. The property is described as having "Considerable Local Attraction", "Good Land" and "Open Gum & Apple Forest" in the western part of the allotment. The plan indicates a house and garden, the garden being a rectangular fenced area.

An application for Lot 31 to the east was made at the same time by Thomas Bowen, probably William's son or brother. The Crown Plan (CP143-1716) indicates the only structure on the property as "Nubba Old Hut" to the

north west, across Connaughtman's Creek. Some improvements, in the form of fencing, had been undertaken. The land is also described as having "Considerable Local Attraction".

Lot 161 to the north was applied for at a later date by John Franklin McMullen (Crown Plan 3805-1716). The accompanying map indicates a woolshed, sheds, stockyard, huts, sheepwash with associated dam and extensive fencing. Although applied for by McMullen, it appears that the structures were associated with the operation of Nubba and the Bowen family across the road. The land is described as being "Open Box & Apple Forest" with "Good Red Soil". The Crown Plan also indicates that a track was in use to access the complex, rather than the surveyed road.

The Cootamundra Shire Council website (<http://www.cootamundra.local-e.nsw.gov.au/about/1001/1008.html>) indicates that the first elected mayor of Wallendbeen was Peter Sinclair of "Nubba Station" in 1892. This possibly indicates the Bowen family had sold their land by this stage.

The three lots appear to have been consolidated into one holding, as when the Nubba Station holdings were subdivided for sale in 1891 the three were reserved. The subdivision plan indicates an extensive complex of buildings, spread across both sides of the road, together with fenced areas of cultivation, woolshed and a Homestead (Figure 3).



Plate 28 – Old Nubba Homestead

Stone kitchen fireplace with recessed storage area



Plate 29 – Old Nubba Homestead

Ceramic artefact identified within Old Nubba Homestead complex

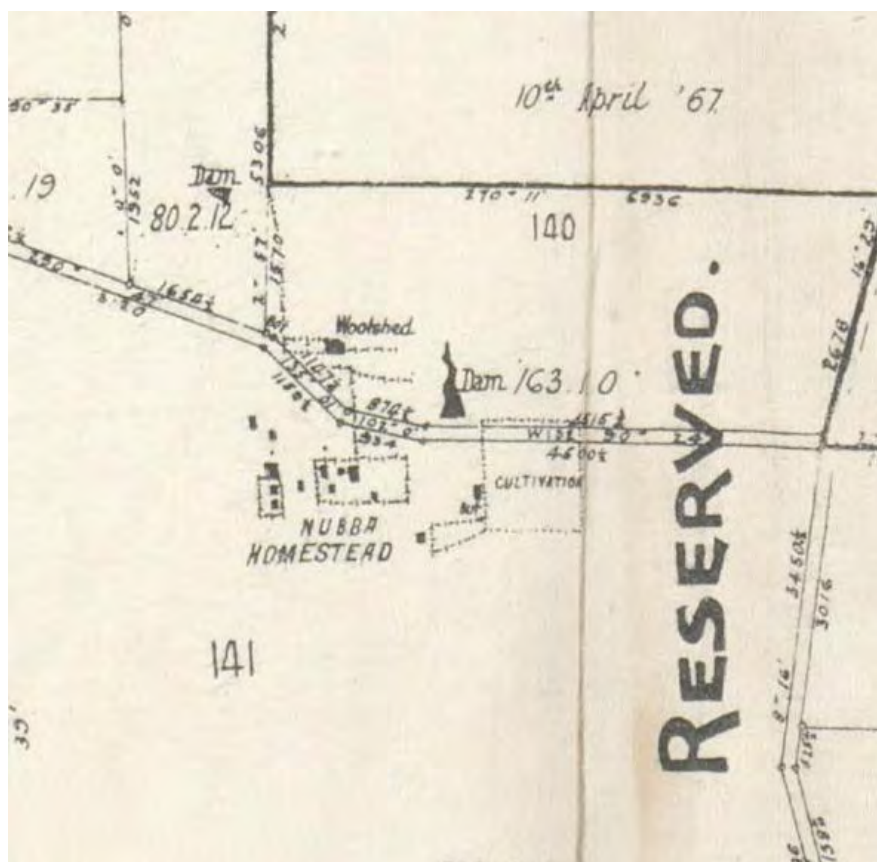


Figure 3 – Detail of 1891 subdivision plan for the Nubba Station holdings in 1891. Visible on the map are the location of the homestead, woolshed, and cultivation areas. (NSW State Library - Call No:ZCP:H1/9.1)

8.0 Significance Assessment

8.1 Defining Cultural Significance

Heritage sites, objects and places hold value for communities in many different ways. The many heritage values are summed up in an assessment of “cultural significance”.

The primary guide to management of heritage places is the Australia ICOMOS Burra Charter 1999. Article 1.2 of the Burra Charter defines cultural significance as follows:

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.

Places may have a range of values for different individuals or groups.

This assessment has sought to identify Aboriginal heritage objects and sites within the Project Boundary and obtain enough information to allow the values of those objects and sites to be determined.

8.1.1 Scientific Value

Scientific value refers to the contribution that the heritage resource (i.e. an Aboriginal site or archaeological distribution) can make to knowledge and understanding of the past. It is assessed according to the rarity, representativeness or research potential of a site. These factors are inter-related. The degree to which the heritage resource can contribute to knowledge is summed up in the notion of significance. Significance increases according to the degree of research potential, rarity of a site or area.

Research potential or demonstrated research importance is considered according to the contribution that a heritage site can make to present understanding of human society and the human past. Heritage sites, objects or places of high scientific significance are those that provide an uncommon opportunity to inform us about the specific age of people in an area, provide a rare glimpse of artistic endeavour or provide a rare chronological record of changing life through deep archaeological stratigraphy.

The capacity of a site to address research questions is predicated on a definition of what the key research issues are for a region. Sites with certain backed implements from the Holocene are very common, but sites with definite Pleistocene evidence are extremely rare, and hence of extremely high significance if found.

Some archaeologists suggest that the value of a place/object can be judged by answering the following questions:

- can the site contribute knowledge which no other resource can?
- is the knowledge relevant to general questions about human history or other substantive subjects?

Rarity and representativeness are related concepts. The comparative rarity of a site is a consideration in assessing scientific significance; a certain site type may be “one of a kind” in one region, but very common in another. Artefacts of a particular type may be common in one region, but outside the known distribution in another.

The integrity of a site is also a consideration in determining scientific significance. While disturbance of a topsoil deposit with artefacts does not entirely diminish research value, it may limit the types of questions that may be addressed. A heavily cultivated paddock may be unsuited to addressing research questions of small-scale site structure, but it may still be suitable for answering more general questions of implement distribution in a region and raw material logistics.

To adequately assess significance, evidence is required which includes information about the presence of subsurface deposits, integrity of these deposits, nature of site contents and extent of the site. A review of information about previously recorded sites within the local area and region enables the rarity and representativeness of a site to be assessed.

- High significance is usually attributed to sites, which are so rare or unique that the loss of the site would affect our ability to understand aspects of past Aboriginal use/occupation for an area. In some cases a site may be considered highly significant because its type is now rare due to destruction of the archaeological record through development. Archaeological sites considered to be of high significance within the Project Boundary include large artefact scatters with unique and varied assemblages, scarred trees with well formed/preserved scars and grinding stones/grooves
- Moderate significance can be attributed to sites which provide information on an established research question. Medium density scatters and those scarred trees with poorly preserved scars are considered to be of moderate scientific value.
- Low significance is attributed to sites which cannot contribute new information about past Aboriginal use/occupation of an area. This may be due to site disturbance or the nature of the site's contents. Small artefact scatters and isolated common types of stone artefacts are generally classed as being of low significance.

8.1.2 Social/Cultural Value

Social value refers to the importance of the heritage resource to a particular social group. When referring to the value of heritage sites and places to the Aboriginal community the term cultural value is also used. Long-standing attachment to places due to traditional stories or ceremonial significance attached to a place can give rise to strong social significance. Social values may be derived from attachment or engagement with a place due to the embodiment of traditional character and identity in the evidence of past life. Often social values stem from the archaeological evidence and the attachment that community members feel for the evidence of past Aboriginal lives and activity.

8.2 Aboriginal Heritage Values

Aboriginal heritage values identified to date within the study area are derived from the physical evidence of past Aboriginal activity.

Aboriginal heritage values identified within the Project Boundary include:

- pre-contact Aboriginal activity evident in stone artefact evidence present within the topsoil in close association with creeks and some nearby slopes;
- a pre-contact landscape dominated by usage of quartz artefacts;
- evidence of unique hand axe and anvil tools at archaeological site 50-6-0003

The scientific aspects of heritage also have cultural value to the local Aboriginal community through their strong interest in the tangible connection that it represents with pre-European Aboriginal cultural life and land use. Requests have been made to the Aboriginal community for confirmation of the Aboriginal community heritage values.

8.3 Assessment of Significance

The significance of Aboriginal heritage material within the study area can be made on two levels: 1) a site by site basis, and 2) an archaeological distribution basis. The majority of Aboriginal sites identified within the Project Boundary are stone artefact scatters and isolated stone artefacts. Relevant considerations in assessing the level of significance are the assemblage content and whether the landscape pattern differs from that already established.

Using previous assessments as a guide to help assist in determining appropriate levels of significance, we can make a number of points:

- Aboriginal sites occur predominately next to major watercourses;
- Aboriginal sites differ in the density of artefacts within exposures – more being found closer to established creeks;
- a greater concentration of stone artefacts may be anticipated closer to high order creeks;
- artefact densities in surface exposures are a poor guide to buried content and hence detailed comparison of surface densities can provide an inaccurate picture of the heritage resource;

- Aboriginal site content includes mostly of angular fragments of quartz, with tuff being the next commonly used raw material; and
- abraded artefacts such as stone hatchet heads and anvils are rare.

The sites found within the Project Boundary are assessed as to how they fit this pattern. Aboriginal sites considered in isolation within the study area are generally of a low or moderate significance with the following exceptions:

- Artefact scatters with more than 25 artefacts and/or artefact scatters possessing unique or rare artefact types
- Scarred trees with well formed scars or rare scar shapes (circular)

Table 5 – Summary of Archaeological Scientific Significance

AHIMS ID	Site Name	Site Type	Scientific Significance
50-3-0002	Young (BY/12)	Artefact Scatter	Medium
50-3-0003	Stony Creek (BY/13)	Artefact Scatter	Medium
50-3-0004	Wombat (BY/14)/ Tumbleton Creek	Artefact Scatter	Medium
50-5-0007	Frampton (BY/9)	Artefact Scatter	Low
50-6-0002	Cootamundra (BY/10)	Artefact Scatter	Low
50-6-0003	Muttama Creek (BY/11)	Artefact Scatter	High
50-6-0004	Connaughtmans Creek/Wallendbeen (BY/16)	Scarred Tree	Destroyed
	APA-AS1-11	Artefact Scatter	Low
	APA-AS2-11	Artefact Scatter	Low
	APA-AS3-11	Artefact Scatter	Low
	APA-IA1-11	Isolated Artefact	Low
	APA-IA2-11	Isolated Artefact	Low
	APA-IA3-11	Isolated Artefact	Low
	APA-ST1-11	Scarred Tree	High
	APA-ST2-11	Scarred Tree	High
	APA-ST3-11	Scarred Tree	High
	APA-ST4-11	Scarred Tree	High
	APA-ST5-11	Scarred Tree	High

8.4 Social/Cultural Values Identified

Aboriginal people are in the best position to provide comment on the cultural value(s) and significance of the Project area and its associated archaeological record. Consultation with registered Aboriginal stakeholder groups for this assessment indicates a common interest in the well-being of recorded Aboriginal sites.

Although AECOM has not, at the time of writing, received any feedback on the specific cultural value(s) or significance of individual archaeological sites within the study area, the general consensus received from consultation is that all are culturally significant and need to be cared for appropriately. These sites attest to the occupation and use of the Project area by the ancestors of contemporary Aboriginal stakeholder representatives.

8.5 Historic Statement of Significance

Nubba Station and Homestead is of local historical, associative and technical significance. The Station and Homestead was a focal point for development in the area, being a large complex of buildings servicing a large

farm. It is of local associative significance as the home of the first elected mayor of Wallendbeen, Peter Sinclair. It is of research/technical significance, having the potential to yield information through archaeological investigation regarding the operation of a pastoral property from at least the 1860s.

8.6 Historic Significance Assessment

Criterion a – historical: Nubba Station and Homestead is of local significance as a focal point of early settlement, development and employment in the area to the south of Wallendbeen. This is evident as the first mayor of Wallendbeen was from the Station

Criterion b – associative: Nubba Station and Homestead is of local associative significance, being the home of Peter Sinclair, the first mayor of Wollendbeen.

Criterion c – aesthetic: This item does not meet this criterion as it does not demonstrate aesthetic characteristics and/or a high degree of creative or technical accomplishment.

Criterion d – social: This item does not meet this criterion as it does not have a strong or special association with a particular community or cultural group.

Criterion e – technical: Nubba Station and Homestead is of local research significance, having archaeological potential to yield information regarding the development of pastoral activities in the area. The substantial nature of the extant elements is also of research interest.

Criterion f – rarity: This item does not meet this criterion because it is not rare.

Criterion g – representative: This item does not meet this criterion as it has lost the principle characteristics of the class.

9.0 Impacts & Management Recommendations

9.1 Summary of Impacting Development

Construction of the proposed pipeline would involve clearing and grading a 30 metre pipeline construction right of way, except in limited areas where alternative pipe trenching techniques would be used. Such clearing would result in total surface disturbance over the areas where it is employed, which would likely consist of the majority of the route. The study area has previously been subject to such an impact in 1980 when the original pipeline was constructed, and subsequently in 2006 when an optical fibre cable was constructed in part of the study area.

The pipeline trench is constructed by mechanical trenching plant which excavates a (1.2 m deep x 0.65 m wide) trench, moving the spoil to one side (Figure 4). This method is used everywhere except for major infrastructure crossings where horizontal drilling would be employed. Following the placement of the pipe in the trench, the site would be backfilled, levelled and revegetated.

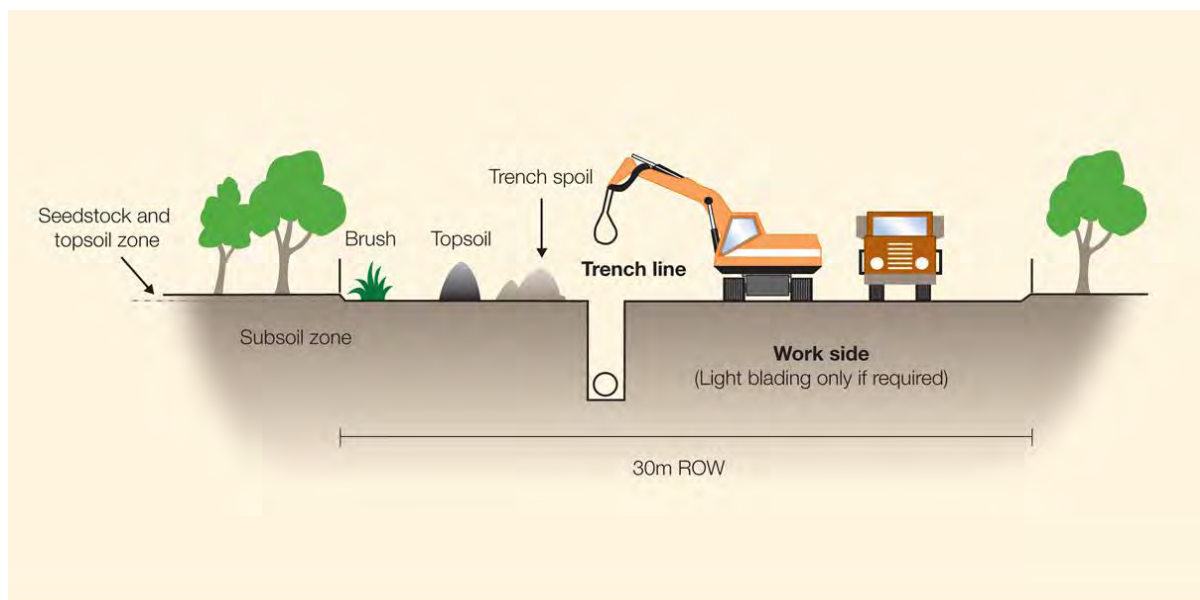
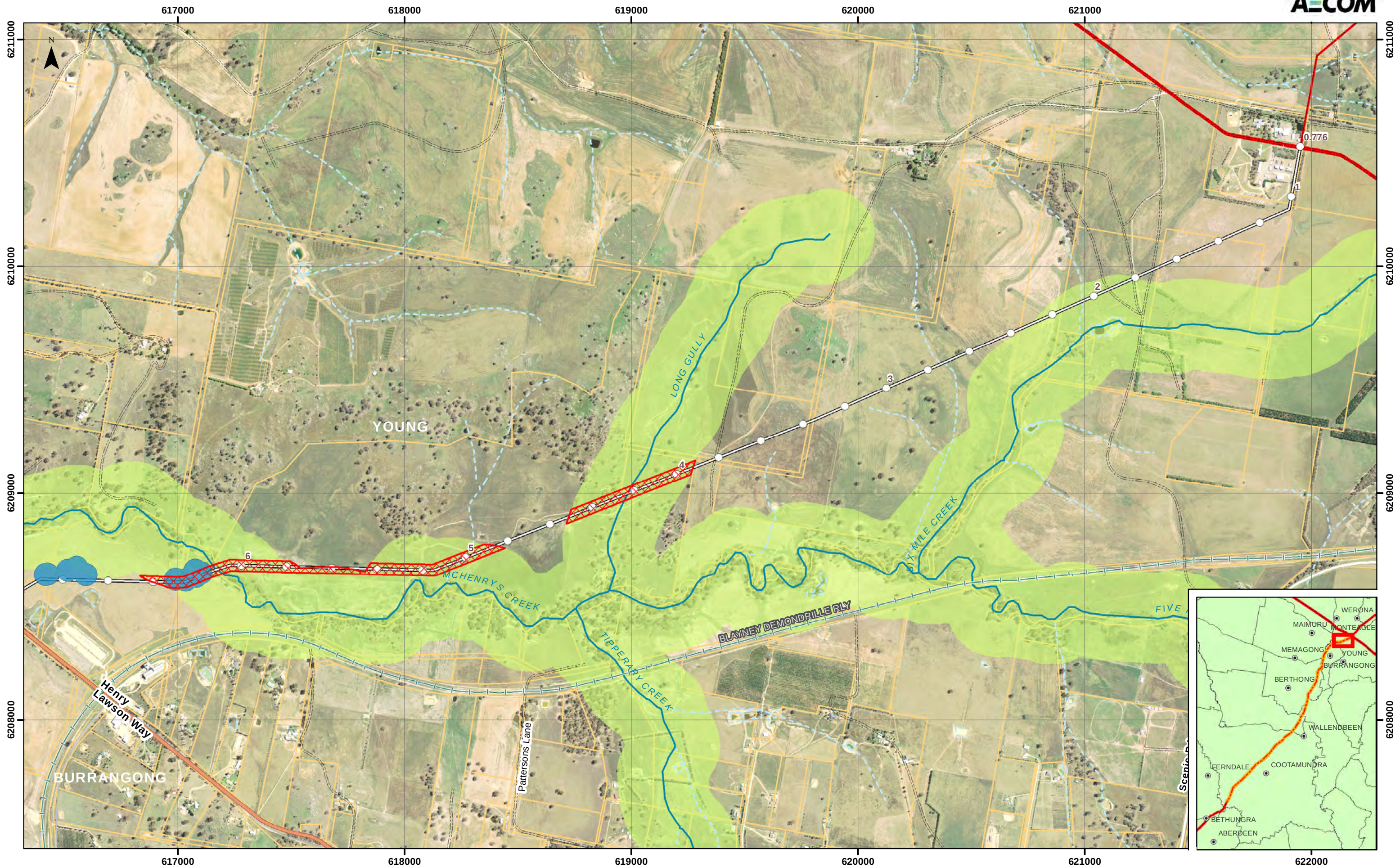


Figure 4 - Schematic showing proposed construction methodology and impacts

9.2 Potential Impacts on Heritage Sites

Figures showing the Aboriginal and historic archaeological sites identified and management recommendations are provided in Figures 5.1 to 5.18.

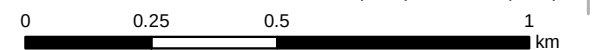


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|---------------------|--------------------------|-------------------------------|----------------------------|----------------|-----------------|--------------------|
| Archaeological Site | Gas Pipeline Section 2 | Major Drainage | Built-up | Highway | Path | Scarred Tree |
| Salvage Excavation | Property Boundary | Minor Drainage | Park/ Nature Reserve | Main Road | Private Road | Aborist Inspection |
| Surface Collection | Railway | Cultural Heritage Sensitivity | Suburb | Connector Road | Unsealed Road | Fenced |
| 200m Interval Point | Historic Site Monitoring | Historic Site | Aboriginal Site Monitoring | Local Road | Vehicular Track | No Direct Impacts |

YOUNG - WAGGA WAGGA PIPELINE SECTION 2

Management Recommendations

Source: LPMA (2010), StreetPro (2009)

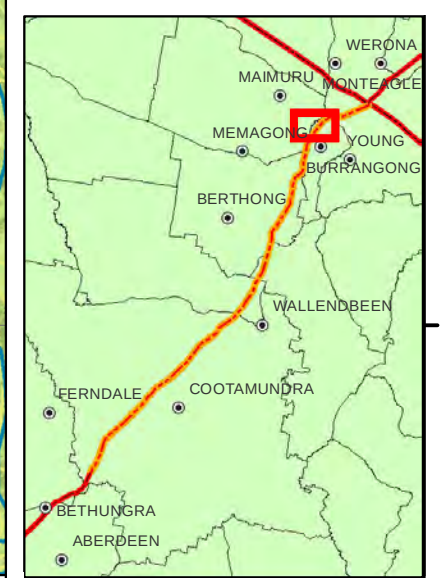
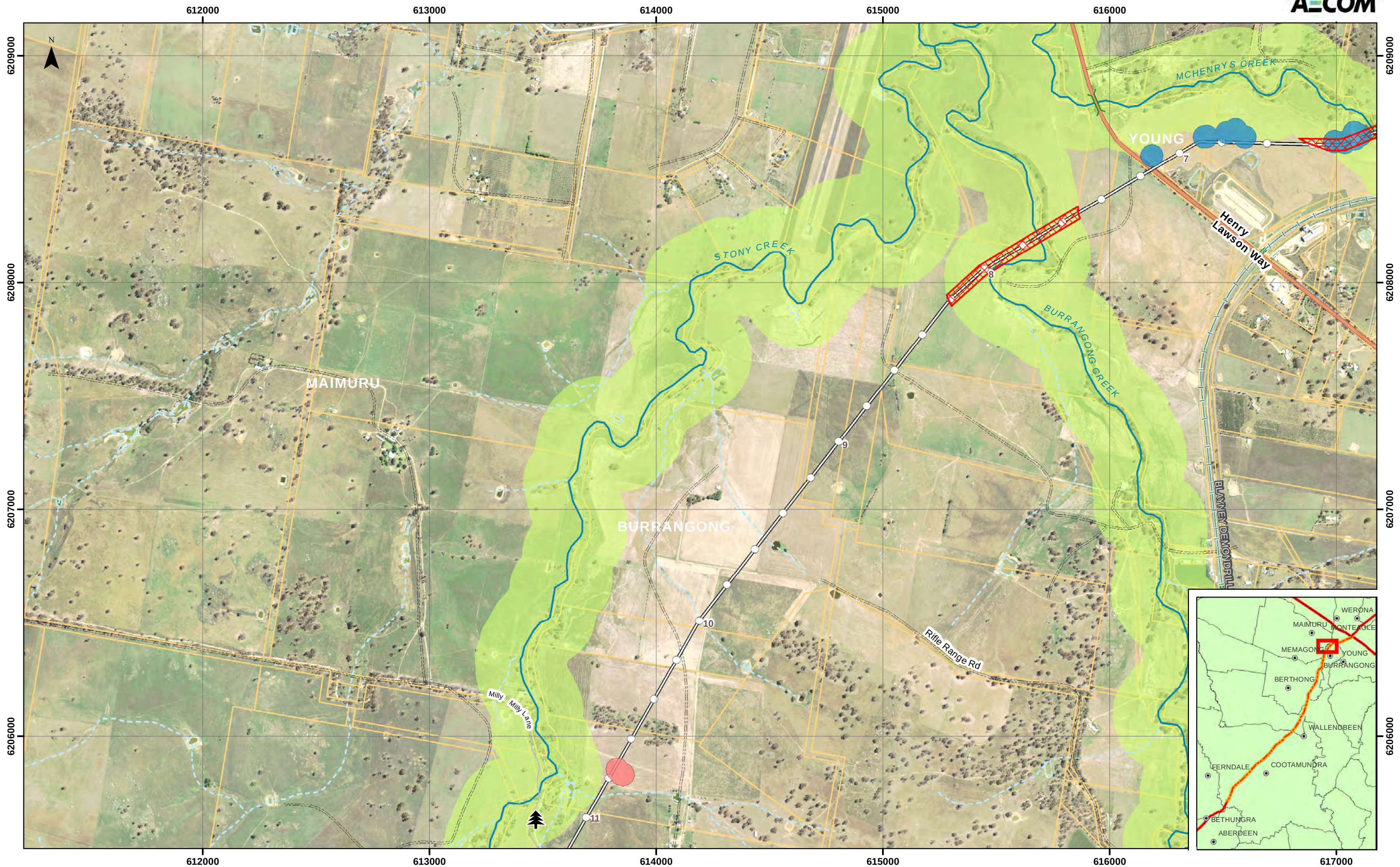


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Fig. **5.1**



- Archaeological Site
- Salvage Excavation
- Surface Collection
- 200m Interval Point

- Gas Pipeline Section 2
- Property Boundary
- Railway
- Historic Site Monitoring

- Major Drainage
- Minor Drainage
- Cultural Heritage Sensitivity
- Historic Site

- Built-up
- Park/ Nature Reserve
- Suburb
- Aboriginal Site Monitoring

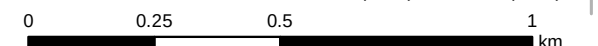
- Highway
- Main Road
- Connector Road
- Local Road

- Path
- Private Road
- Unsealed Road
- Vehicular Track

- Scarred Tree
- Aborist Inspection
- Fenced
- No Direct Impacts

YOUNG - WAGGA WAGGA PIPELINE SECTION 2 Management Recommendations

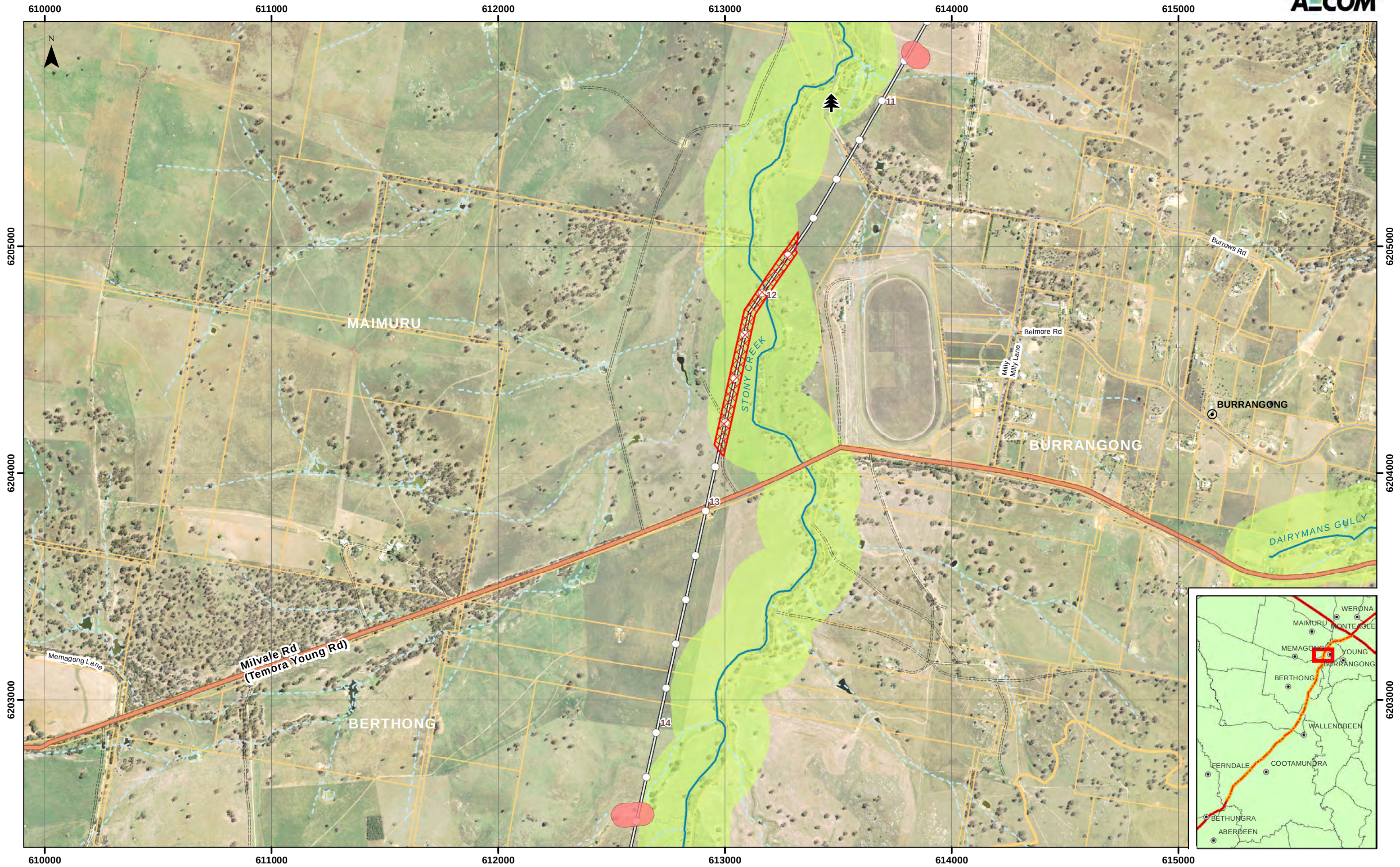
Source: LPMA (2010), StreetPro (2009)



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Fig. 5.2



Archaeological Site

Salvage Excavation

Surface Collection

200m Interval Point

Gas Pipeline Section 2

Property Boundary

Railway

Historic Site Monitoring

Major Drainage

Minor Drainage

Cultural Heritage Sensitivity

Historic Site

Built-up

Park/ Nature Reserve

Suburb

Aboriginal Site Monitoring

Highway

Main Road

Connector Road

Local Road

Path

Private Road

Unsealed Road

Vehicular Track

Scarred Tree

Aborist Inspection

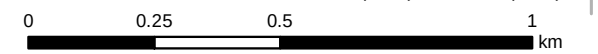
Fenced

No Direct Impacts

YOUNG - WAGGA WAGGA PIPELINE SECTION 2

Management Recommendations

Source: LPMA (2010), StreetPro (2009)



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Fig. 5.3