

Appendix 2 – Notes on the geomorphology of Balranald Project Area

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Notes on the geomorphology of Balranald Project Area.

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These notes relate to the landscape patterns around Tin Tin and Pitarpunga Lakes approximately 25km north of Balranald in western NSW. They were originally prepared by Dr Peter Mitchell in October 2012 and are based on existing maps, Google Earth imagery, available literature, and two brief field visits. Changes in this revised version are mainly editorial.

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Limitations of available data

Researchers working in western NSW face a paucity of recorded data. The area is so large that almost all mapping has been conducted at 1:250,000 scale and most natural boundaries have been derived by interpretation of air photos with limited field checking. Some of the base mapping was done in the 1960s and has not been updated. Across the Balranald study area the most detailed mapping is of the Land Systems (Eldridge circa 1972) and vegetation by Scott (1992). Geology maps have only been produced at 1:1m scale (Brown *et al.*, 1991) and although the geomorphic mapping of Butler *et al.*, (1973) was extremely valuable in establishing a framework for the Riverina this work was produced at 1:500,000 scale and can be difficult to relate to topography in the field.

In recent years topographic data has been produced at a more useful scale of 1:50,000 but even on these maps confirmed levels (spot heights) are sparse and many former drainage channels that are important features in the topography have not been depicted.

Land systems by definition can be subdivided into smaller units such as land classes and land components that are identified in the text accompanying the Land System map sheets but they have never been mapped. The Soil Conservation Service land systems (along with other data) were used by Sahukar *et al.*, (2003) as surrogates for ecosystems across western New South Wales. They were also used by the Service in the preparation of property management plans in the 1970s and 1980s. At those scales and for grazing management they proved to be a useful landscape descriptor but at the scale required for archaeological site survey such as on the Iluka project near Balranald they have little value and individual map polygons should not be expanded to project scale. Mapped boundaries are only accurate to +/-250 metres, they will not register correctly in any GIS system, and can be very misleading on the ground.

The most useful basic data source is Google Earth imagery. Depending on the Google version and the computer used the image can be enlarged to about 1:200 scale and will resolve details about 3m across. This imagery can also be interrogated for elevation which is derived by averaging spot heights sampled on a 90m grid. These figures are not accurate but in country with low relief like this study area they are sufficiently reliable to determine relative heights of features and directions of ground slope.

Geomorphic background

The geomorphology of the Balranald Project Area cannot be understood without placing the Iluka mine lease in the larger context of the lower reaches of the Lachlan and Murrumbidgee Rivers. The best primary guide to this is the work of Butler *et al.*, (1973). Since that was published others have expanded the framework and filled in more detail. The following is a general account pertaining to the study area.

The Riverina extends across the lower reaches of three very large, extremely low angle, alluvial fans of the Murray, Murrumbidgee and Lachlan Rivers (Butler *et al.*, 1973, O'Brien and Burne, 1994, Capon *et al.*, 2008). During the late Pleistocene discharge in these streams has varied with climatic change so that the streams have sometimes carried flows as much as eight times that of the present. In response to changing discharge the river channels have meandered across the width of the fans variously depositing sand, silt and clay at different distances downstream from the fan apex. All three fans overlap and their distal gradients can be as low as 1:5,000. The western edge of the Lachlan fan is overlain by longitudinal aeolian sand dunes oriented approximately west to east carrying mallee scrub, and sand sheets that more often carry chenopods and belah. The dunes and sand sheets are believed to have last been active about 30,000 years ago.

The river channels on the fans have changed in width and meander wavelength depending on the dominant discharge regime at any one time and a broad chronology of change has been established for the Murray and Murrumbidgee (Schumm 1968, Page and Nanson 1996, Page, Nanson and Price 1996, and Page *et al.*, 2001).

The Lachlan fan has not been studied geomorphically but the chronology of hydrologic change and human occupation at Lake Mungo and Lake Mulurulu near the end of Willandra Ck is quite detailed (Bowler 1998, Bowler *et al.*, 2003, and Kelly *et al.*, 2012). Generally the changes in channel form and the temporal patterns of full lake or dry lake periods have been correlated with climate change through the Pleistocene and Holocene, and the general trend has been for increasing aridity (as judged from stream flow) to about the mid-Holocene (Hesse *et al.*, 2004). However without collaborative evidence Box Ck should not be assumed to have an identical chronology as Willandra Ck as other factors, such as possible channel switching at the apex of the fan near Hillston need to be considered.

Geomorphically the following fluvial, lacustrine, and sand dune/sheet landscapes can be seen along all of the streams on the riverine plain.

1. Meandering channels with different wavelengths and channel widths, lined by river red gum, generally fringed by low levees and often with channel beds close to the same level as their adjacent backplain. Flood waters reach the backplain through crevasse splays (breaches in the channel bank and levee).

2. The channels are set within a wide meander plain (floodplain) containing abandoned channels (billabongs), and occasional source bordering sand dunes. The plain is usually covered by black box woodlands on heavy grey clay. Swamps support either lignum (infrequent wetting) or common reed (frequent wetting and standing water).

3. Beyond the meander plain and typically 1 to 2m lower in elevation an extensive backplain occurs which is sometimes treeless and was dominated by chenopods and grasses in pre-European times. Swamps and marshes occur on the backplain and may carry black box or river red gum woodland or large areas of common reed. Fine dendritic channel networks cross the marshes along with areas of open water. Soils in the marshes and swamps are predominantly deep organic grey to black clays that shrink and crack when dry. Swamps and lake beds (clay pans or playas) on this feature are more commonly covered in canegrass. Gilgai of various sorts occur on the backplain and these micro-topographic features can hold standing water as temporary wetlands.

4. Lakes of many different sizes are found throughout the landscape but are best represented on the backplains. There are two kinds of lakes; freshwater lakes or clay pans (playas) that are filled from the river channels during floods and that drain back to the streams as river levels fall, and salt water lakes or saltpans (saline playas) that are groundwater evaporation basins (groundwater windows). Salt lake systems are less common in NSW than in northern Victoria. The largest freshwater lakes are connected to the Murrumbidgee River and these can retain water for a number of years. The largest clay pans (playas) occur on the distal parts of the Lachlan fan and are normally dry. Saline lake beds are rare on the Lachlan fan although many of the clay pans have clay pellet lunettes indicating that the lake surface has been influenced by solutes at some time in the past.

5. Nearly all lakes and clay pans have a lunette on the eastern shores that has formed over time as sediments worked across the lake floor by shallow waves to accumulate in a crescent shaped dune on the eastern shore. The sediments in the lunette may be dominated by aeolian sand or clay and in some cases alternating sand and pelleted clay. Beach facies are usually present along the lake shore. The lunettes preserve an excellent stratigraphic record of change in lake and stream hydrology and have the potential to contain a rich archaeological record as recorded at Lake Mungo. Clay lunettes are formed as the lake beds dry out and surface mud is flocculated by salts. They represent intermediate hydrological conditions between permanent fresh lakes and dry, stable playas. Tin Tin and Pitarpunga Lakes are now dry clay plains that have been partly cultivated since the 1970s. No beaches are evident and there is only slight sheet and gully erosion on the lunettes.

6. Away from the fluvial and lacustrine sediments and landforms the country is covered in red and yellow-red sand formed in longitudinal dunes that stand two to six metres above the swales. In a few places these dunes have passed over old lake beds and in other places the dune morphology is flattened or eroded to the extent that the landscape is better described as a sand sheet.

The dunes and the sand sheets have a core of sand cemented by a calcium carbonate pan (caliche or kunkar) that can be solid rock or an aggregate of pisolitic carbonate

nodules in the B and C-horizons of the natural soil. This material is often quarried for use as road gravel and it was also used as heat retainers in Aboriginal hearths and ovens. In the sand sheet country erosion sometimes exposes the kunkar as low stony ridges from which a limited amount of surface water may drain in exceptionally wet periods. This sheet flow is weakly channelled and moves down gradient into floodout or run-on areas that are characterised by brown sandy clay soil often colonised by old man saltbush. Gilgai may occur in these areas and may hold surface water for some months after exceptional rain. Once flooded the gilgai ponds support ephemeral wetland vegetation including rushes and nardoo and could have provided important resources for Aboriginal people. Occupation of the back country, away from the lakes and rivers may have depended on sufficiently heavy rain to flood the gilgai.

Geomorphology near the proposed mine

The Iluka mine lease and ore deposits lie beneath a veneer of lacustrine, fluvial and aeolian sediments immediately southwest of Lake Tin Tin and Lake Pitarpunga and the lease covers part of Muckee Lake. All of these lakes are dry clay pans (playas) and it is likely that they have rarely filled in the last few hundreds to thousands of years. They originally functioned as overflow lakes fed by a Lachlan River distributary stream known as Box Creek. These lakes are not linked to the Murrumbidgee River.

The Box Creek channel leaves the Lachlan River as Marrowie Creek near the apex of the alluvial fan upstream of Hillston. In this area it is one of four distributary channels that all take some of the higher Lachlan River flows and spread the water across the lower fan (Figure 1). At the present time the main channel (the Lachlan River) carries most of the flow but under most discharge conditions so much water is lost to evaporation and infiltration that flows only rarely pass Booligal or Oxley and the river normally terminates in the Lachlan and Great Cumbung Swamps (inland deltas).

The Great Cumbung Swamp is usually considered to be the terminus of the Lachlan River (O'Brien and Burne 1994) although Lachlan River water did reach the Murrumbidgee during the floods of 1956 (Harrison 1957). Today Marrowie Creek terminates in a floodout and swamp country near Tarwong and its extension channel (Box Creek), has only been known to flow in the extreme flood of 1956. No reference to Box Creek entering or filling Lakes Tin Tin and Pitarpunga during that or any other historic flood has yet been found.

Where Box Ck enters Pitarpunga Lake the channel is little more than a shallow depression covered with old man saltbush. There is barely any levee and there are no black box trees anywhere along the channel. The channel has a meandering form with an average wavelength of about 200m and channel width of 40m. Numerous partial palaeo-channels can be traced across the lake beds and in some places through the sand sheet south of the lake. These channels have meander wavelengths of 600 to 1,000m and widths in the range 50 to 100m. Such channels are clear evidence of large changes in flow regime in the Box Ck system during the Pleistocene.

Below the lakes where Box Ck crosses the Sturt Highway the channel is much larger, well defined and lined with old box trees. This is the reach where the creek flowed in the last two years and the difference is that this part of the creek also includes the catchment of Arumpo Ck and apparently the total catchment is sufficient to create local flow with exceptional local rain.

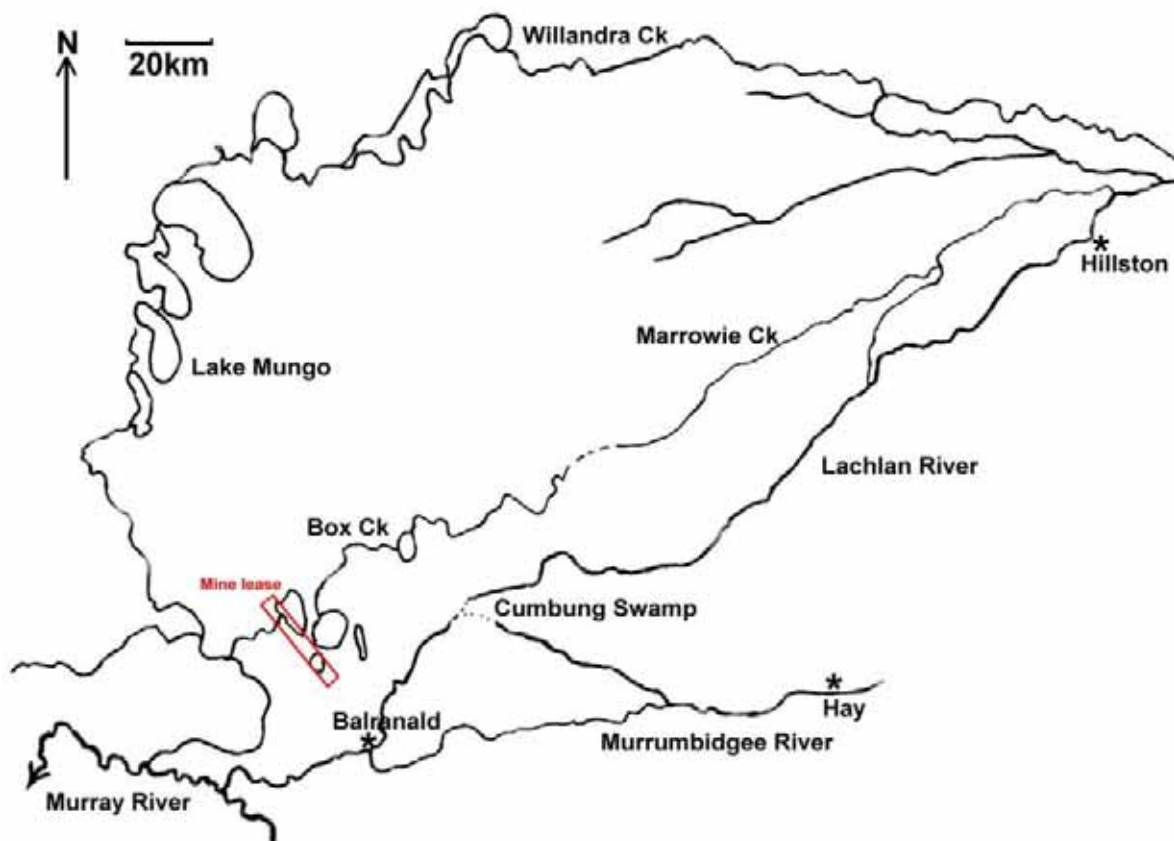


Figure 1. Map of the Lachlan River fan showing the broad pattern of distributary streams flowing across the fan from its apex upstream of Hillston.

Examination of Google Earth images suggests that all of the lakes north of the mine lease may have originally been one large lake of at least twice the total area of the present lake beds (Figure 2). This feature is roughly defined by one or perhaps two higher lunettes on the eastern edge adjacent to the Murrumbidgee backplain. It is not known when the mega-lake was active, nor is it known when the present lakes were last regularly filled but all the field indications suggest that Tin Tin and Pitarpunga Lakes have gone through a drying phase over the late Pleistocene and Holocene that is probably comparable to the hydrologic story revealed in the lower Murrumbidgee and in Lake Mungo (Box).

This suggestion is supported by the fact that the three smaller lunettes (Figure 3) on each of the present lakes (Tin Tin, Pitarpunga, and Maccommon) have surface layers that are composed of wind-blown clay pellets that are known to form during lake drying phases when clay pellets are blown from the exposed dry lake floor under slightly saline conditions. Whilst this material can be matched to the sediment in the Zanci Unit at Lake Mungo it may or may not be of an equivalent age.

Box: Generalised chronology of changing conditions in the lower Murrumbidgee and Lachlan rivers.

Palaeo-hydrologic conditions in the Murrumbidgee have been deciphered and dated by Page and Nanson (1996), Page, Nanson and Price (1996), and Page *et al.*, (2001).

Colleambally phase 105,000 to 80,000 years ago the Murrumbidgee had bankfull discharge about five times the Holocene level (ie., modern level).

Kerarbury phase 55,000 to 35,000 years ago the Murrumbidgee had bankfull discharge about eight times the Holocene level.

Gum Ck phase 35,000 to 25,000 years ago the Murrumbidgee had bankfull discharge about 4.5 times the Holocene level. The Gum Creek palaeochannel carried large volumes of sand bedload but no source bordering dunes are associated with this landscape.

Yanco phase 20,000 to 13,000 years ago last glacial maximum, stream flow was reduced.

Present conditions established by 12,000 years ago.

Lake Mungo chronology (Bowler 1998, Bowler *et al.*, 2003)

Pre-Mungo red soil was developed on clayey sands by 70,000 years ago when lake levels alternated between full and empty.

The Mungo Unit is divided into upper and lower horizons, blown sand and pelleted clay from the lake floor accumulated between 40,000 and 25,000 years ago and was cut by waves (with beach facies of carbonate gravel and reed rhizomorphs) during periods of high lake levels.

During the LGM starting at about 25,000 years ago the lake was generally shallow and dry although Lakes Arumpo and Leaghur both have shell lenses containing fish bones dating to 24,000 and 26,000 years ago.

The last stages of Lake Mungo wetting are represented by sediments of pelleted saline mud and clay of the Zanci Unit.

By 15,000 years ago the lake dried permanently, lunette building ceased and the landscape was stabilised until Europeans arrived and sheep overgrazed the country. Lakes Menindee and Tandou still contained water after 15,000 reflecting the differences in stream connection between the Darling and the Lachlan. There may also have been changes in the dominant river path on the Lachlan River when flows may have switched from Willandra Ck to Marrowie Ck and/or the present Lachlan River channel.

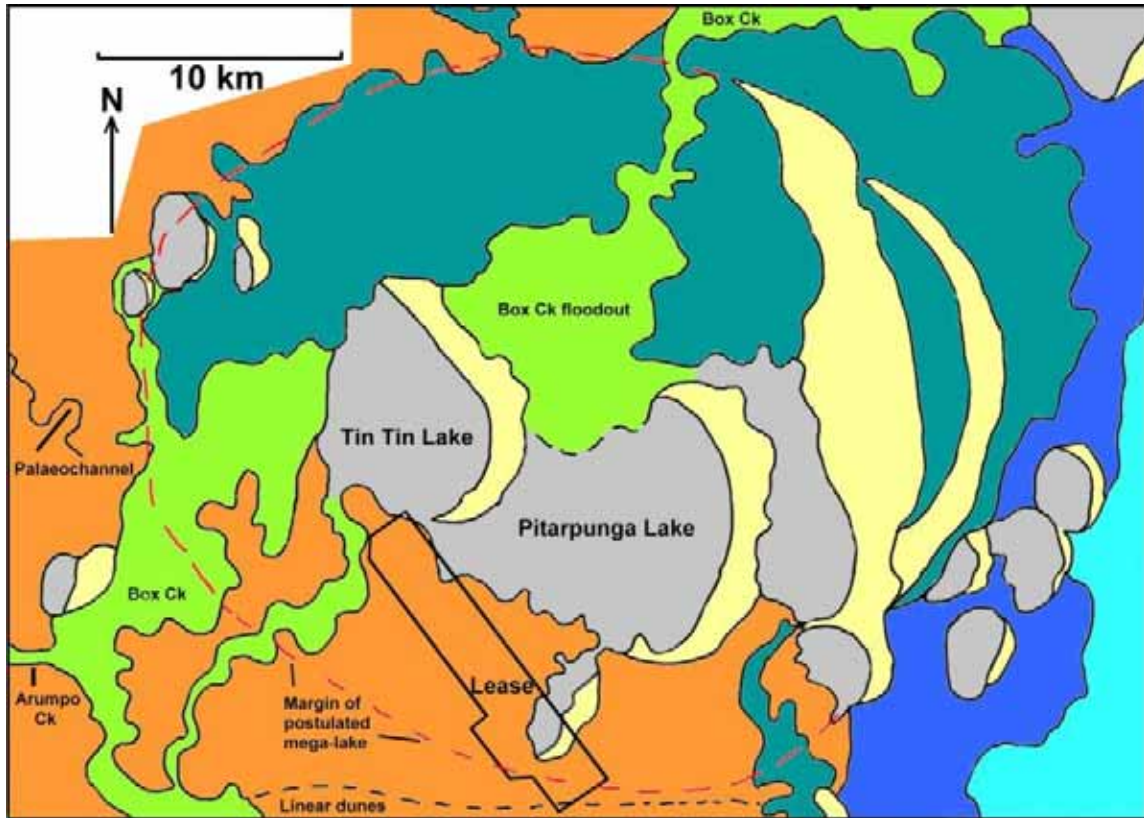


Figure 2. Sketch map of the landscapes in the area around the mine lease based on Google earth images.

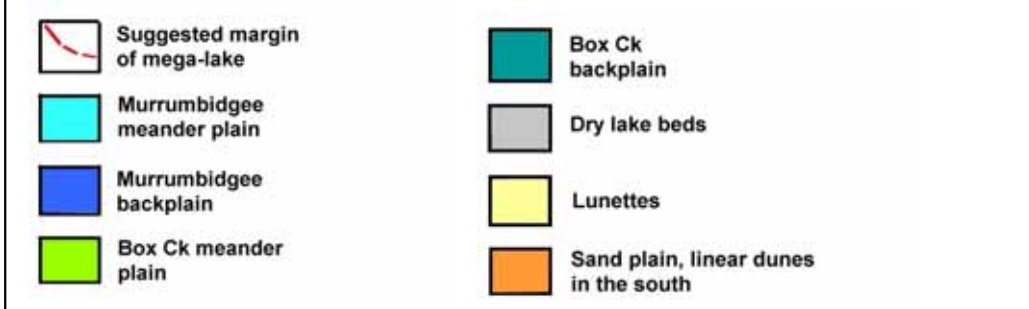


Figure 3. View west from the crest of the lunette on Tin Tin Lake showing the grey clay soil and chenopod plain of the dry lake bed.

Archaeologically these suggestions are important because they indicate that the lunettes of these lakes may contain an archaeological record similar to that at Lake Mungo. No exposed sections were seen in the lunettes but given that the lakes must once have been filled then beach facies of some sort (possibly shell or rounded carbonate nodules) can be expected, a wet phase soil must exist within the lunette, and these units must be buried by the dry phase clay pellet layer that is visible over most of the surface. The surface of the lunettes today have been degraded by post-European wind-blown fine sand, silt and clay and the lake margin where the beach should be is covered by clays eroded from the lunette slope. This event/material sequence is summarised in Figure 4 Note that this figure has not been confirmed but it does provide a strategy for searching for older Aboriginal sites that may be expected in/on the surface of the wet phase soil.

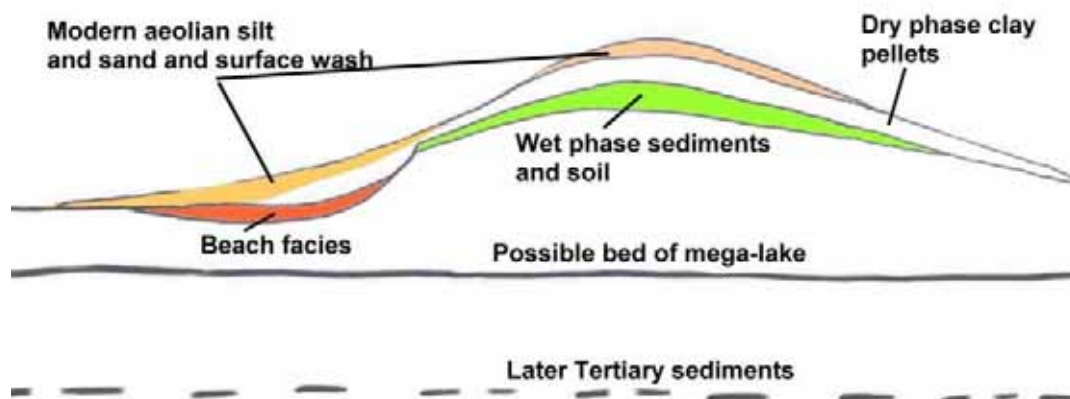


Figure 4. Schematic stratigraphy predicted for the lunettes. The most likely material to contain old Aboriginal archaeology is the wet phase sediment and soil (pale green).

Landscape and vegetation change after 150 years of European management

To assist understanding of land use patterns reflected in the Aboriginal archaeology it is necessary to appreciate the extent of change induced by European land management in the past 150 years. The broad picture for western NSW has been outlined by Mitchell (1991) and more detail concerning the effects of grazing on individual plants and vegetation associations can be found in Beadle (1948).

Broadly the vegetation can be divided into three main groups depending on the response of particular species to heavy grazing pressure.

- Palatable plants, particularly softer herbs, nutritious grasses and some of the annual saltbushes are rapidly consumed, set seed less frequently and decrease in abundance over time.
- Less nutritious and less palatable plants, and those with some form of defence such as prickles or toxic components are not grazed so heavily and these tend to increase in abundance. Most of the bluebushes are in this category and their present abundance on the sandplain country is a measure of change from the natural condition where grasses and annual herbs would originally have been dominant.
- The third group of plants in the rangeland is also composed of increaser species and these are the exotics (invasive weeds) that are particularly successful as colonizers of bare soil. They are usually prickly, unpalatable to stock, and/or toxic.

In addition to changed vegetation cover the soil itself has been modified by stock trampling causing the destruction of biological soil crusts (Figure 5) of algae, lichens and bryophytes. The loss of surface crusts exposes the soil to erosion (Eldridge and Tozer 1997).

The clay soils on lunettes are particularly susceptible to water erosion as the clay is easily dispersed on wetting and moves downslope in turbid water. In the sandplain country sheet erosion has stripped all topsoil and exposed large areas of clay B-horizon to form extensive hard surfaced scalds (Figure 6). Such scalds (sometimes called claypans but not to be confused with playas) often have large numbers of stone artefacts and dispersed hearth material on their surface. The total number of visible artefacts provides a rough measure of the density of artefacts in the original topsoil but most of the archaeological context of these items has been lost.

In some places scalds have patchy vegetation mounds on their margin or scattered across the eroded surface (Figures 7 and 8). Such mounds can preserve an original natural soil profile beneath a cap of wind-blown sediment that has been trapped in a clump of bluebush or other vegetation. Vegetation mounds may contain relatively undisturbed archaeology but to reveal it would require excavation.



Figure 5. Typical biological crust in good condition. Composed of algae, lichens and bryophytes these crusts reduce natural rates of soil erosion but are easily destroyed by stock trampling.

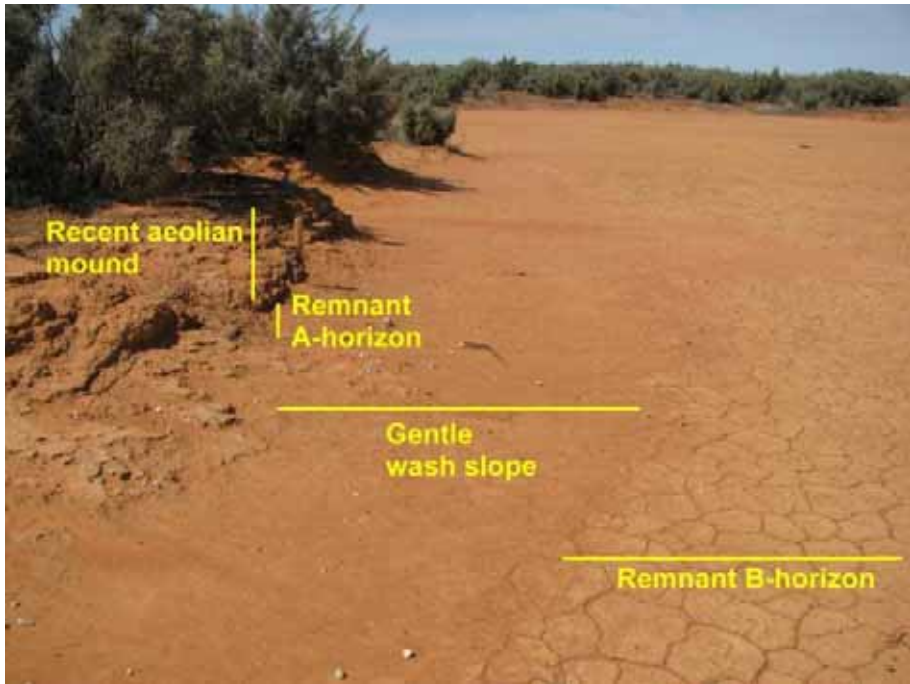


Figure 6. T14 showing a typical scald margin with the exposed B-horizon forming the scald surface, and a low mound of recent drift sand preserving some A-horizon in which the Aboriginal material is located.



Figure 7. Larger vegetation mound as seen on T14 and elsewhere on scalded surfaces.



Figure 8. Close up of laminated aeolian sand trapped in the vegetation mound shown in Figure 7.

Lake dynamics

Muckee Lake is smaller version of Pitarpunga Lake and functioned as an overflow lake when water levels in Pitarpunga reach a threshold of about 60m ASL. The lowest point in the bed of Pitarpunga is about 58m ASL and the lowest part of Muckee Lake is about 55m ASL. Muckee Lake is connected to Pitarpunga by a shallow meandering channel with scalded levees at its north eastern corner. No box trees occur along this channel and there is no sign of any recent flow.

In a lake filling event water would enter Pitarpunga through the Box Ck floodout (Figure 2) and there would be some 2m of water in Pitarpunga before water flowed into Tin Tin and Muckee Lakes. In a major flood Muckee Lake would have a maximum depth of about 8m. This would be quite sufficient for waves to develop and for a beach to form at the base of the lunette. The southern half of Muckee Lake has been cultivated but in the northern half poorly defined vegetated strand lines are visible on the imagery that were probably formed on the last occasion that the lake retained any water, although this was probably only from local rainfall. Similar strand lines can be seen in Pitarpunga Lake. On the bed of Tin Tin Lake a line of scattered black box trees can be seen near the eastern edge. These trees are all estimated to be at least 100 years old and they stand about 200m into the lake from the edge of the lunette. Box trees elsewhere in Tin Tin and Pitarpunga are larger and apparently older and there are no younger cohorts that would have been established if the lake had filled at any time in the last century.

On most of the lakes of western NSW archaeological traces of human occupation are found in the lunette but examination of the lunettes in this system revealed very little archaeology (but see WB66 below). There are four probable reasons for this;

1. The clay lunettes are not attractive campsites when the ground is wet as the clay surface is so sticky.

2. There are no trees on the lunettes and therefore fuel for campfires is limited.
3. During dry lake conditions the lunette is not likely to have been occupied without other local sources of water being available.
4. Hunting conditions on the open plain would be challenging.

Comment on particular Aboriginal sites.

WB40 and 41

Beyond the western shore of Muckee Lake there is an extensive low density site (WB40 and WB41) with hearths, scattered flakes and a small number of grindstone pieces. Exposed artefacts have been winnowed from the natural soil by wind and water erosion leaving a scalded and gullied surface (Figure 9) and the artefacts are widely dispersed. It is unlikely that many artefacts have been collected from this site and therefore the total artefact exposure gives a good indication of artefact density in the natural soil.



Figure 9. General view of the partly scalded and eroded surface of WB40. Trees in the background are belah woodland that once would have been more extensive.

WB40 is exposed on the gentle slopes draining toward Muckee Lake. During the early stages of scald formation (probably during the 1895 to 1902 drought) drift sand was trapped in shrubby vegetation (mainly bluebush) to form vegetation mounds constructed of bedded aeolian sand. Some of these mounds are up to 1m thick and as much as 8m long. They sit unconformably on natural soil that has a texture contrast profile with a subtle bleach in the A₂-horizon and a B-horizon of grey brown clay (Figure 10).

Prior to the arrival of sheep this site would have had a soft sandy surface with a well formed biological crust and carrying more nutritious grasses, and annual saltbush in an open belah community. In contrast to the lunette on the other side of Muckee Lake this would have been a more attractive camp site. Today the area is in a recovery phase after severe degradation and is now dominated by bluebush and annual grasses with much of the belah dead and fallen.

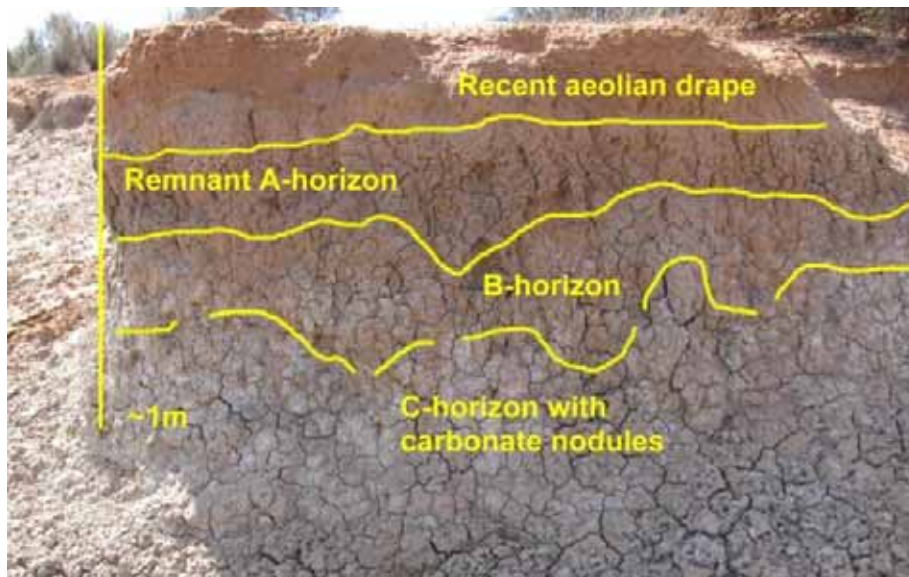


Figure 10.
Exposed soil profile in a gully face on WB40. The grey clay C-horizon may be part of an old lake floor.

Belah country on heavy soil often features gilgai micro-topography and this location is no exception (Figure 11). Depressions up to 1m deep and 15 to 20m in diameter are common west and southwest of WB40. After heavy local rain these depressions would hold water for at least some weeks and would support green grass, nardoo and in a few cases *Juncus* rush.

Gilgai are poorly understood micro-topographic landforms that are common on the western plains but are also found in areas of higher rainfall such as the Darling Downs and in the brigalow belt of Queensland (Paton 1974). They are often associated with cracking clay soils where repeated shrinking and swelling is believed to form a network of low ridges and central depressions. In other cases they are attributed to layered clays with different bearing capacity that overturn when the deeper and weaker clay is saturated. A third probable cause of the landform is that they are a form of clay based karst topography where clays in the subsoil are perverted to deeper layers or moved laterally to other locations. At WB40 this last mechanism seems more likely as prominent 'swallow holes' (a form of tunnel erosion) are present in the floor of the depressions (Figure 12).

The mechanics of gilgai formation are not important archaeologically but the presence of gilgai is as they become temporary wetlands that retain surface water in otherwise dry country for some weeks to perhaps months after exceptional local rain. It seems probable that occupation of WB40/41 was not focussed on Muckee Lake but on the occasional exploitation of gilgai and the surrounding country in good seasons. If this scenario is correct then dates on hearths from WB40/41 are likely to be late Holocene to 'modern' and would not be expected to have any clear link to dates on Muckee Lake lunette.



Figure 11. Gilgai depression near WB40. Note the green centre and *Juncus* clumps on the margin.



Figure 12. Another gilgai near WB40 with open swallow holes on the floor.

T7 WB42

The site WB42 on T7 presented difficulty in the interpretation of the landform. On the imagery it appears to be a sub-circular depressed feature defined by old man saltbush in grey brown clay with gilgai and swallow holes some of which have nardoo growing in them. The edge of the larger depression seemed to match a circle of dead box trees and there is a sharp 1m rise on the southern edge and a more gentle 1m rise on the northern edge. Both sides are in a brown texture contrast soil. Overall there is little erosion across this feature and the numerous hearths located are fairly intact. These parameters suggest it was a box swamp or perhaps a small lake form but neither explanation was a comfortable fit and an alternative model of the site being located on a palaeo-channel was considered.

However there is no evidence of any sinuous pattern that would be expected of a channel and closer examination showed that T7 was isolated from a recognisable channel adjacent to T10 by a calcrete cored ridge and therefore the site had to be considered as a distinctive feature.

After tracing some of the gilgai it became evident that these had a linear pattern like a discontinuous surface channel (creek line) and that the box trees tended to be found on the margins of this pattern. After checking elevations on Google Earth it was concluded that WB42 was a small floodout or run-on zone receiving surface water from the carbonate cored ridge to the south and from a longer slope to the northwest.

The focus for Aboriginal occupation was apparently the same as at WB40 in that the gilgai were important as temporary wetlands and water sources. Water would only be available after heavy rain and then only for a matter of weeks. As the water soaked away supplies might be extended for a short period by excavation but the gilgai would not function as a groundwater resource that could be tapped in dry times.

It is probable that the present domination of the site by old man saltbush is itself an artefact of past grazing regimes and during Aboriginal times it may have been a more open grassland community with living black box.

WB45 T10

WB45 is a large site exposed on an extensive severe scald located on a levee on the flank of a palaeo-channel. Attempts have been made to stabilise the scald by cutting a coarse pattern of ditches to trap sediment, water and seeds. This was unsuccessful and many ditches have become rills. Present day drainage feeds water from the scald surface into a canegrass/*Juncus* swamp on the palaeo-channel (Figure 13). The swamp has a margin of black box and also grows beds of nardoo. The swamp was moist and green at the time of inspection but did not contain any surface water.

Little of WB45 is intact and this area may not justify more archaeological work although a dating program would be informative.



Figure 13.
Large swamp in a palaeo-channel adjacent to WB45.

This area now receives more water from the scalded slope than it may have during Aboriginal times.

WB66

This site is located on the lunette of Muckee Lake and is the only substantive site yet found on any of the lunettes. It was located in the last days of the site survey and the following comments are based on photographs as it was not seen by this author.

The site contains scattered heat retainers of caliche, artefacts including one made of mussel shell and a fragment of burnt *Genyornis* egg shell. These materials appear to have eroded from a buried soil in the lunette that may be the first identified site where the wet phase sediment and soil predicted in Figure 4 has been located.

Initial interpretation is that this site is very likely to be of Pleistocene age and it is therefore potentially very important archaeologically.

Ovens/earth mounds on the power line.

Large mounds of heat retainers were located on the present power line about 13.5km south west of Balranald. On Google imagery the location is on the edge of a cultivated paddock in a small triangle of land that has not been cultivated and that contains a clump of black box trees. Soil in the paddock is grey sandy clay and there is a vague sinuous feature running to the north that may be a palaeo-channel and levees of the Murrumbidgee River or one of its distributaries.

In the field it was immediately evident that this Aboriginal site was based on a large gilgai set. The biggest gilgai depression in the box trees has been modified by the land holder by diverting surface flow into the pond and perhaps by deepening the pond. Smaller gilgai depressions surround the main pond and these are about 20 to 25m in diameter and over 1m deep (Figure 14).



Figure 14.
Prominent gilgai depression in black box on the power line route.

Carbonate nodules and rhizomorphs derived from the subsoil are found on the ridges around the gilgai depression indicating that this gilgai was formed when two layers of clay with different bearing capacity were naturally overturned. The depressions are larger than average and would hold much more water than those seen at WB40 and elsewhere. Today the site has

been modified by drainage ditches and the scalded surface may yield more runoff than the site originally had and this is all channelled into the main depression. In the past all of the gilgai on this site may have flooded with heavy local rain and the waterholes may have had sufficient longevity to support water plants such as *Typha* that may have been the main attraction for Aboriginal people.

The oven mounds (Figure 15) are all composed of burnt clay nodules and range in size from a normal hearth to a very large feature estimated as 25m long and 18m across with an average height of 40cm and a peak (of the most recent oven) about 80cm high (Figure 16). The function of the mounds is unknown and further investigation should be guided by the work of Martin (2011) done elsewhere on the Lachlan and lower Murrumbidgee.

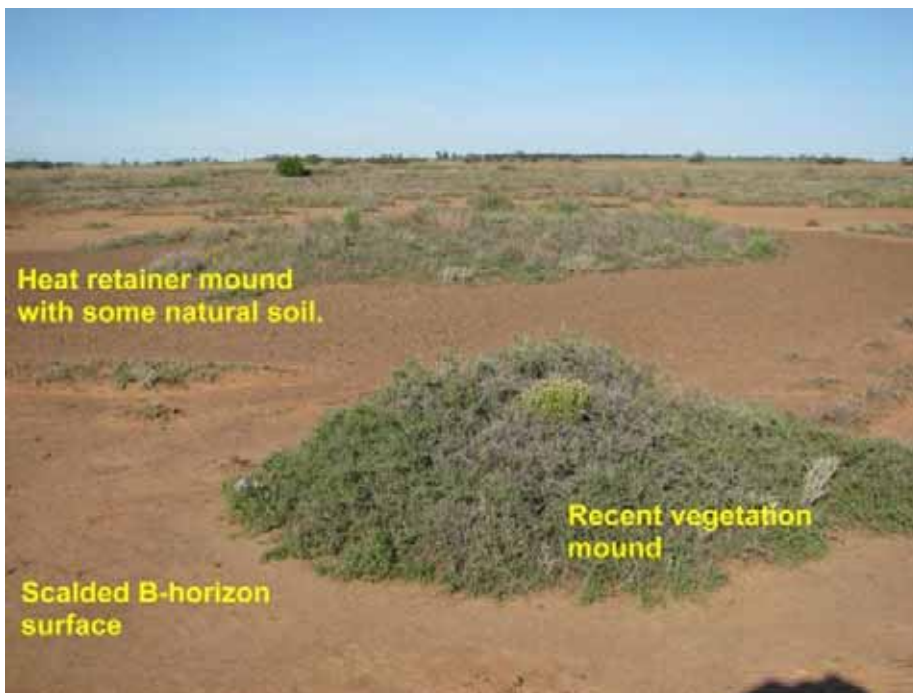


Figure 15. Large oven mound and recent vegetation mound on the scalded surface near the gilgai on the power line route.



Figure 16. Very large, intact oven mound adjacent to the gilgai on the power line route.

Survival of this cluster of mounds and the associated gilgai in a landscape dominated by cultivation for wheat crops has been by chance. Other dark areas of soil exposed in cultivated paddocks are visible on Google images along the palaeo-channel and in adjacent paddocks, notably 500m east and 1.4km northwest of this site but if mounds were associated with any of these they have probably been destroyed. The land holder has used the gilgai as a convenient water source but most other similar areas have been ploughed out and if oven mounds were associated with them they have probably been destroyed.

More gilgai and perhaps associated mounds may be preserved along the stock route on the Kyalite-Balranald road about 4km east of the site.

Given the extent of cultivation in this landscape it appears that this mound and gilgai complex may be one of the last that is reasonably intact and in that case its future management and preservation will depend on the land holder. It would be desirable to avoid any site modification and the easiest way this could be achieved would be to fence the site from traffic, cultivation and stock.

Conclusions

Within the vicinity of the mine lease there is a complex fluvial and lacustrine landscape the history of which extends through the Pleistocene and has a similar story of increasing aridity and changing human occupation as known at Lake Mungo. The sequence of declining river flow and drying lakes however may not be in phase with Lake Mungo if channel switching was an important part of the geomorphic processes operating on the Lachlan alluvial fan.

Three different patterns of human occupation may be evident:

1. Pleistocene occupation of the lunettes during lake full periods.
2. Construction of large oven mounds on large gilgai at an unknown time.
3. Dispersed and episodic occupation of the sand plain country based on smaller gilgai after the lakes dried up.

Probably the oldest site is WB65 on the lunette of Muckee Lake. This seems to be located in the predicted wet phase sediments and soil (Figure 4) and the presence of burnt *Genyornis* egg shell indicates that it is of Pleistocene age. The potential importance of this site to Australian pre-history cannot be over-emphasised. An approach to the further investigation of this site would be to examine it stratigraphically and to date the enclosing sediments using OSL or TL. Detailed archaeological investigation may be warranted.

The oven mounds on the gilgai along the power line are an unusual form of Aboriginal land use. They may once have been more common but modern cultivation for wheat crops has probably destroyed most others although a search for similar features along the stock route may reveal more. Further disturbance of this site can probably be avoided during power line construction but its future management depends on the land holder. The mounds themselves could be further investigated to determine their age and function.

After the lakes dried permanently Aboriginal people apparently used the landscape quite differently and WB40/41 and WB42 are examples of this form of land use. This was a dispersed occupation of the sand plain country based on ephemeral water supplies and wetlands provided by flooded gilgai. Little is known of this pattern of activity and these sites provide an opportunity for OSL or TL dating of the sediments and archaeological investigation of the deposits.

With the exception of WB42 these sand plain sites are all at least partly scalded and therefore much of the archaeological integrity has been destroyed by erosion. However reasonably intact hearths can be dated, surface collection of artefacts may be warranted, and there may be opportunity to investigate *in situ* deposits beneath vegetation mounds if such features can be located. Further work on the very large scalded sites such as at T1 and T14 is probably not warranted.

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Appendix 3 – AHIMS Search Results

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-5-0001	Lake Waldaira;	AGD	54	712960	6163793	Open site	Valid	Burial : -	Burial/s	
	Contact	Recorders	ASRSYS					Permits		
47-5-0002	Balranald;	AGD	54	714000	6167900	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact	Recorders	K Williams					Permits		
47-5-0003	Balranald;	AGD	54	713900	6167800	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact	Recorders	K Williams					Permits		
47-6-0182	Lower Boundary 31	GDA	54	730047	6161103	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		
47-6-0183	Lower Boundary 32	GDA	54	730039	6161221	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		
47-6-0184	Lower Boundary 33	GDA	54	729891	6161203	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke					Permits		
47-6-0185	Lower Boundary 34	GDA	54	729937	6161349	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		
47-6-0186	Lower Boundary 35	GDA	54	729876	6161418	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke					Permits		
47-6-0187	Lower Boundary 36	GDA	54	729868	6161428	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke					Permits		
47-6-0188	Lower Boundary 37	GDA	54	729923	6161646	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0189	Lower Boundary 38 Contact Searle	GDA	54	729997	6161601	Open site	Valid	Artefact : -, Hearth : -		Permits
47-6-0190	Lower Boundary 39 Contact Searle	GDA	54	730009	6161595	Open site	Valid	Hearth : -		Permits
47-6-0139	Lower Boundary 21 Contact Searle	GDA	54	730023	6161043	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0140	Lower Boundary 22 Contact Searle	GDA	54	729986	6161065	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0141	Lower Boundary 23 Contact Searle	GDA	54	729798	6160988	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0142	Lower Boundary 24 Contact Searle	GDA	54	729817	6160884	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0143	Lower Boundary 25 Contact Searle	GDA	54	729933	6160731	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0144	Lower Boundary 26 Contact Searle	GDA	54	730019	6160693	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0065	Lower Boundary 04 Contact Searle	GDA	54	730020	6161351	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0066	Lower Boundary 05 Contact Searle	GDA	54	730050	6161356	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-2-0124	TIN TIN 307	GDA	54	727021	6196861	Open site	Valid	Hearth : -		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders								Permits
47-2-0125	TIN TIN 308	GDA	54	727052	6196822	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0126	TIN TIN 309	GDA	54	727070	6196830	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders								Permits
47-2-0127	TIN TIN 310	GDA	54	727105	6196861	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0128	TIN TIN 311	GDA	54	727105	6196867	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0129	TIN TIN 312	GDA	54	727103	6196880	Open site	Valid	Earth Mound : -		
	Contact	Recorders								Permits
47-2-0130	TIN TIN 314	GDA	54	727484	6196236	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders								Permits
47-2-0131	TIN TIN 315	GDA	54	727492	6196254	Open site	Partially Destroyed	Hearth : -		
	Contact	Recorders								Permits
47-2-0132	TIN TIN 316	GDA	54	727479	6196309	Open site	Valid	Earth Mound : -		
	Contact	Recorders								Permits
47-2-0133	TIN TIN 317	GDA	54	729354	6198055	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0134	TIN TIN 318	GDA	54	729763	6198152	Open site	Valid	Artefact : -		
	Contact	Recorders								Permits
47-2-0096	tin tin 201	GDA	54	726817	6197034	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0097	tin tin 202	GDA	54	726831	6197035	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0098	tin tin 203	GDA	54	726812	6197042	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0099	tin tin 204	GDA	54	726816	6197104	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0100	tin tin 206	GDA	54	726845	6197100	Open site	Valid	Artefact : -		
	Contact	Recorders								Permits
47-2-0101	tin tin 208	GDA	54	726895	6197049	Closed site	Valid	Hearth : -		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0102	tin tin 209	GDA	54	726982	6197017	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0103	tin tin 210	GDA	54	727089	6196994	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0104	tin tin 211	GDA	54	727270	6197066	Open site	Valid	Earth Mound : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0105	tin tin 212	GDA	54	727135	6197177	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0106	tin tin 213	GDA	54	727097	6197183	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0107	tin tin 207	GDA	54	727065	6197155	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0108	tin tin 214	GDA	54	727156	6196896	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0109	tin tin 215	GDA	54	727469	6196192	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0110	tin tin 216	GDA	54	727579	6196245	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0111	tin tin 217	GDA	54	727563	6196278	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0112	tin tin 220	GDA	54	728721	6197412	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0113	tin tin 219	GDA	54	728727	6197311	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0114	tin tin 221	GDA	54	728743	6197317	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0115	tin tin 222	GDA	54	728766	6197310	Open site	Valid	Artefact : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0117	tin tin 225	GDA	54	728704	6197201	Closed site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							
47-2-0162	tin tin 1	GDA	54	726814	6197029	Open site	Valid	Hearth : -		Permits
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0163	tin tin 2	GDA	54	726812	6197096	Open site	Partially Destroyed	Hearth : -		
	Contact									Permits
47-2-0164	tin tin 3	GDA	54	726808	6197106	Open site	Partially Destroyed	Hearth : -		
	Contact									Permits
47-2-0165	tin tin 4	GDA	54	726810	6197109	Open site	Valid	Hearth : -		
	Contact									Permits
47-2-0166	tin tin 5	GDA	54	726831	6197134	Open site	Valid	Hearth : -		
	Contact									Permits
47-2-0167	tin tin 6	GDA	54	726859	6197082	Open site	Partially Destroyed	Earth Mound : -, Hearth : -		
	Contact									Permits
47-2-0168	tin tin 7	GDA	54	726887	6197061	Open site	Valid	Hearth : -		
	Contact									Permits
47-2-0169	tin tin 8	GDA	54	726899	6197054	Open site	Valid	Hearth : -		
	Contact									Permits
47-2-0170	tin tin 9	GDA	54	727100	6197006	Open site	Valid	Hearth : -		
	Contact									Permits
47-2-0171	tin tin 10	GDA	54	727110	6197003	Open site	Valid	Hearth : -		
	Contact									Permits
47-2-0172	tin tin 11	GDA	54	727129	6197175	Open site	Partially Destroyed	Hearth : -		
	Contact									Permits
47-2-0173	tin tin 12	GDA	54	727102	6197174	Open site	Partially Destroyed	Artefact : -		
	Contact									Permits
47-2-0175	tin tin 14	GDA	54	727121	6196910	Open site	Partially Destroyed	Earth Mound : -		
	Contact									Permits
47-2-0176	tin tin 15	GDA	54	727099	6196910	Open site	Partially Destroyed	Hearth : -		
	Contact									Permits
47-2-0177	tin tin 16	GDA	54	727643	6196122	Open site	Partially Destroyed	Hearth : -		
	Contact									Permits

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0178	tin tin 17	GDA	54	728048	6196312	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0183	tin tin 22	GDA	54	728795	6197221	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0184	tin tin 23	GDA	54	728717	6197194	Open site	Partially Destroyed	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0185	tin tin 24	GDA	54	729123	6196928	Open site	Valid	Earth Mound : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0186	tin tin 25	GDA	54	729110	6196936	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0187	tin tin 26	GDA	54	729210	6196987	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0188	tin tin 27	GDA	54	729221	6196999	Open site	Valid	Grinding Groove : -, Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0189	tin tin 28	GDA	54	729218	6197021	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0190	tin tin 29	GDA	54	729265	6196988	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0179	tin tin 18	GDA	54	728726	6197407	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0180	tin tin 19	GDA	54	728713	6197399	Open site	Partially Destroyed	Earth Mound : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0182	tin tin 21	GDA	54	728748	6197270	Open site	Partially Destroyed	Earth Mound : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0118	TIN TIN 301	GDA	54	726638	6196797	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson							Permits
47-2-0119	TIN TIN 300	GDA	54	726644	6196789	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson							Permits
47-2-0120	TIN TIN 303	GDA	54	726705	6196814	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson							Permits

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0121	TIN TIN 304	GDA	54	726797	6196855	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson							Permits
47-2-0122	TIN TIN 305	GDA	54	726862	6196865	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson							Permits
47-2-0123	tin tin 306	GDA	54	726949	6196832	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson							Permits
47-2-0174	tin tin 13	GDA	54	727111	6196895	Open site	Valid	Earth Mound : -, Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0181	tin tin 20	GDA	54	728709	6197280	Open site	Valid	Earth Mound : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0152	tin tin 117	GDA	54	726952	6196955	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0159	tin tin 124	GDA	54	729732	6197952	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0135	TIN TIN 319	GDA	54	729763	6198152	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson							Permits
47-2-0116	tin tin 224	GDA	54	728721	6197194	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0136	tin tin 101	GDA	54	726791	6197023	Open site	Valid	Artefact : -,Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0137	tin tin 102	GDA	54	726637	6196971	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0138	tin tin 103	GDA	54	726603	6196961	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0139	tin tin 104	GDA	54	726580	6196962	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0140	tin tin 105	GDA	54	726576	6196970	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0141	tin tin 106	GDA	54	726578	6196961	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0142	tin tin 107	GDA	54	726559	6196909	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0143	tin tin 108	GDA	54	726634	6197059	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0144	tin tin 109	GDA	54	726746	6197099	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0145	tin tin 110	GDA	54	726745	6197103	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0146	tin tin 111	GDA	54	726727	6197115	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0147	tin tin 112	GDA	54	726796	6196964	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0148	tin tin 113	GDA	54	726816	6196968	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0149	tin tin 114	GDA	54	726906	6196912	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0150	tin tin 115	GDA	54	726902	6196920	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0151	tin tin 116	GDA	54	726921	6196965	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0153	tin tin 118	GDA	54	726971	6196964	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0154	tin tin 119	GDA	54	727078	6196903	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0155	tin tin 120	GDA	54	727086	6196900	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0156	tin tin 121	GDA	54	727058	6196894	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0157	tin tin 122	GDA	54	728079	6196622	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0158	tin tin 123	GDA	54	728378	6196425	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0160	tin tin 125	GDA	54	729722	6197956	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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AHIMS Web Services (AWS)

Extensive search - Site list report

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Mr.RENE WOODS					<u>Permits</u>		
47-2-0161	tin tin 126	GDA	54	729140	6197815	Open site	Valid	Hearth : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.RENE WOODS					<u>Permits</u>		
47-2-0191	Tin Tin Huts & Camps	GDA	54	727164	6197444	Open site	Valid	Conflict : -		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Sarah Martin					<u>Permits</u>		
47-2-0192	KARRA 1	GDA	54	722316	6191432	Open site	Valid	Artefact : 16		
	<u>Contact</u> Mr.Ray Murray	<u>Recorders</u>	Doctor.Tim Stone					<u>Permits</u>		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 117

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-3-0291	Narwie 308	GDA	54	731555	6199273	Open site	Valid	Earth Mound : -, Hearth : -		
	Contact									Recorders Mr.Roland Williams,Mr.Claude Jackson Permits
47-3-0292	Narwie 309	GDA	54	731584	6199292	Open site	Valid	Hearth : -		
	Contact									Recorders Mr.Roland Williams,Mr.Claude Jackson Permits
47-3-0293	Narwie 310	GDA	54	731572	6199308	Open site	Valid	Artefact : -,Hearth : -		
	Contact									Recorders Mr.Roland Williams,Mr.Claude Jackson Permits
47-3-0294	Narwie 311	GDA	54	731581	6199319	Open site	Valid	Hearth : -		
	Contact									Recorders Mr.Roland Williams,Mr.Claude Jackson Permits
47-3-0295	Narwie 312	GDA	54	731575	6199325	Open site	Valid	Hearth : -		
	Contact									Recorders Mr.Roland Williams,Mr.Claude Jackson Permits
47-3-0296	Narwie 313	GDA	54	731569	6199416	Open site	Valid	Earth Mound : -		
	Contact									Recorders Mr.Roland Williams,Mr.Claude Jackson Permits
47-3-0297	Narwie 314	GDA	54	731435	6199499	Open site	Valid	Earth Mound : -		
	Contact									Recorders Mr.Roland Williams,Mr.Claude Jackson Permits
47-3-0401	tin tin 30	GDA	54	731645	6199225	Open site	Valid	Earth Mound : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0402	tin tin 31	GDA	54	731629	6199211	Open site	Valid	Earth Mound : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0403	tin tin 32	GDA	54	731630	6199201	Open site	Valid	Hearth : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0404	tin tin 33	GDA	54	731632	6199197	Open site	Valid	Hearth : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0405	tin tin 34	GDA	54	731625	6199194	Open site	Valid	Hearth : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0406	tin tin 35	GDA	54	731620	6199187	Open site	Valid	Hearth : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0407	tin tin 36	GDA	54	731612	6199180	Open site	Valid	Hearth : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0408	tin tin 37	GDA	54	731611	6199157	Open site	Valid	Hearth : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits
47-3-0409	tin tin 38	GDA	54	731605	6199145	Open site	Valid	Hearth : -		
	Contact									Recorders Doctor.Sarah Martin,Ms.Karen Murray Permits

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 745000, Northings : 6190000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 31

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports	
47-3-0410	tin tin 39	GDA	54	731606	6199140	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-3-0411	tin tin 40	GDA	54	731597	6199128	Open site	Valid	Earth Mound : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-3-0412	tin tin 41	GDA	54	731591	6199111	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-3-0413	tin tin 42	GDA	54	731570	6199098	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-3-0340	narwie 154	GDA	54	731659	6199377	Open site	Valid	Artefact : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0298	Narwie 315	GDA	54	731462	6199472	Open site	Valid	Artefact : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-3-0335	tin tin 127	GDA	54	731637	6199240	Open site	Valid	Earth Mound : -, Hearth : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0336	narwie 150	GDA	54	731659	6199260	Open site	Valid	Hearth : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0337	narwie 151	GDA	54	731680	6199292	Open site	Valid	Earth Mound : -, Hearth : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0338	narwie 152	GDA	54	731675	6199298	Open site	Valid	Hearth : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0339	narwie 153	GDA	54	731672	6199321	Open site	Valid	Hearth : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0341	narwie 155	GDA	54	731691	6199376	Open site	Valid	Artefact : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0342	narwie 156	GDA	54	731830	6199305	Open site	Valid	Hearth : -, Shell : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0343	narwie 157	GDA	54	731891	6199294	Open site	Valid	Hearth : -, Shell : -			
	Contact	Recorders	Mr.RENE WOODS								Permits
47-3-0344	narwie 158	GDA	54	731889	6199308	Open site	Valid	Artefact : -			
	Contact	Recorders	Mr.RENE WOODS								Permits

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 745000, Northings : 6190000 - 6200000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 31

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports	
47-3-0313	paika lake 101	GDA	54	737243	6179571	Open site	Valid	Modified Tree (Carved or Scarred) : -			
	Contact	Recorders	Mr.Roland Williams,Mr.RENE WOODS,Mr.Brendan Kennedy						Permits		
47-3-0209	paika lake 404	GDA	54	736799	6179700	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0210	paika lake 405	GDA	54	736798	6179729	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0211	paika lake 406	GDA	54	736781	6179821	Open site	Valid	Modified Tree (Carved or Scarred) : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0212	paika lake 407	GDA	54	736755	6179874	Open site	Valid	Modified Tree (Carved or Scarred) : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0213	paika lake 408	GDA	54	736767	6180010	Open site	Valid	Modified Tree (Carved or Scarred) : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0206	paika lake 401	GDA	54	736973	6179631	Open site	Partially Destroyed	Modified Tree (Carved or Scarred) : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0207	paika lake 402	GDA	54	736848	6179639	Open site	Valid	Modified Tree (Carved or Scarred) : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0208	paika lake 403	GDA	54	736835	6179638	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Smokey Murray						Permits		
47-3-0259	paika 201	GDA	54	736838	6179727	Open site	Valid	Modified Tree (Carved or Scarred) : -			
	Contact	Recorders	Badger Bates,Doctor.Sarah Martin						Permits		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 740000, Northings : 6170000 - 6180000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 35

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-3-0260	paika 202	GDA	54	736846	6179758	Open site	Valid	Aboriginal Resource and Gathering : -, Habitation Structure : -		
	Contact									Recorders Badger Bates,Doctor.Sarah Martin
47-3-0261	paika 203	GDA	54	736803	6179825	Open site	Valid	Habitation Structure : -, Modified Tree (Carved or Scarred) : -		Permits
	Contact									Recorders Badger Bates,Doctor.Sarah Martin
47-3-0262	paika 204	GDA	54	736816	6179797	Open site	Valid	Hearth : -, Shell : -		Permits
	Contact									Recorders Badger Bates,Doctor.Sarah Martin
47-3-0263	paika 205	GDA	54	736879	6179963	Open site	Valid	Hearth : -, Non-Human Bone and Organic Material : -, Shell : -		Permits
	Contact									Recorders Badger Bates,Doctor.Sarah Martin
47-3-0264	paika 206	GDA	54	736765	6180034	Open site	Valid	Habitation Structure : -, Hearth : -		Permits
	Contact									Recorders Badger Bates,Doctor.Sarah Martin
47-3-0314	paika lake 102	GDA	54	737239	6179569	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact									Recorders Mr.RENE WOODS,Mr.Brendan Kennedy
47-6-0560	paika lake 103	GDA	54	737175	6179534	Open site	Valid	Artefact : -, Hearth : -		Permits
	Contact									Recorders Mr.Brendan Kennedy
47-3-0315	paika lake 104	GDA	54	737034	6179547	Open site	Valid	Artefact : -, Hearth : -		Permits
	Contact									Recorders Mr.RENE WOODS,Mr.Brendan Kennedy
47-3-0316	paika lake 105	GDA	54	736986	6179567	Open site	Valid	Artefact : -, Hearth : -, Shell : -		Permits
	Contact									Recorders Mr.RENE WOODS,Mr.Brendan Kennedy
47-3-0351	paika west 3	GDA	54	737271	6179590	Open site	Valid	Shell : -		Permits
	Contact									Recorders Doctor.Sarah Martin,Ms.Elaine Purtill
47-3-0352	paika west 4	GDA	54	737268	6179568	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact									Recorders Doctor.Sarah Martin,Ms.Elaine Purtill

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 740000, Northings : 6170000 - 6180000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 35

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-3-0353	paika west 5	GDA	54	737196	6179563	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Doctor.Sarah Martin,Ms.Elaine Purtill
										Permits
47-3-0354	paika west 6	GDA	54	737149	6179556	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Doctor.Sarah Martin,Ms.Elaine Purtill
										Permits
47-3-0355	paika west 7	GDA	54	736905	6179607	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
										Permits
47-3-0356	paika west 8	GDA	54	736863	6179639	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
										Permits
47-3-0357	paika west 9	GDA	54	736860	6179637	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
										Permits
47-3-0358	paika west 10	GDA	54	736828	6179669	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
										Permits
47-3-0359	paika west 11	GDA	54	736820	6179701	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
										Permits
47-3-0360	paika west 12	GDA	54	736821	6179701	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
										Permits
47-3-0361	paika west 13	GDA	54	736827	6179708	Open site	Valid	Modified Tree (Carved or Scarred) :	-	
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
										Permits

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 740000, Northings : 6170000 - 6180000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 35

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-3-0362	paika west 14	GDA	54	736810	6179772	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
47-3-0363	paika west 15	GDA	54	736802	6179944	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
47-3-0364	paika west 16	GDA	54	736797	6179955	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
47-3-0365	paika west 17	GDA	54	736781	6180026	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray
47-3-0366	paika west 18	GDA	54	736784	6180024	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact									Recorders Mr.Brendan Kennedy,Mr.Andrew Smith,Mr.Ray Murray

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 740000, Northings : 6170000 - 6180000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 35

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0008	Balranald Mission	AGD	54	733533	6165406	Open site	Valid	Earth Mound : -, Shell : -, Artefact : -	Midden	
	Contact									Recorders K Williams
										Permits
47-6-0009	Balranald;Town Common;	AGD	54	737184	6165224	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact									Recorders K Williams
										Permits
47-6-0011	Balranald;Town Common;	AGD	54	739056	6166047	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact									Recorders K Williams
										Permits
47-6-0012	Balranald;	AGD	54	739056	6166047	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact									Recorders K Williams
										Permits
47-6-0013	Balranald;Town Common;	AGD	54	739056	6166047	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact									Recorders K Williams
										Permits
47-6-0039	Balranald Common Scarred Tree 2/3	AGD	54	738300	6166670	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact									Recorders Harvey Johnston
										Permits
47-6-0040	Balranald Common Scarred Tree 1	AGD	54	737048	6165051	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact									Recorders Harvey Johnston
										Permits
47-6-0571	Auley 1.1	AGD	54	739719	6168839	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact									Recorders Doctor.Sarah Martin
										Permits
47-6-0572	Auley 1.2	AGD	54	739708	6168833	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact									Recorders Doctor.Sarah Martin
										Permits
47-6-0573	Auley 1.3	AGD	54	739714	6168863	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact									Recorders Doctor.Sarah Martin
										Permits

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 740000, Northings : 6165000 - 6170000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine. Number of Aboriginal sites and Aboriginal objects found is 12

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AHIMS Web Services (AWS)

Extensive search - Site list report

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Doctor.Sarah Martin					<u>Permits</u>		
47-6-0574	Auley 2.1	AGD	54	739686	6168943	Open site	Valid	Hearth : -		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Sarah Martin					<u>Permits</u>		
47-6-0576	Auley 4	AGD	54	739160	6169217	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Sarah Martin					<u>Permits</u>		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 740000, Northings : 6165000 - 6170000 with a Buffer of 50 meters.Additional Info : Archaeological assessment for proposed sand mine. Number of Aboriginal sites and Aboriginal objects found is 12

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AHIMS Web Services (AWS)

Extensive search - Site list report

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
40-5-0099	AS-004	AGD	54	700900	6237300	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		

Report generated by AHIMS Web Service on 22/05/2012 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 740000, Northings : 6200000 - 6240000 with a Buffer of 50 meters. Additional Info : Archaeological assessment for proposed sand mine.. Number of Aboriginal sites and Aboriginal objects found is 1

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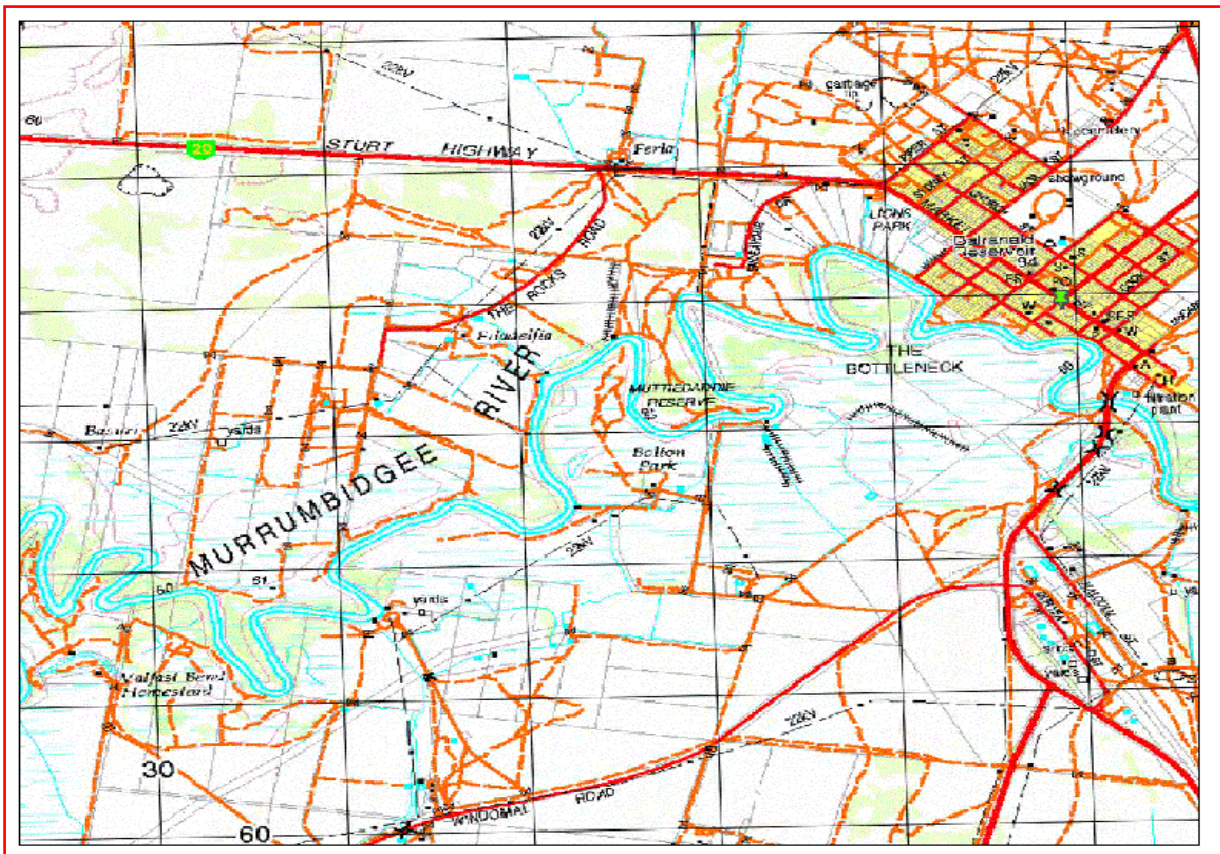
Niche Environment and Heritage
PO Box 3104
Umina Beach New South Wales 2257
Attention: Clare Anderson
Email: canderson@niche-eh.com

Date: 21 October 2013

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 54, Eastings : 729950 - 735000, Northings : 6160000 - 6166000 with a Buffer of 50 meters, conducted by Clare Anderson on 21 October 2013.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

77	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0008	Balranald Mission	AGD	54	733533	6165406	Open site	Valid	Earth Mound : -, Shell : -, Artefact : -	Midden	
	Contact									
	Recorders									
47-6-0009	Balranald;Town Common;	AGD	54	737184	6165224	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact									
	Recorders									
47-6-0010	Balranald;Town Common;	AGD	54	740059	6167827	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact									
	Recorders									
47-6-0011	Balranald;Town Common;	AGD	54	739056	6166047	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact									
	Recorders									
47-6-0012	Balranald;	AGD	54	739056	6166047	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact									
	Recorders									
47-6-0013	Balranald;Town Common;	AGD	54	739056	6166047	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact									
	Recorders									
47-6-0039	Balranald Common Scarred Tree 2/3	AGD	54	738300	6166670	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									
	Recorders									
47-6-0040	Balranald Common Scarred Tree 1	AGD	54	737048	6165051	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									
	Recorders									
47-6-0005	Balranald Island Burial	AGD	54	739354	6162828	Open site	Valid	Burial : -	Burial/s	
	Contact									
	Recorders									
47-6-0001	Balranald Fish Traps	AGD	54	732500	6163550	Open site	Valid	Fish Trap : -	Fish Trap	
	Contact									
	Recorders									
47-6-0048	balranald levee 3	AGD	54	735891	6164312	Open site	Valid	Modified Tree (Carved or Scarred) : -		98524
	Contact									
	Recorders									

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0049	balranald levee 4	AGD	54	735890	6164138	Open site	Valid	Modified Tree (Carved or Scarred) : -		98524
	<u>Contact</u>								<u>Permits</u>	
47-6-0050	balranald levee 8	AGD	54	735987	6163862	Open site	Valid	Modified Tree (Carved or Scarred) : -		98524
	<u>Contact</u>								<u>Permits</u>	
47-6-0051	balranald levee 7	AGD	54	734150	6163750	Open site	Valid	Shell : -		98524
	<u>Contact</u>								<u>Permits</u>	
47-6-0052	police paddocks 3	AGD	54	735498	6163544	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98524
	<u>Contact</u>								<u>Permits</u>	
47-6-0053	police paddocks 2	AGD	54	735512	6163637	Open site	Valid	Modified Tree (Carved or Scarred) : -		98524
	<u>Contact</u>								<u>Permits</u>	
47-6-0180	Lower Boundary 29	GDA	54	730215	6161073	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle								<u>Permits</u>	
47-6-0181	Lower Boundary 30	GDA	54	730113	6161112	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle								<u>Permits</u>	
47-6-0182	Lower Boundary 31	GDA	54	730047	6161103	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle								<u>Permits</u>	
47-6-0183	Lower Boundary 32	GDA	54	730039	6161221	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle								<u>Permits</u>	
47-6-0190	Lower Boundary 39	GDA	54	730009	6161595	Open site	Valid	Hearth : -		
	<u>Contact</u> Searle								<u>Permits</u>	

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0191	Lower Boundary 40	GDA	54	730067	6161594	Open site	Valid	Earth Mound : -, Non-Human Bone and Organic Material : -, Shell : -, Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Mr.Lawrence Clarke
										<u>Permits</u>
47-6-0192	Lower Boundary 41	GDA	54	730120	6161531	Open site	Valid	Hearth : -		
	<u>Contact</u> Searle									<u>Recorders</u> Mr.Lawrence Clarke
										<u>Permits</u>
47-6-0179	Lower Boundary 28	GDA	54	730392	6161104	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Mr.Lawrence Clarke
										<u>Permits</u>
47-6-0233	Lower Boundary 56	GDA	54	730552	6161093	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly
										<u>Permits</u>
47-6-0234	Lower Boundary 57	GDA	54	730498	6161063	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly
										<u>Permits</u>
47-6-0235	Lower Boundary 58	GDA	54	730501	6161112	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly
										<u>Permits</u>
47-6-0236	Lower Boundary 59	GDA	54	730510	6161110	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Tanya Charles,Mr.Shannon Kelly
										<u>Permits</u>
47-6-0237	Lower Boundary 60	GDA	54	730504	6161147	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Tanya Charles,Mr.Shannon Kelly
										<u>Permits</u>
47-6-0238	Lower Boundary 61	GDA	54	730455	6161186	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u> Searle									<u>Recorders</u> Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly
										<u>Permits</u>
47-6-0239	Lower Boundary 62	GDA	54	730448	6161179	Open site	Valid	Modified Tree (Carved or Scarred) : -		

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0240	Lower Boundary 63	GDA	54	730447	6161169	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly Permits
47-6-0241	Lower Boundary 64	GDA	54	730437	6161195	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Mr.Shannon Kelly Permits
47-6-0242	Lower Boundary 65	GDA	54	730441	6161200	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Mr.Shannon Kelly Permits
47-6-0243	Lower Boundary 66	GDA	54	730432	6161215	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Mr.Shannon Kelly Permits
47-6-0244	Lower Boundary 67	GDA	54	730439	6161217	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly Permits
47-6-0245	Lower Boundary 68	GDA	54	730313	6161296	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Mr.Shannon Kelly Permits
47-6-0246	Lower Boundary 69	GDA	54	730320	6161329	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Mr.Michael Kelly,Mr.Shannon Kelly Permits
47-6-0247	Lower Boundary 70	GDA	54	730299	6161396	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly Permits
47-6-0248	Lower Boundary 71	GDA	54	730226	6161400	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly Permits
47-6-0249	Lower Boundary 72	GDA	54	730230	6161398	Open site	Valid	Modified Tree (Carved or Scarred) : -		Contact Searle Recorders Tanya Charles,Ms.Cheryl Brown,Mr.Michael Kelly,Mr.Shannon Kelly Permits

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0250	Lower Boundary 73	GDA	54	730227	6161393	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0251	Lower Boundary 74	GDA	54	730214	6161392	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0252	Lower Boundary 75	GDA	54	730206	6161366	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0061	Lower Boundary 0	GDA	54	731163	6161519	Open site	Valid	Artefact : -		Permits
47-6-0219	Lower Boundary 42	GDA	54	731163	6161519	Open site	Valid	Artefact : -		Permits
47-6-0220	Lower Boundary 43	GDA	54	731164	6161519	Open site	Valid	Artefact : -		Permits
47-6-0221	Lower Boundary 44	GDA	54	731030	6161478	Open site	Valid	Hearth : -		Permits
47-6-0222	Lower Boundary 45	GDA	54	731021	6161458	Open site	Valid	Artefact : -, Earth Mound : -, Hearth : -		Permits
47-6-0223	Lower Boundary 46	GDA	54	730999	6161454	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0224	Lower Boundary 47	GDA	54	730988	6161477	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0225	Lower Boundary 48	GDA	54	730986	6161487	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
47-6-0226	Lower Boundary 49	GDA	54	730899	6161406	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0227	Lower Boundary 50	GDA	54	730861	6161366	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Joe Xie,Mr.Michael Kelly							
47-6-0228	Lower Boundary 51	GDA	54	730828	6161265	Open site	Valid	Artefact : -, Hearth : -, Shell : -		Permits
	Contact Searle	Recorders	Mr.Joe Xie,Mr.Michael Kelly							
47-6-0229	Lower Boundary 52	GDA	54	730856	6161179	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Joe Xie,Mr.Michael Kelly							
47-6-0230	Lower Boundary 53	GDA	54	730890	6161092	Open site	Valid	Hearth : -		Permits
	Contact Searle	Recorders	Mr.Joe Xie,Mr.Michael Kelly							
47-6-0231	Lower Boundary 54	GDA	54	730996	6161245	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Joe Xie,Mr.Michael Kelly							
47-6-0232	Lower Boundary 55	GDA	54	731000	6161251	Open site	Valid	Hearth : -		Permits
	Contact Searle	Recorders	Mr.Joe Xie,Mr.Michael Kelly							
47-6-0125	Lower Boundary 7	GDA	54	730680	6161449	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Mark Brettschneider							
47-6-0126	Lower Boundary 8	GDA	54	730713	6161337	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Mark Brettschneider							
47-6-0127	Lower Boundary 9	GDA	54	730750	6161132	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Mark Brettschneider							
47-6-0128	Lower Boundary 10	GDA	54	730832	6161166	Open site	Partially Destroyed	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Mark Brettschneider							
47-6-0129	Lower Boundary 11	GDA	54	730693	6160998	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle	Recorders	Mr.Mark Brettschneider							

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0130	Lower Boundary 12	GDA	54	730684	6160997	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider
										Permits
47-6-0131	Lower Boundary 13	GDA	54	730628	6160922	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider
										Permits
47-6-0132	Lower Boundary 14	GDA	54	730683	6160910	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider
										Permits
47-6-0133	Lower Boundary 15	GDA	54	730618	6160986	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider
										Permits
47-6-0134	Lower Boundary 16	GDA	54	730530	6161048	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider
										Permits
47-6-0135	Lower Boundary 17	GDA	54	730524	6161027	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider
										Permits
47-6-0136	Lower Boundary 18	GDA	54	730493	6161066	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Lawrence Clarke,Mr.Mark Brettschneider
										Permits
47-6-0137	Lower Boundary 19	GDA	54	730470	6161007	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles
										Permits
47-6-0138	Lower Boundary 20	GDA	54	730169	6160899	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider,Mr.Jared Ells
										Permits
47-6-0326	LALC Scar Tree	GDA	54	736646	6162361	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Lawrence Clarke
										Permits

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0139	Lower Boundary 21	GDA	54	730023	6161043	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact Searle									Recorders Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles
47-6-0144	Lower Boundary 26	GDA	54	730019	6160693	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles
47-6-0145	Lower Boundary 27	GDA	54	730346	6160719	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles
47-6-0062	Lower Boundary 01	GDA	54	730172	6161148	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew
47-6-0063	Lower Boundary 02	GDA	54	730144	6161142	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew
47-6-0064	Lower Boundary 03	GDA	54	730140	6161192	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew
47-6-0065	Lower Boundary 04	GDA	54	730020	6161351	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew
47-6-0066	Lower Boundary 05	GDA	54	730050	6161356	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew
47-6-0067	Lower Boundary 06	GDA	54	730060	6161393	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew
47-6-0327	Island Scar Tree	GDA	54	736646	6162361	Open site	Valid	Modified Tree (Carved or Scarred) : -		Permits
	Contact Searle									Recorders Mr.Lawrence Clarke

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0571	Auley 1.1	AGD	54	739719	6168839	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0572	Auley 1.2	AGD	54	739708	6168833	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0573	Auley 1.3	AGD	54	739714	6168863	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0574	Auley 2.1	AGD	54	739686	6168943	Open site	Valid	Hearth : -		
	Contact									Permits
47-6-0575	Auley 3.1	AGD	54	742115	6169616	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0576	Auley 4	AGD	54	739160	6169217	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0577	Auley 2.2	AGD	54	740073	6169261	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0578	Auley 2.3	AGD	54	740146	6169298	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0579	Auley 2.4	AGD	54	740511	6169473	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
47-6-0014	Balranald;Town Commom;	AGD	54	740059	6167827	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact									Permits

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0015	Police Paddock Scarred Tree;	AGD	54	735400	6163300	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	1216
	Contact									
	Recorders									
47-6-0016	Muhti Muhti Reserve Midden;	AGD	54	733000	6164000	Open site	Valid	Earth Mound : -, Shell : -, Artefact : -	Midden	1216
	Contact									
	Recorders									
47-6-0002	Balranald Mission Cemetery and Island	AGD	54	735223	6162576	Open site	Valid	Aboriginal Ceremony and Dreaming : -, Burial : -		
	Contact									
	Recorders									
47-6-0006	Balranald Burial Grounds	AGD	54	732429	6163447	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Scarred Tree	
	Contact									
	Recorders									
47-6-0046	balranald levee 1	AGD	54	735812	6164400	Open site	Valid	Modified Tree (Carved or Scarred) :		98524
	Contact									
	Recorders									
47-6-0044	balranald levee 5	AGD	54	735830	6164022	Open site	Valid	Modified Tree (Carved or Scarred) :		98524
	Contact									
	Recorders									
47-6-0045	balranald levee 2	AGD	54	735860	6164355	Open site	Valid	Modified Tree (Carved or Scarred) :		98524
	Contact									
	Recorders									
47-6-0047	balranald levee 6	AGD	54	734800	6163492	Open site	Valid	Shell : -		98524
	Contact									
	Recorders									
47-6-0057	Woodmount	AGD	54	738007	6163225	Open site	Valid	Burial : -		
	Contact									
	Recorders									
47-6-0058	Yanga creek mound 1	AGD	54	735195	6163476	Open site	Valid	Earth Mound : -		
	Contact									
	Recorders									
47-6-0059	Yanga Creek mound 2	AGD	54	738918	6161077	Open site	Valid	Earth Mound : -		
	Contact									
	Recorders									
47-6-0060	Yanga creek scarred tree	AGD	54	740113	6161009	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact									
	Recorders									

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<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
47-6-0607	West Balranald 47	GDA	54	731292	6175312	Open site	Valid	Artefact : -		
	Contact	Recorders		Mr.Giles Hamm					Permits	

Report generated by AHIMS Web Service on 05/10/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 730000 - 744600, Northings : 6159200 - 6177770 with a Buffer of 0 meters. Additional Info : inform a predictive model. Number of Aboriginal sites and Aboriginal objects found is 107

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0181	tin tin 20	GDA	54	728709	6197280	Open site	Valid	Earth Mound : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts					Permits		
47-2-0152	tin tin 117	GDA	54	726952	6196955	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0159	tin tin 124	GDA	54	729732	6197952	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-3-0340	narwie 154	GDA	54	731659	6199377	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0135	TIN TIN 319	GDA	54	729763	6198152	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0298	Narwie 315	GDA	54	731462	6199472	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-2-0116	tin tin 224	GDA	54	728721	6197194	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray					Permits		
47-2-0136	tin tin 101	GDA	54	726791	6197023	Open site	Valid	Artefact : -,Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0137	tin tin 102	GDA	54	726637	6196971	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0138	tin tin 103	GDA	54	726603	6196961	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0139	tin tin 104	GDA	54	726580	6196962	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0140	tin tin 105	GDA	54	726576	6196970	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0141	tin tin 106	GDA	54	726578	6196961	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0143	tin tin 108	GDA	54	726634	6197059	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0144	tin tin 109	GDA	54	726746	6197099	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0145	tin tin 110	GDA	54	726745	6197103	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS					Permits		
47-2-0146	tin tin 111	GDA	54	726727	6197115	Open site	Valid	Hearth : -		

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 695000 - 740000, Northings : 6197000 - 6255000 with a Buffer of 50 meters. Additional Info : inform archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 96

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders								Permits
47-2-0147	tin tin 112	GDA	54	726796	6196964	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0148	tin tin 113	GDA	54	726816	6196968	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0151	tin tin 116	GDA	54	726921	6196965	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0153	tin tin 118	GDA	54	726971	6196964	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0160	tin tin 125	GDA	54	729722	6197956	Open site	Valid	Artefact : -		
	Contact	Recorders								Permits
47-2-0161	tin tin 126	GDA	54	729140	6197815	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-3-0335	tin tin 127	GDA	54	731637	6199240	Open site	Valid	Earth Mound : -, Hearth : -		
	Contact	Recorders								Permits
47-3-0336	narwie 150	GDA	54	731659	6199260	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-3-0337	narwie 151	GDA	54	731680	6199292	Open site	Valid	Earth Mound : -, Hearth : -		
	Contact	Recorders								Permits
47-3-0338	narwie 152	GDA	54	731675	6199298	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-3-0339	narwie 153	GDA	54	731672	6199321	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-3-0341	narwie 155	GDA	54	731691	6199376	Open site	Valid	Artefact : -		
	Contact	Recorders								Permits
47-3-0342	narwie 156	GDA	54	731830	6199305	Open site	Valid	Hearth : -, Shell : -		
	Contact	Recorders								Permits
47-3-0343	narwie 157	GDA	54	731891	6199294	Open site	Valid	Hearth : -, Shell : -		
	Contact	Recorders								Permits
47-3-0344	narwie 158	GDA	54	731889	6199308	Open site	Valid	Artefact : -		
	Contact	Recorders								Permits
47-2-0191	Tin Tin Huts & Camps	GDA	54	727164	6197444	Open site	Valid	Conflict : -		
	Contact	Recorders								Permits

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
40-5-0099	AS-004	AGD	54	700900	6237300	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0017	B-016	AGD	54	695100	6202300	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0133	TIN TIN 317	GDA	54	729354	6198055	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-2-0134	TIN TIN 318	GDA	54	729763	6198152	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0291	Narwie 308	GDA	54	731555	6199273	Open site	Valid	Earth Mound : -, Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0292	Narwie 309	GDA	54	731584	6199292	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0293	Narwie 310	GDA	54	731572	6199308	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0294	Narwie 311	GDA	54	731581	6199319	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0295	Narwie 312	GDA	54	731575	6199325	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0296	Narwie 313	GDA	54	731569	6199416	Open site	Valid	Earth Mound : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-3-0297	Narwie 314	GDA	54	731435	6199499	Open site	Valid	Earth Mound : -		
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson					Permits		
47-2-0096	tin tin 201	GDA	54	726817	6197034	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray					Permits		
47-2-0097	tin tin 202	GDA	54	726831	6197035	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray					Permits		
47-2-0098	tin tin 203	GDA	54	726812	6197042	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray					Permits		
47-2-0099	tin tin 204	GDA	54	726816	6197104	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray					Permits		
47-2-0100	tin tin 206	GDA	54	726845	6197100	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray					Permits		
47-2-0101	tin tin 208	GDA	54	726895	6197049	Closed site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0102	tin tin 209	GDA	54	726982	6197017	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0103	tin tin 210	GDA	54	727089	6196994	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0104	tin tin 211	GDA	54	727270	6197066	Open site	Valid	Earth Mound : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0105	tin tin 212	GDA	54	727135	6197177	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0106	tin tin 213	GDA	54	727097	6197183	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0107	tin tin 207	GDA	54	727065	6197155	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0112	tin tin 220	GDA	54	728721	6197412	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0113	tin tin 219	GDA	54	728727	6197311	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0114	tin tin 221	GDA	54	728743	6197317	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0115	tin tin 222	GDA	54	728766	6197310	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0117	tin tin 225	GDA	54	728704	6197201	Closed site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray							Permits
47-2-0162	tin tin 1	GDA	54	726814	6197029	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0163	tin tin 2	GDA	54	726812	6197096	Open site	Partially Destroyed	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0164	tin tin 3	GDA	54	726808	6197106	Open site	Partially Destroyed	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0165	tin tin 4	GDA	54	726810	6197109	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0166	tin tin 5	GDA	54	726831	6197134	Open site	Valid	Hearth : -		
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts							Permits
47-2-0167	tin tin 6	GDA	54	726859	6197082	Open site	Partially Destroyed	Earth Mound : -, Hearth : -		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports	
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0168	tin tin 7	GDA	54	726887	6197061	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0169	tin tin 8	GDA	54	726899	6197054	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0170	tin tin 9	GDA	54	727100	6197006	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0171	tin tin 10	GDA	54	727110	6197003	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0172	tin tin 11	GDA	54	727129	6197175	Open site	Partially Destroyed	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0173	tin tin 12	GDA	54	727102	6197174	Open site	Partially Destroyed	Artefact : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0183	tin tin 22	GDA	54	728795	6197221	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0184	tin tin 23	GDA	54	728717	6197194	Open site	Partially Destroyed	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0187	tin tin 26	GDA	54	729210	6196987	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0188	tin tin 27	GDA	54	729221	6196999	Open site	Valid	Grinding Groove : -, Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0189	tin tin 28	GDA	54	729218	6197021	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0190	tin tin 29	GDA	54	729265	6196988	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-3-0401	tin tin 30	GDA	54	731645	6199225	Open site	Valid	Earth Mound : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0179	tin tin 18	GDA	54	728726	6197407	Open site	Valid	Artefact : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0180	tin tin 19	GDA	54	728713	6197399	Open site	Partially Destroyed	Earth Mound : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0182	tin tin 21	GDA	54	728748	6197270	Open site	Partially Destroyed	Earth Mound : -		
	Contact									Permits
47-3-0402	tin tin 31	GDA	54	731629	6199211	Open site	Valid	Earth Mound : -		
	Contact									Permits
47-3-0403	tin tin 32	GDA	54	731630	6199201	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0404	tin tin 33	GDA	54	731632	6199197	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0405	tin tin 34	GDA	54	731625	6199194	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0406	tin tin 35	GDA	54	731620	6199187	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0407	tin tin 36	GDA	54	731612	6199180	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0408	tin tin 37	GDA	54	731611	6199157	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0409	tin tin 38	GDA	54	731605	6199145	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0410	tin tin 39	GDA	54	731606	6199140	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0411	tin tin 40	GDA	54	731597	6199128	Open site	Valid	Earth Mound : -		
	Contact									Permits
47-3-0412	tin tin 41	GDA	54	731591	6199111	Open site	Valid	Hearth : -		
	Contact									Permits
47-3-0413	tin tin 42	GDA	54	731570	6199098	Open site	Valid	Hearth : -		
	Contact									Permits
47-2-0217	West Balranald 98	GDA	54	717881	6198495	Open site	Valid	Artefact : 1		
	Contact									Permits

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 695000 - 740000, Northings : 6197000 - 6255000 with a Buffer of 50 meters. Additional Info : inform archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 96

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-5-0001	Lake Waldaira;	AGD	54	712960	6163793	Open site	Valid	Burial : -	Burial/s	
	Contact	Recorders	ASRSYS					Permits		
47-5-0002	Balranald;	AGD	54	714000	6167900	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact	Recorders	K Williams					Permits		
47-5-0003	Balranald;	AGD	54	713900	6167800	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
	Contact	Recorders	K Williams					Permits		
47-6-0182	Lower Boundary 31	GDA	54	730047	6161103	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		
47-6-0183	Lower Boundary 32	GDA	54	730039	6161221	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		
47-6-0184	Lower Boundary 33	GDA	54	729891	6161203	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke					Permits		
47-6-0185	Lower Boundary 34	GDA	54	729937	6161349	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		
47-6-0186	Lower Boundary 35	GDA	54	729876	6161418	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke					Permits		
47-6-0187	Lower Boundary 36	GDA	54	729868	6161428	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke					Permits		
47-6-0188	Lower Boundary 37	GDA	54	729923	6161646	Open site	Valid	Modified Tree (Carved or Scarred) :		
	Contact Searle	Recorders	Mr.Lawrence Clarke,Mr.Malcolm Ridges					Permits		
47-6-0189	Lower Boundary 38	GDA	54	729997	6161601	Open site	Valid	Artefact : -, Hearth : -		
	Contact Searle	Recorders	Mr.Lawrence Clarke					Permits		

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6197000 with a Buffer of 50 meters. Additional Info : to inform an archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 105

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-6-0190	Lower Boundary 39	GDA	54	730009	6161595	Open site	Valid	Hearth : -		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Lawrence Clarke								<u>Permits</u>
47-6-0139	Lower Boundary 21	GDA	54	730023	6161043	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles								<u>Permits</u>
47-6-0140	Lower Boundary 22	GDA	54	729986	6161065	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles								<u>Permits</u>
47-6-0141	Lower Boundary 23	GDA	54	729798	6160988	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles								<u>Permits</u>
47-6-0142	Lower Boundary 24	GDA	54	729817	6160884	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles								<u>Permits</u>
47-6-0143	Lower Boundary 25	GDA	54	729933	6160731	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles								<u>Permits</u>
47-6-0144	Lower Boundary 26	GDA	54	730019	6160693	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Mark Brettschneider,Mr.Jared Ells,Mr.Jesse Charles								<u>Permits</u>
47-6-0065	Lower Boundary 04	GDA	54	730020	6161351	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew								<u>Permits</u>
47-6-0066	Lower Boundary 05	GDA	54	730050	6161356	Open site	Valid	Modified Tree (Carved or Scarred) :		
	<u>Contact</u> Searle	<u>Recorders</u> Mr.Joe Xie,Mr.Damien Charles,Mr.Daniel Kelly,Mr.David RMB Crew								<u>Permits</u>
47-2-0174	tin tin 13	GDA	54	727111	6196895	Open site	Valid	Earth Mound : -, Hearth : -		
	<u>Contact</u>	<u>Recorders</u> Doctor.Sarah Martin,Mr.Julian Pitts								<u>Permits</u>
47-2-0152	tin tin 117	GDA	54	726952	6196955	Open site	Valid	Hearth : -		
	<u>Contact</u>	<u>Recorders</u> Mr.RENE WOODS								<u>Permits</u>

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6197000 with a Buffer of 50 meters. Additional Info : to inform an archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 105

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0136	tin tin 101	GDA	54	726791	6197023	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0137	tin tin 102	GDA	54	726637	6196971	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0138	tin tin 103	GDA	54	726603	6196961	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0139	tin tin 104	GDA	54	726580	6196962	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0140	tin tin 105	GDA	54	726576	6196970	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0141	tin tin 106	GDA	54	726578	6196961	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0142	tin tin 107	GDA	54	726559	6196909	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0147	tin tin 112	GDA	54	726796	6196964	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0148	tin tin 113	GDA	54	726816	6196968	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0149	tin tin 114	GDA	54	726906	6196912	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0150	tin tin 115	GDA	54	726902	6196920	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0151	tin tin 116	GDA	54	726921	6196965	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0153	tin tin 118	GDA	54	726971	6196964	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0154	tin tin 119	GDA	54	727078	6196903	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0155	tin tin 120	GDA	54	727086	6196900	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0156	tin tin 121	GDA	54	727058	6196894	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits
47-2-0157	tin tin 122	GDA	54	728079	6196622	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.RENE WOODS							Permits

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6197000 with a Buffer of 50 meters. Additional Info : to inform an archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 105

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0158	tin tin 123	GDA	54	728378	6196425	Open site	Valid	Hearth : -		
	Contact	Recorders		Mr.RENE WOODS				Permits		
47-2-0192	KARRA 1	GDA	54	722316	6191432	Open site	Valid	Artefact : 16		
	Contact Mr.Ray Murray	Recorders		Doctor.Tim Stone				Permits		
47-2-0204	West Balranald 84	GDA	54	723045	6190176	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0205	West Balranald 85	GDA	54	723023	6190238	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0206	West Balranald 86	GDA	54	723099	6190266	Open site	Valid	Artefact : 1, Hearth : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0207	West Balranald 87	GDA	54	723121	6190328	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0208	West Balranald 88	GDA	54	723145	6190365	Open site	Valid	Hearth : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0209	West Balranald 89	GDA	54	723292	6190267	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0210	West Balranald 90	GDA	54	723402	6190061	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0211	West Balranald 91	GDA	54	723380	6189994	Open site	Valid	Hearth : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0212	West Balranald 92	GDA	54	723196	6189915	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0213	West Balranald 93	GDA	54	723136	6189894	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0214	West Balranald 94	GDA	54	723525	6189570	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0215	West Balranald 95	GDA	54	723584	6189500	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		
47-2-0193	West Balranald 8	GDA	54	723103	6192312	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Mr.Giles Hamm				Permits		
47-2-0194	West Balranald 9	GDA	54	723181	6192220	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Mr.Giles Hamm				Permits		
47-2-0195	West Balranald 75	GDA	54	724974	6186482	Open site	Valid	Artefact : 1		
	Contact	Recorders		Niche Environment and Heritage,Ms.Clare Anderson				Permits		

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6197000 with a Buffer of 50 meters. Additional Info : to inform an archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 105

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports	
47-2-0196	West Balranald 76	GDA	54	725090	6186430	Open site	Valid	Artefact : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0197	West Balranald 77	GDA	54	724992	6186367	Open site	Valid	Artefact : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0198	West Balranald 78	GDA	54	724949	6186485	Open site	Valid	Artefact : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0199	West Balranald 79	GDA	54	724489	6186427	Open site	Valid	Artefact : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0200	West Balranald 80	GDA	54	725044	6186462	Open site	Valid	Artefact : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0201	West Balranald 81	GDA	54	724936	6186523	Open site	Valid	Artefact : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0202	West Balranald 82	GDA	54	722605	6190315	Open site	Valid	Hearth : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0203	West Balranald 83	GDA	54	722993	6190180	Open site	Valid	Artefact : 1			
	Contact	Recorders	Niche Environment and Heritage,Ms.Clare Anderson								Permits
47-2-0124	TIN TIN 307	GDA	54	727021	6196861	Open site	Valid	Hearth : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0125	TIN TIN 308	GDA	54	727052	6196822	Open site	Valid	Hearth : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0126	TIN TIN 309	GDA	54	727070	6196830	Open site	Valid	Artefact : -, Hearth : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0127	TIN TIN 310	GDA	54	727105	6196861	Open site	Valid	Hearth : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0128	TIN TIN 311	GDA	54	727105	6196867	Open site	Valid	Hearth : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0129	TIN TIN 312	GDA	54	727103	6196880	Open site	Valid	Earth Mound : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0130	TIN TIN 314	GDA	54	727484	6196236	Open site	Valid	Artefact : -, Hearth : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0131	TIN TIN 315	GDA	54	727492	6196254	Open site	Partially Destroyed	Hearth : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits
47-2-0132	TIN TIN 316	GDA	54	727479	6196309	Open site	Valid	Earth Mound : -			
	Contact	Recorders	Mr.Roland Williams,Mr.Claude Jackson								Permits

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6197000 with a Buffer of 50 meters. Additional Info : to inform an archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 105

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports	
47-2-0096	tin tin 201	GDA	54	726817	6197034	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0097	tin tin 202	GDA	54	726831	6197035	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0098	tin tin 203	GDA	54	726812	6197042	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0101	tin tin 208	GDA	54	726895	6197049	Closed site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0102	tin tin 209	GDA	54	726982	6197017	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0103	tin tin 210	GDA	54	727089	6196994	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0108	tin tin 214	GDA	54	727156	6196896	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0109	tin tin 215	GDA	54	727469	6196192	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0110	tin tin 216	GDA	54	727579	6196245	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0111	tin tin 217	GDA	54	727563	6196278	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Ms.Karen Murray								Permits
47-2-0162	tin tin 1	GDA	54	726814	6197029	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0170	tin tin 9	GDA	54	727100	6197006	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0171	tin tin 10	GDA	54	727110	6197003	Open site	Valid	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0175	tin tin 14	GDA	54	727121	6196910	Open site	Partially Destroyed	Earth Mound : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0176	tin tin 15	GDA	54	727099	6196910	Open site	Partially Destroyed	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0177	tin tin 16	GDA	54	727643	6196122	Open site	Partially Destroyed	Hearth : -			
	Contact	Recorders	Doctor.Sarah Martin,Mr.Julian Pitts								Permits
47-2-0178	tin tin 17	GDA	54	728048	6196312	Open site	Valid	Hearth : -			

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6197000 with a Buffer of 50 meters. Additional Info : to inform an archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 105

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders								Permits
47-2-0185	tin tin 24	GDA	54	729123	6196928	Open site	Valid	Earth Mound : -		
	Contact	Recorders								Permits
47-2-0186	tin tin 25	GDA	54	729110	6196936	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0187	tin tin 26	GDA	54	729210	6196987	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0188	tin tin 27	GDA	54	729221	6196999	Open site	Valid	Grinding Groove : -, Hearth : -		
	Contact	Recorders								Permits
47-2-0189	tin tin 28	GDA	54	729218	6197021	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0190	tin tin 29	GDA	54	729265	6196988	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0118	TIN TIN 301	GDA	54	726638	6196797	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0119	TIN TIN 300	GDA	54	726644	6196789	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0120	TIN TIN 303	GDA	54	726705	6196814	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0121	TIN TIN 304	GDA	54	726797	6196855	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0122	TIN TIN 305	GDA	54	726862	6196865	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0123	tin tin 306	GDA	54	726949	6196832	Open site	Valid	Hearth : -		
	Contact	Recorders								Permits
47-2-0216	West Balranald 99	GDA	54	723437	6189905	Open site	Valid	Artefact : 1		
	Contact	Recorders								Permits
47-2-0218	West Balranald 96	GDA	54	723513	6189624	Open site	Valid	Artefact : 1		
	Contact	Recorders								Permits
47-2-0219	West balranald 97	GDA	54	723614	6189714	Open site	Valid	Artefact : 1		
	Contact	Recorders								Permits

Report generated by AHIMS Web Service on 15/03/2014 for Clare Anderson for the following area at Datum :GDA, Zone : 54, Eastings : 700000 - 730000, Northings : 6140000 - 6197000 with a Buffer of 50 meters. Additional Info : to inform an archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 105

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0026	PN-110	AGD	54	685346	6215045	Open site	Valid	Artefact : -, Hearth : -, Shell : -		
	<u>Contact</u>									<u>Recorders</u> P Clarke <u>Permits</u>
47-2-0029	PS-001	AGD	54	686816	6209863	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0030	PS-002	AGD	54	686626	6209861	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0031	PS-003	AGD	54	687055	6209956	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0032	PS-004	AGD	54	686477	6209706	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0033	PS-005	AGD	54	685545	6206782	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0034	PS-006	AGD	54	685579	6211733	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0035	PS-007	AGD	54	685706	6211817	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0036	PS-008	AGD	54	685353	6212049	Open site	Valid	Artefact : -, Hearth : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0037	PS-009	AGD	54	685299	6211859	Open site	Valid	Artefact : -, Shell : -, Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0041	PS-013	AGD	54	685106	6211974	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0042	PS-014	AGD	54	685061	6211795	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0043	PS-015	AGD	54	685240	6205626	Open site	Valid	Artefact : -		
	<u>Contact</u>									<u>Recorders</u> NPWS - AHD Western Zone <u>Permits</u>
47-2-0044	PS-016	AGD	54	686454	6207072	Open site	Valid	Artefact : -		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0046	PS-018	AGD	54	685736	6207717	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0047	PS-019	AGD	54	686393	6211031	Open site	Valid	Artefact : -, Burial : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0001	AS-003	AGD	54	691679	6212167	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0002	B-001	AGD	54	691000	6201600	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0003	B-002	AGD	54	690900	6201550	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0004	B-003	AGD	54	690800	6201650	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0005	B-004	AGD	54	690550	6201700	Open site	Valid	Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0006	B-005	AGD	54	690350	6201900	Open site	Valid	Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0007	B-006	AGD	54	690250	6201450	Open site	Valid	Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0008	B-007	AGD	54	691900	6202100	Open site	Valid	Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0009	B-008	AGD	54	692200	6202500	Open site	Valid	Artefact : -, Hearth : -, Shell : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0010	B-009	AGD	54	694030	6204708	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0011	B-010	AGD	54	694200	6204300	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0012	B-011	AGD	54	694600	6204400	Open site	Valid	Hearth : -		
	Contact	Recorders	P Clarke					Permits		
47-2-0053	PS-043	AGD	54	686029	6211252	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0054	PS-044	AGD	54	685606	6211389	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0055	PS-045	AGD	54	685640	6212034	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0056	PS-046	AGD	54	685050	6212050	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0057	PS-047	AGD	54	685502	6212092	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0059	PS-049	AGD	54	685950	6211038	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0060	PS-050	AGD	54	685802	6211259	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0061	PS-051	AGD	54	685762	6211141	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0062	PS-052	AGD	54	685979	6210971	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0063	PS-053	AGD	54	685888	6210873	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0064	PS-054	AGD	54	686032	6210707	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0065	PS-055	AGD	54	686209	6210787	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits
47-2-0066	PS-056	AGD	54	686219	6210932	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone							Permits

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0067	PS-057	AGD	54	686239	6210634	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0068	PS-058	AGD	54	686276	6210728	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0069	PS-059	AGD	54	686431	6210670	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0070	PS-060	AGD	54	686446	6210525	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0071	PS-061	AGD	54	686380	6210615	Open site	Valid	Artefact : -, Shell : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0072	PS-062	AGD	54	686570	6210048	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0073	PS-063	AGD	54	686449	6209895	Open site	Valid	Artefact : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0074	PS-064	AGD	54	686342	6210072	Open site	Valid	Artefact : -, Shell : -, Hearth : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0075	PS-065	AGD	54	686408	6210128	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0076	PS-066	AGD	54	686370	6210242	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0078	PS-068	AGD	54	686372	6210326	Open site	Valid	Artefact : -, Hearth : -, Shell : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0079	PS-069	AGD	54	686632	6210817	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		
47-2-0080	PS-070	AGD	54	686666	6211158	Open site	Valid	Artefact : -, Hearth : -		
	Contact	Recorders	NPWS - AHD Western Zone					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-2-0081	PS-071	AGD	54	686864	6210973	Open site	Valid	Artefact : -, Hearth : -, Potential Archaeological Deposit (PAD) : -, Shell : -		
	Contact									Recorders NPWS - AHD Western Zone Permits
47-2-0082	PS-072	AGD	54	686975	6210503	Open site	Valid	Artefact : -, Hearth : -		
	Contact									Recorders NPWS - AHD Western Zone Permits
47-2-0013	B-012	AGD	54	694700	6204300	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0014	B-013	AGD	54	694300	6204000	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0015	B-014	AGD	54	694400	6203800	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0016	B-015	AGD	54	694500	6203700	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0017	B-016	AGD	54	695100	6202300	Open site	Valid	Artefact : -, Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0019	B-018	AGD	54	694300	6202000	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0020	B-019	AGD	54	694300	6202100	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0021	B-020	AGD	54	694400	6202300	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0022	B-021	AGD	54	694600	6201400	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0023	B-022	AGD	54	691400	6201301	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0024	B-023	AGD	54	691800	6202300	Open site	Valid	Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0089	PS-108	AGD	54	685174	6201047	Open site	Valid	Artefact : -, Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0090	PS-109	AGD	54	685336	6201058	Open site	Valid	Artefact : -, Hearth : -		
	Contact									Recorders P Clarke Permits
47-2-0045	PS-017	AGD	54	685406	6207143	Open site	Valid	Artefact : -		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	NPWS - AHD Western Zone					<u>Permits</u>		
47-2-0077	PS-067	AGD	54	686290	6210339	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	NPWS - AHD Western Zone					<u>Permits</u>		
47-2-0018	B-017	AGD	54	694000	6202000	Open site	Valid	Hearth : -		
	<u>Contact</u>	<u>Recorders</u>	P Clarke					<u>Permits</u>		

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Appendix 4 – Project and Survey Methodology

Balranald Mineral Sands Project EL 7450

Aboriginal Cultural Heritage Assessment Questionnaire

1. Your name or Organisation / Cultural Grouping you identify with and are representing (i.e. Balranald Local Aboriginal Land Council, Muthi Muthi , Bakindji, Barindji etc.)

.....

2. Are you aware of any Aboriginal sites or areas of Aboriginal cultural significance near (within 5 km) or within the Balranald Mineral Sands Project EL 7450?

.....

.....

.....

.....

3. Do you regard any part of the Balranald Mineral Sands Project EL 7450 as having aboriginal cultural landscape values?

.....

.....

.....

.....

4. Do you have any traditional, historic or contemporary cultural knowledge that may provide information about the Aboriginal cultural significance of the Balranald Mineral Sands Project EL 7450?

Yes No (Go to question 5)

If yes, is this knowledge of a confidential nature or can it be made public in an Environmental Assessment document?

Confidential Not Confidential

5. Do you have any specific advice or information about how the Balranald Mineral Sands Project EL 7450 should be assessed from an Aboriginal cultural heritage point of view?

.....

.....

.....

.....

6. Any additional information

.....

.....

.....

.....

Contact Details

Title (Prof, Dr, Mr, Mrs, Ms, etc.) _____ Surname _____

Given Names _____ Email _____

Postal Address _____

Suburb z _____ State _____ Postcode _____

Phone _____ Mobile _____

Signature _____ Date _____

FIELD OFFICERS SURVEY AGREEMENT

Iluka Resources Limited

[]

9 July 2012

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Parties

Iluka Resources Limited

Registered Aboriginal Stakeholder Organisation

Niche Environment & Heritage Pty Ltd

Nominated Field Officer

Background

- Iluka is developing the Balranald project (the Project).
- As part of the development of the Project, Iluka is required to prepare and submit a Cultural Heritage Assessment Report (the Report).
- Iluka has engaged Niche Environment & Heritage Pty Ltd to prepare the Report on its behalf (Niche).
- Iluka requires (Field Officers) to provide the Survey Services set out in this Agreement to assist Iluka and Niche in the preparation of the Report.
- Registered Aboriginal Stakeholder Organisations are required to be a Registered Iluka Vendor and responsible for preparation of invoices and payments on behalf of nominated Field Officers.

1. Services

1.1 Personnel

The Field Officer will provide the Survey Services under the direction Niche who is authorised to undertake all matters under this Agreement.

1.2 Survey Services at the Project Area

- (a) The Field Officers will, in accordance to Niche's directions, identify 'aboriginal objects', as the term is defined in Section 5 of the *National Parks and Wildlife Act* 1974 (NSW) (Aboriginal Object).
- (b) If the Field Officer identifies an Aboriginal Object, the Field Officer must immediately inform the Niche and follow any directions given by the Niche to that Aboriginal Object.
- (c) If the Field Officer has cultural knowledge of the area this information is to be conveyed to the Niche during the course of the survey.

1.3 Review of the Report

- (a) Niche will prepare and provide the Registered Stakeholder Organisations a draft copy of the Report within 30 days from the completion of the Survey Services at the Project Area.
- (b) The Registered Stakeholder Organisations are to provide this to Field Officers for review and advise the Niche in writing of any comments with respect to the Report within 30 days of receipt.

2. Term

2.1 Commencement and Duration

Field Officers will provide the Survey Services at the Project Area:

- (a) From 23rd July or such other date as determined by the Niche during a period of 12 weeks. Field officers days of survey work will be determined by a roster as determined by the Niche.

2.2 Extending the duration of Survey Services

- (a) Where the performance of the Survey Services is delayed by reason of unforeseen delays, including inclement weather, the Niche may by written notice to the Field Officer extend the duration of Survey Services for such period as is reasonably necessary for the completion of the Survey Services.
- (b) If the duration of the Survey Services is extended by Clause 2.2(a), the Field Officer must continue to provide the Survey Services for the extended duration.

2.3 Variation

Iluka may, at its sole discretion, by written notice to the Field Officer's vary the scope of the Survey Services, including extending the Agreement to other parts of the Project, including but not limited to the surveying of land over which electricity infrastructure will be built and the location of water bore holes to be drilled.

2.4 Completion

Except where this Agreement is extended by clause 2.3, the Agreement will, unless terminated earlier, terminate upon the nominated Field Officer returning the report to the Niche in accordance with clause 1.3(b).

3. Payment

3.1 Survey Services

Iluka will pay the Registered Aboriginal Stakeholder Organisation on behalf of the field officers:

- (a) The daily rate set out in Schedule 1 for each hour that the Field Officer provides the Survey Services at the Project Area;
- (b) Travel, accommodation and meal allowances will be paid directly by Niche.

3.2 Timesheets & Payments

Prior to receiving any payment the nominated Field Officer must:

- (a) On the timesheets provided by Niche, record the times that they have spent performing the Survey Services and any travel, accommodation and meal allowances they wish to claim. The time sheets must be submitted to the Niche for approval at the end of each day; and

Prior to receiving any payment the Registered Aboriginal Stakeholder Organisation must:

- (b) Submit a tax invoice for the Field Officer services, with signed timesheet authorised by Niche by email to Iluka's nominated person for authorisation.
- (c) Iluka request that invoices be submitted on Mondays, for works completed the previous week. Where an invoice is not submitted on a Monday the submission date will be adjusted to the following Monday. Invoices will be paid the first Friday after submission date.

4. General Matters

4.1 Site Induction

Prior to commencing the performance of the Survey Services and accessing the Project Area, the Field Officer must attend a site induction provided by the Niche.

4.2 Operational Health and Safety

The Field Officer must comply with all operational health and safety policies and procedures relevant to the Project Area, including those directed by the Niche.

4.3 Protective Clothing, Water and Food

While in the Project Area Field Officers must provide their own protective clothing, including:

- (i) enclosed boots;
- (ii) PPE safety vest;
- (iii) long sleeve shirts;
- (iv) sunglasses and
- (v) hats and sunscreen;

4.4 Relationship

The parties' relationship is one of principal and independent contractor, not employer and employee, principal and agent or partnership. No contractual or employment relationship will arise between the Field Officer and Niche or Iluka as a result of this Agreement.

4.5 Obligation to Follow Directions

- (a) Niche is authorised by Iluka to give directions and orders on its behalf in relation to this Agreement. The Field Officer must, at all times, comply with any direction or order given by the Niche.
- (b) Niche may at any time direct the Field Officer to leave the Project Area where the Field Assistant has failed to comply with clause 4.5(a) or is, in the Niche reasonable opinion, incompetent, negligent, under the influence of drugs or alcohol or guilty of misconduct.
- (c) Iluka may at any time terminate this Agreement where the Niche has issued a direction under clause 4.5(b).

4.6 Intellectual Property Rights and Confidentiality

- (a) The Field Officer's agrees to assign to Iluka all intellectual property rights, including all copyright which may arise in respect of, or as a result of, the performance of its obligations under this Agreement.
- (b) Each party shall keep confidential all information provided to it by the other party, except where the information is:
 - 1) required for the Report;
 - 2) required to be disclosed by law; or
 - 3) disclosed to a party's professional advisor for the purposes of the Project.

SCHEDULE 1

FEES PAYABLE

Iluka Resources will pay the Field Officer's Registered Aboriginal Stakeholder Organisation the rate of \$600 per full day or \$300 for each half day that the Field Officer is engaged for the performance of the Survey Services at the project Areas, as shown in the timesheets submitted and approved by the Niche.

All amounts in the Schedule are exclusive of GST.

EXECUTED as an Agreement

Iluka Resources Limited ACN 008 675 018

Full Name of Authorised Officer

Signature of Authorised Officer

Full Name of Witness

Signature of Witness

/ /2012

(Registered Aboriginal Stakeholder Organisation) ABN -----

Full Name of Authorised Officer

Signature of Authorised Officer

Full Name of Witness

Signature of Witness

/ /2012

Nominated Field Officer

Full Name of Authorised Officer

Signature of Authorised Officer

Full Name of Witness

Signature of Witness

/ /2012

Niche Environment, Heritage Pty Ltd ACN -----

Full Name of Authorised Officer

Signature of Authorised Officer

Full Name of Witness

Signature of Witness

/ /2012

Iluka Resources Limited

Balranald Mineral Sands Project EL 7450

Registered Aboriginal Stakeholder Consultation Meeting No 1 Presentation

2.00pm 14th June 2012
Balranald

Overview of Presentation

- Introduction & Welcome : Andrew Minns & Anna Bryant Iluka Resources Limited
- Project Scope: Andrew Minns Iluka Resources Limited.
- Assessment Process . Giles Hamm, Niche Environment & Heritage Pty Ltd.
- Aboriginal Stakeholder Consultation Process: Giles Hamm.
- Landscape features of the study area: Giles Hamm
- Cultural background and archaeological aspects of the study area: Giles Hamm.
- Archaeological survey design and Registered Aboriginal stakeholder involvement.
- Expression of interest and engagement of survey team (written feedback to notification, merit assessment). Proof of insurances and assessment skills.

Project Scope

Project Approval requirements

NSW

- Development Consent being sought under NSW Environmental Planning and Assessment Act 1979.
- Project has been declared State Significant Development.
- Environmental Impact Statement currently being prepared.
- Project is exempt from Aboriginal Heritage Impact Permits.

Federal

- May require approval under Environment Protection, Biodiversity and Conservation Act 1999.
- Referral to Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) to determine approval requirements.

Assessment Process

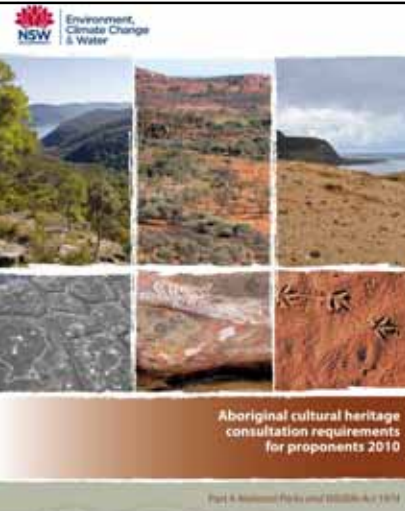


- NSW Office Environment & Heritage (OEH) issued Aboriginal consultation guidelines in 2010 as a process to advise developers, consultants and Aboriginal communities about how Aboriginal sites and objects should be dealt with under Part 6 of the *NPW Act 1974* or under State Significant Development under Section 89C(2) of the *E & A Act 1979* through the NSW Department of Planning and Infrastructure (DoPI).
- Iluka Resources Limited will be using these OEH consultation guidelines and other OEH Codes of Practices as a basis for the Aboriginal cultural heritage assessment of its Balranald Mineral Sands Project.

Balranald Project Induction, Date of Issue: 16/09/2011



Balranald Project Induction, Date of Issue: 16/09/2011



Balranald Project Induction, Date of Issue: 16/09/2011

Registered Aboriginal Stakeholder Consultation Process



Proponent is Iluka Resources Limited (can also be a Company acting for a developer)

- Initiates the proposal;
- Seeks the views of the registered Aboriginal stakeholders about methodologies;
- In consultation with registered Aboriginal stakeholders, gathers cultural and archaeological information;
- Uses this information to assess the scientific and cultural significance of EL 7450;
- Undertakes assessment of potential impact;
- Gathers the views of the registered Aboriginal stakeholders about the project, potential impacts and the mitigation measures; and
- Provides the results to DoPI and OEH in a report to accompany applications for development approval.

Balranald Project Induction, Date of Issue: 16/09/2011

Registered Aboriginal Stakeholder Role



- Members of the Aboriginal community are the primary determinants of the significance of their heritage;
- They may participate in the process through comment on the assessment methodology, assisting with field assessments, contributing cultural knowledge and commenting on cultural significance of potential impacts and/or mitigation measures; and
- This consultation opportunity is provided through the assessment process conducted by the proponent (i.e. Iluka Resources Limited).

Balmoral Project Induction, Date of Issue: 16/09/2011

OEH and DoPI Roles



- Are the decision-makers;
- Review information from the proponents, including information about the views and knowledge provided by registered Aboriginal stakeholders; and
- Make decisions whether to grant or not grant development approval (with or without conditions).

Balmoral Project Induction, Date of Issue: 16/09/2011

Service Providers (includes both Aboriginal & non-Aboriginal consultants)



- Various parties with specialist skills or knowledge who can be engaged by proponents to help them fulfil their responsibilities.
- Services provided can include Aboriginal assessment and advisory services and archaeological services (i.e. Niche Environment & Heritage Pty Ltd).
- My background. Professional Archaeologist over 20 years experience.

Balmoral Project Induction, Date of Issue: 16/09/2011

Aboriginal stakeholder registration and written responses



- Iluka Resources Limited has developed a Aboriginal stakeholder register and consultation log process.
- As the DoPI /OEH process requires written proof of consultation at all stages of the assessment; Iluka Resources Limited will always request registered Aboriginal stakeholders to respond in writing to all notifications concerning the project's assessment.

Balmoral Project Induction, Date of Issue: 16/09/2011

Registered Stakeholder Consultation Process



- Requests for Aboriginal stakeholder consultation meetings will be officially notified in writing and a period of time up to 28 days will be given for written requests or responses to review for example assessment reports or survey research designs.
- Failure to respond to official notifications within a reasonable time frame (either through letter, email or fax) will mean 'that a no response' was recorded.
- Consultation meetings concerning the project will be held with all Registered Aboriginal Stakeholder groups present.

Balranald Project Induction, Date of Issue: 16/09/2011

Landscape and Environmental Features of the study area



- The study area is located close to the centre of the Murray Basin in south-western New South Wales, which is a large structurally controlled depression which has filled with Tertiary marine and non-marine sediments. This sequence has subsequently been overlain by Quaternary aged aeolian, fluvial and lacustrine sediments.
- The study area is located within the Riverine Plain Landsystem.
- The study area lies roughly between the town of Balranald in the south and the village of Hatfield in the north and is made up of the *Nepean* and *West Balranald* mineral deposits.

Balranald Project Induction, Date of Issue: 16/09/2011

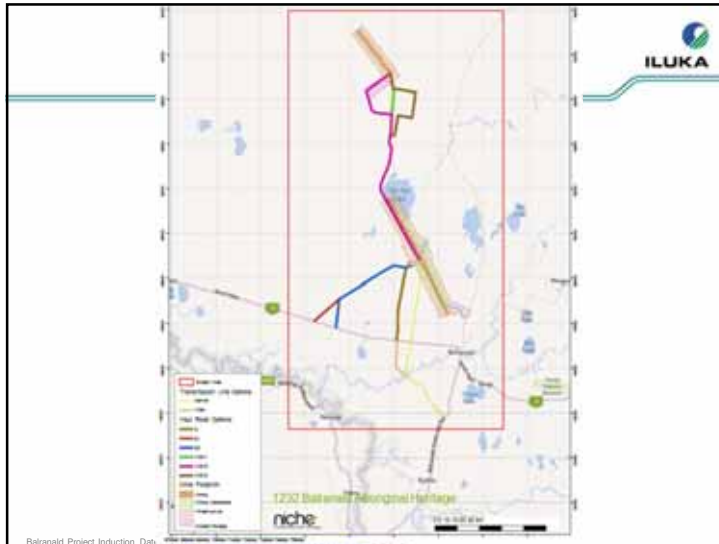
Fig. 4.1 The Arnie Plain



Balranald Project Induction, Date of Issue: 16/09/2011



Balranald Project Induction, Date of Issue: 16/09/2011



Landscape and Environmental Features of the study area



- Both deposits are located on Exploration Licence EL 7450 which was granted to Iluka Resources Limited in February 2010. The tenement was formed from the amalgamation of four previous licences (EL6478, EL6816, EL6669 and EL6970).
- The Nepean deposit is located approximately 67 kilometres north-northwest of Balranald, and is contained within two Western Lands Leases, 'Wintong' and 'Wampo'. A Private Conservation Reserve exists on Wampo Station in the northern half of the Nepean deposit. This private reserve was established in 1999 and covers an area of approximately 17,890 hectares (43,961 acres).

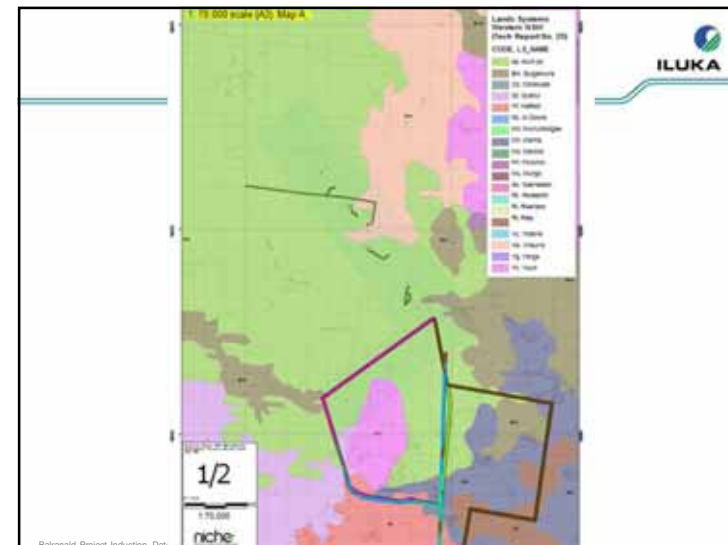
Balranald Project Induction, Date of Issue: 16/09/2011

Landscape and Environmental Features of the study area



- The Nepean deposit is located within the Arumpo Land System (*Soil Conservation Service of NSW 1991*). The soils within this land system comprise fine sandy loams and light sandy – clay loam. These broad soil types comprise varying amounts of coarse cracking grey/brown clays, calcareous sands and yellow / red textured contrast soils.
- The Nepean Deposit is located on the edge of a topographic ridge known as the Iona Ridge.
- The landscape is dominated by parallel east – west trending sand dunes dominated by mallee vegetation with an understorey of spinifex. The associated interdune swales and plains are dominated by Chenopod Mallee and Belah Rosewood (Ogyris and Wildlife Profiles, 2007).

Balranald Project Induction, Date of Issue: 16/09/2011



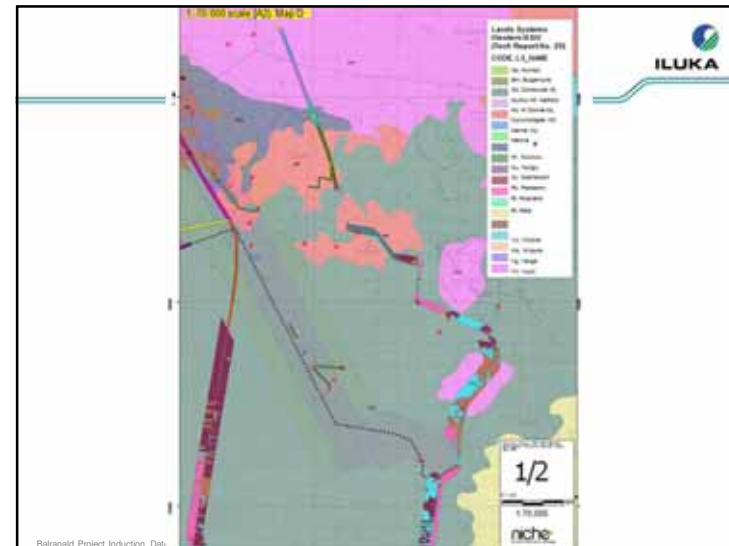


Landscape and Environmental Features of the study area



- The West Balranald Deposit is situated within the Balranald Land System (*Soil Conservation Service of NSW 1991*). The sandy surfaces sediments have been extensively reworked into dunes and sand plains. The surrounding rivers and streams in the Riverina have cut through the sands and constructed numerous overflow lakes and abandoned Pleistocene channels and basins.
- Saline ground waters have formed salt basins in many places where the sand plain or dune topography intersects the water table. Soils and vegetation differ accordingly to the landform.
- On the dune fields red, brown and yellow calcareous sands occur with more clayey materials in the swales. On sand plains the soil tends to be heavier with brown gradational or texture contrast profiles, and mallee is found only on sandy rises (Iluka Resources Limited 2010).

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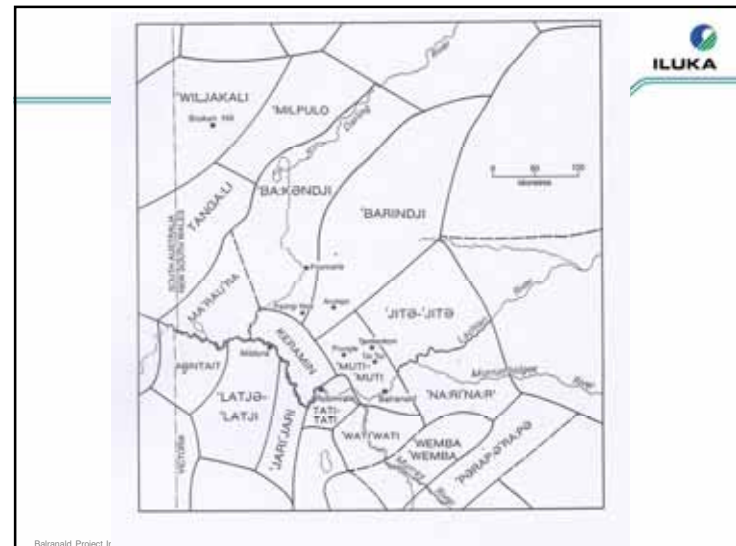


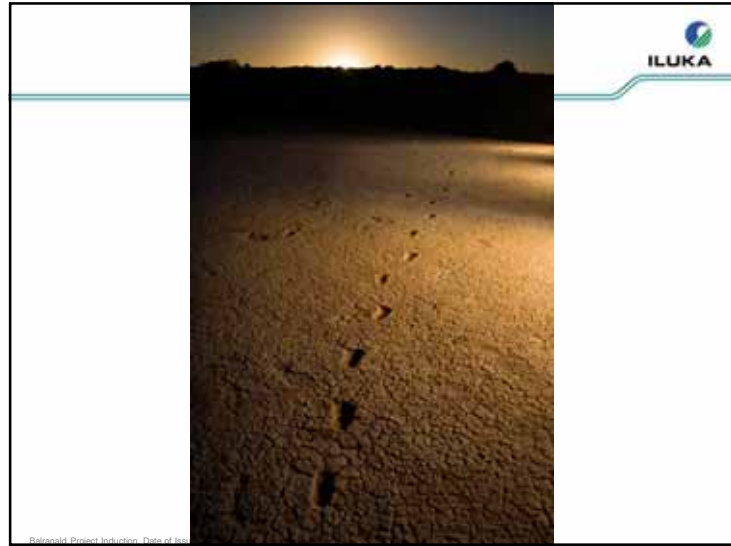


Cultural background and archaeological aspects of the study area



- The project area is defined culturally as Muthi Muthi with some overlap with Yita Yita country (see map).
- Study area covers approximately 121 sqkm and is approximately 8 kms north-west of Balranald.
- General landscapes surrounding the study area are rich in evidence of Aboriginal occupation going back to 45,000 years BP (i.e. see Willandra Lakes World Heritage area).
- Important cultural landscape features would be the Tin Tin Lake, Pitarpunga Lake and Box Creek.





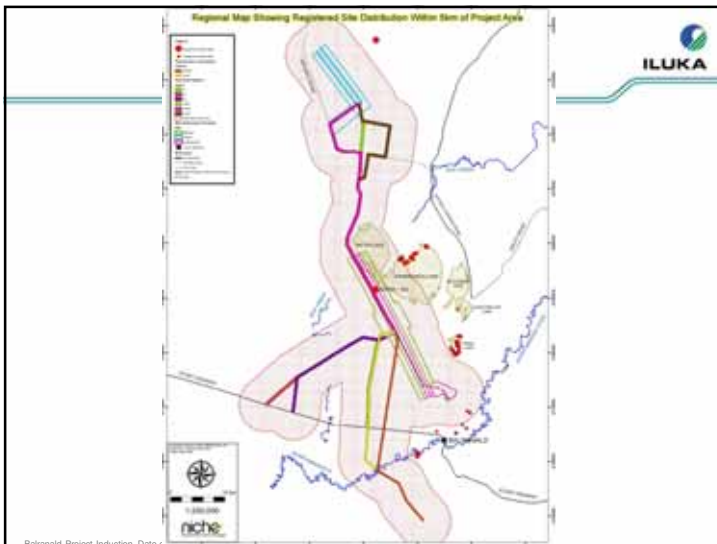


What type of Aboriginal sites and objects are likely in the study area?

Based on previous work on the Bemax project and other assessments undertaken by Sarah Martin and Badjar Bates, Dan Witter Aboriginal sites have already been identified in parts of the study area.

Likely to find the following site types:

- Artefact scatters.
- Isolated finds.
- Hearths
- Hearth Scatters
- Shell Middens
- Potential Archaeological Deposits
- Burials.
- Scarred Trees.
- Earth Mounds.









Iluka Site Type Predictions

Land Unit	Site Type	Site Frequency	Raw Material Types
Arumpo	Isolated finds	Isolated find may occur infrequently	Silcrete, quartz.
Condoule	Isolated finds	Isolated find may occur infrequently	Silcrete, quartz.
Gulthul	Isolated finds	Isolated find may occur infrequently	Silcrete, quartz.
Hatfield	Isolated finds, artefact scatters, hearths, PADS, culturally modified trees.	Artefact scatters, PADS and hearths may occur frequently on scalds and clay pans. Culturally modified trees may occur in black box communities.	Silcrete, quartz, quartzite, chert.
Ki Downs	Isolated finds	Isolated find may occur infrequently	Silcrete, quartz.
Marma	Isolated finds, artefact scatters, hearths, PADS, culturally modified trees, middens, burials	Artefact scatters, PADS and hearths may occur frequently on scalds and clay pans. Culturally modified trees may occur in black box communities. Burials may occur in sand bodies.	Silcrete, quartz, quartzite.



Bakaramid Project Induction. Date of Issue: 16/09/2011

Rata	Isolated finds, artefact scatters, hearths, PADS, culturally modified trees, burials.	Artefact scatters, PADS and hearths may occur frequently on scalds and clay pans. Isolated finds may occur infrequently. Culturally modified trees may occur in black box communities.	Silcrete, quartz.
Riverland	Isolated finds, artefact scatters, hearths, PADS, culturally modified trees, middens, burials, earth mounds.	Artefact scatters, PADS and hearths may occur frequently on scalds and clay pans. Isolated finds may occur infrequently. Culturally modified trees may occur in black box communities. Middens may occur on levees and lunettes. Burials may occur in sand bodies.	Silcrete, quartz.
Wilkurra	Isolated finds.	Isolated find may occur infrequently	Silcrete, quartz.
Youhi	Isolated finds, artefact scatters, PADS, culturally modified trees, middens, burials, earth mounds.	Artefact scatters, PADS and hearths may occur frequently on scalds and clay pans. Isolated finds may occur infrequently. Culturally modified trees may occur in black box communities. Middens may occur on levees and lunettes. Burials may occur in sand bodies.	Silcrete, quartz, quartzite.



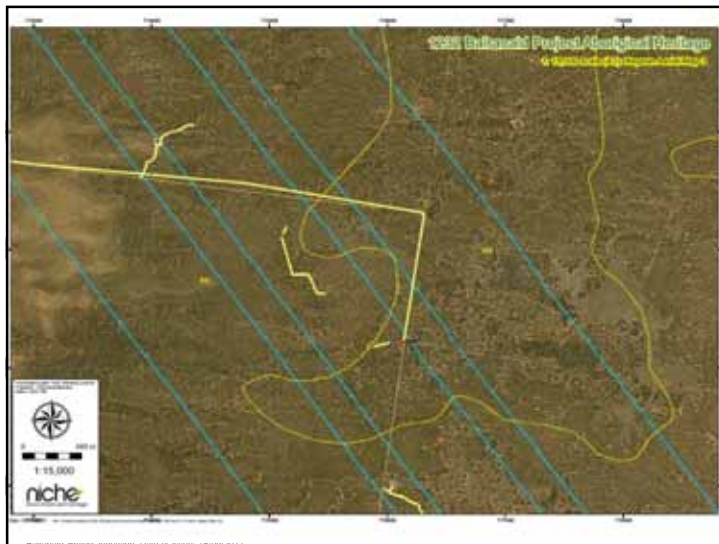
Bakaramid Project Induction. Date of Issue: 16/09/2011

Balranald Mineral Sands Project EL 7450 archaeological survey will be designed based on:

- Previous scientific research;
- Input from registered Aboriginal stakeholder groups & individuals, including identifying culturally sensitive landscapes;
- Land unit distribution and level of surface ground disturbance;
- Visibility of exposed land surfaces;
- Age of soil types and subsoil potential; and
- Distribution of natural resources (i.e. Box swamps, Lake margins, Box Creek drainage, pale-ochannels from lakes, claypan areas and Murrumbidgee floodplain units).

- The archaeological survey will be carried out using a selective sampling approach with survey areas chosen based on the potential of finding Aboriginal sites or objects.
- Areas of high potential such as those located around existing claypan and drainage features (i.e. Lake margins and old paleo-channels) will be targeted for survey assessment.
- Areas of low potential such as the Mallee woodlands (especially ploughed) will not be targeted for survey assessment.

Balranald Project Induction, Date of Issue: 10/09/2011



How can registered Aboriginal stakeholders be a part of the field assessment?



- Providing evidence of assessment experience, cultural knowledge and professional qualifications;
- Providing assistance with the design of the archaeological survey;and
- Providing cultural information about the significance of the study area (i.e. through our written questionnaire).

Aboriginal Cultural Heritage Assessment Questionnaire



1. Your name or Organisation / Cultural Grouping you identify with (i.e. Muthi Muthi, Bakindji, Barindji etc.)
2. Are you aware of any sites or areas of cultural significance near (within 10km) or within the Balranald Mineral Sands Project EL 7450 ?
3. Do you regard any part of the Balranald Mineral Sands Project EL 7450 area as having aboriginal cultural landscape values?
4. Do you have any traditional, historic or contemporary cultural knowledge that may provide information about the cultural significance of a Balranald Mineral Sands Project EL 7450 area? If yes, is this knowledge of a confidential nature or can it be made public in an Environmental Assessment document?
5. Do you have any specific advice or information about how the Balranald Mineral Sands Project EL 7450 area should be assessed from a cultural heritage point of view?
6. Any additional information

Balranald Project Induction, Date of Issue: 10/03/2011

Engagement of Survey Team



- Engagement of the field officers will be managed using a field services agreement.
- Five people will be selected by Iluka Resources Ltd to assist in the field assessment.
- Engagement will be based on having the best field officers for the assessment. Individuals will be selected rather than groups.
- Need fit people who can work a solid 8 hour day.
- People will be selected on merit.
- This could mean that three different groups are selected to do the survey.
- Niche Environment & Heritage will supervise the survey team and individuals will be accountable to me as the Supervisor.

Survey Assessment



- Looking at a period of 25 days for the field assessment(i.e. July - August 2012).
- Fees will be \$600/day.
- Food, water and transport will be provided to and from the worksite.
- Work will be paid on completion of daily or half daily tasks.
- Sign In and Sign Out sheets will be maintained.
- Rain delays will be paid if client cannot give the field workers 24 hours prior notice.
- Field Officers will have to provide: own ABN, Personal Protective Equipment (i.e. work boots, high visibility vests)
- Field Officers will need to have Workers Compensation Insurance and Public Liability cover.

Expression of Interest



- Following this meeting, Iluka Resources Ltd will write to registered Aboriginal stakeholders inviting them to register an interest in being a part of the field assessment work.
- Iluka Resources Ltd will need to see the following within 28 days of this written invitation:
 - Up to date Workers Compensation and Public Liability insurances and ABN;
 - Evidence of cultural knowledge, assessment skills and experience;and
 - Availability to undertake work in July-August 2012.

Thank You

Bakasatli Project Induction, Date of Issue: 10/03/2011




Balranald Mineral Sands Project

Iluka Resources

Aboriginal Heritage Survey Meeting


Balranald
14 June 2012


Presentation outline

- Introduction
- Mining
- Mineral processing
- Infrastructure
- Transportation
- Project Schedule

2



Iluka's Australian operations



- Murray Basin, Victoria/NSW**
 - Major rutile and zircon production province
 - Separation plant - Hamilton
 - Economic life to 2023+
- Eucla Basin, South Australia**
 - Globally significant zircon production source
 - Mine life 10 years+
- Western Australia**
 - Processing hub for Jacinth-Ambrosia concentrate
 - 4 synthetic rutile kilns (2 idled)
 - Limited internal feed source to kilns
- Virginia, United States**
 - High quality zircon and ilmenite production serving domestic US market

3



Murray Basin projects



LEGEND

- Port
- Mine
- Mineral separation plant
- Proposed mine site
- Heavy mineral deposit
- Iluka tenements

4

Project location



- Located within exploration license EL7450
- West Balranald deposit located NNW of Balranald township
- Nepean deposit located a further 30 km north
- Access via Ivanhoe Road & Tin Tin Bidura (Burke & Wills) Road



5

Project history



- 1998 - discovery of West Balranald
- 2002 - discovery of Nepean
- 18 Feb 2010 - EL7450 granted
- Aug 2010 - scoping study completed
- Jan 2011 - pre-feasibility study commenced
- 2011 - community & Government consultation
- 2011 - hydro geological and sonic drilling programs
- 2011 - baseline environmental studies commenced
- Feb 2012 - appointment of EMGA Mitchell McLennan
- April 2012 – Application for DGR's



6

Project Concept



- 7 to 10 year mine life (depending on final mining rate)
- relocate existing plant from WRP to West Balranald
- processing at mine site
- up to 500,000 tpa heavy mineral concentrate (HMC)
- heavy mineral concentrate (HMC) transport by road / rail to Hamilton
- up to 600,000 tpa ilmenite
- ilmenite transport to Capel WA, or direct to customer
- approximately 5,000 hectare mine & infrastructure footprint
- power from substation south of Balranald
- accommodation village in Balranald

7

Mining

key challenges



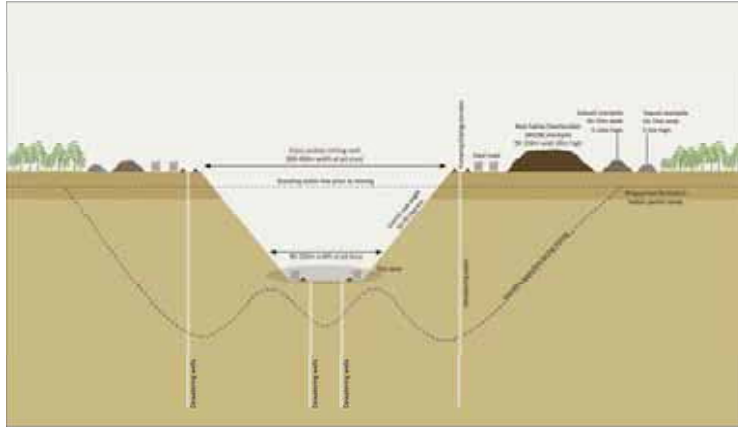
- Mining methods considered:
- Dredging (rejected)
 - Bucket wheel excavator & conveyors (rejected)
 - Dragline (rejected)
 - Hydraulic Mining (rejected)
 - Truck & shovel (preferred)



8

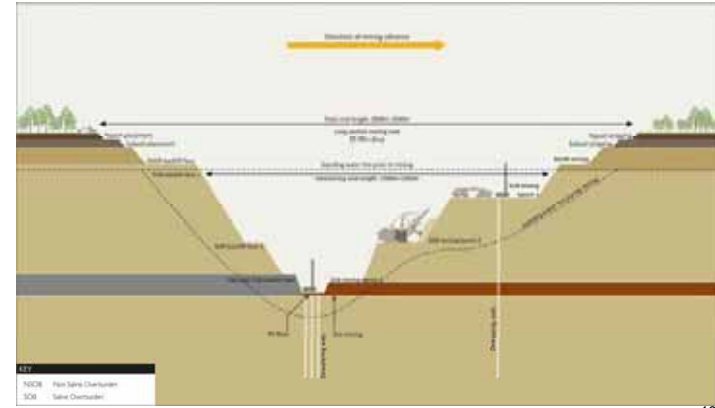
Mining

across strike X-section



Mining

along strike x-section



10

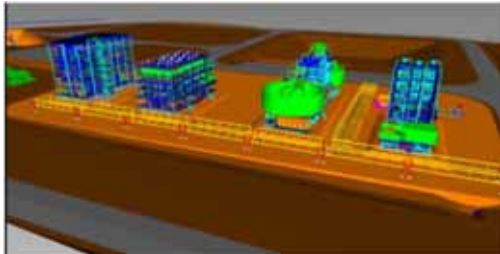
Mineral Processing



Existing plants likely to be relocated from WRP Mine:

- MUP (Mining Unit)
- Feed preparation & Pre concentrator plant
- Wet concentrator plant
- WHIMS circuit
- (ilmenite dry separation plant)

Options for simplification and mobility are under investigation.



11

Power Supply & Communications

network power supply



- 22/66kV Step up transformer at the Essential Energy substation south of Balranald
- ~40km of 66kV overhead line to the mine
- 66/22kV Step down transformer at the mine



12

Road Access

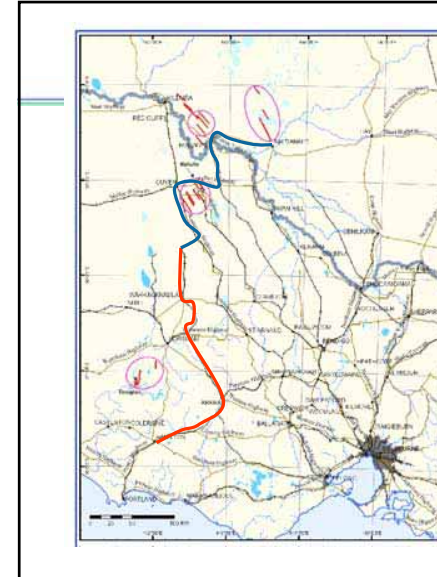


HMC / ilmenite haulage route to Sturt Hwy

- Preferred haul route is from the process plant in the centre of the mine strike heading South West to the Sturt Highway
- Several options of haul routes between West Balranald and Nepean deposits being assessed
- Investigation into local sources of road construction material

Light Vehicle Access

- A separate LV access road connecting to the Balranald-Ivanhoe road is being assessed



HMC (Base Case) road/rail (std gauge)



Via Hopetoun

14



HMC (Preferred Case) road/rail (std gauge)



Via Robinvale

15




Ilmenite (Base Case) road/rail (broad gauge)




Via Manangatang

16

Ilmenite (Preferred Case)
road/rail (std gauge)




Via Robinvale



17

Transportation
Road transport statistics




HMC

- 32 B-Double return trips per day
- B-Doubles on road:
 - 16 (Base Case – Hopetoun)
 - 7 (Preferred Case – Robinvale)


Ilmenite

- 40 B-Double return trips per day
- B-Doubles on road:
 - 12 (Base Case – Manangatang)
 - 8 (Preferred Case – Robinvale)



18

Project schedule & next steps



Activity	Date
Pre-feasibility study commencement	January 2011
Complete evaluation of mining options	January 2012
Submit DA and Preliminary Environmental Assessment	April 2012
Planning focus meeting	May 2012
Complete pre-feasibility study	December 2012
Submit EIS	January 2013
Iluka Board Decision	March 2013
Development consent	December 2013
Commence site construction	March 2014
Receipt of all approvals to operate	July 2014
Commence operations	Mid 2015

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Appendix 5 – Transect Data

Appendix 6 – Aboriginal Site Descriptions

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
B 1 / B 10	GWRB Area 2 - 4	Artefacts	40		0	Clare Anderson	10/10/2014	B1 / B10 is a dispersed low density artefact scatter of 40 stone artefacts. 32 artefacts were recorded in the Sample Area B 1, recorded on the 10 October 2014 while 8 artefacts were recorded in the Sample Area B 10 on 17 October 2014. Artefacts were observed in a series of scalds, wash exposures and gullies along the crest and slopes of the southern lunette or calcareous rise of a depression or relict lake which is approximately 1.9km in length and 1.2km in width. . Greenish-grey clay with the appearance of pelletal clays was observed in exposures on the western shoreline of the lake from the car but this was not inspected as it was beyond the project footprint. The exposures have a similar appearance to Zanci unit clays in the Willandra Lakes area and may indicate a much older underlying strata than that visible at B 1 / B10. It is highly likely that further artefacts will be present in low densities residual soils and subsurface deposits, both within the margins of the recorded B1 / B 10 and in the surrounding landform. It is possible that focal points of higher densities of artefacts may be present in the surrounding landform. It is possible that if artefacts are present in subsurface deposits that they may be quite old in age.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 11	GWRB Area 4 - 7	Artefacts	14		0	Clare Anderson	18/10/2014	B 11 consists of 14 stone artefacts visible in scalds and rills from downward wash. This site is unusual in that it is located on the slopes of an east-west running dune and the artefacts tend to be associated with rills which expose fine grey silty, almost ashy, sediment which contrasts with the typical red earths visible. A swale with a variety of vegetation species is present just below the site. It is possible that further subsurface artefacts or non visible surface artefacts are present both in the site boundaries and beyond the boundaries and these are obscured by the top 5c m of windblown and vegetated sediment. There appear to be slight depressions between 2 and 4m wide in the swale.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 12	GWRB Area 4 - 7	Artefacts	6		0	Clare Anderson	18/10/2014	B 12 site is an artefact scatter, low density, of six silcrete flakes in an eroding dune slope overlooking a dune swale. This site is unusual in that it is located on the slopes of an east-west running dune and the artefacts tend to be associated with rills which expose fine grey silty, almost ashy, sediment which contrasts with the typical red earths visible. A variety of vegetation species is present in the swale. It is possible that further subsurface artefacts or non visible surface artefacts are present both in the site boundaries and beyond the boundaries and these are obscured by the top 5c m of windblown and vegetated sediment, corroborated by the presence of Aboriginal site B 11 75m to the east. There appear to be slight depressions between 2 and 4m wide in the swale.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 14	GWRB Area 2 - 6	Artefacts	3		0	Nicolas Grguric	17/10/2014	B 14 is a small low density surface artefact scatter associated with a soak in mallee dunefields	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 15	Car stop	Culturally Modified Tree	0	Culturally modified tree	2	Clare Anderson	15/10/2014	B 15 comprises a natural landscape feature (billabong) with at least two culturally modified trees. The billabong was outside the area of inspection so a GPS co-ordinate and photo was taken but was not properly inspected. It is possible that further culturally modified trees and artefacts may be present in or near this location.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 16	GWRB Area 2 - 9	Isolated Artefact	1		0	Clare Anderson	17/10/2014	B 16 is a single isolated utilised silcrete flake located in a small exposure near a clump of belah trees, approximately 350 m east of Aboriginal site B1 / B10 and the margins of a lake/depression. Occasional isolated artefacts may be present in residual soils in the surrounding landscape. It is not evident from the exposure whether there is a layer of windblown sediment which is obscuring a buried deposit.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 17/B 19/B 26/B 27/B 28	IB 5 - S - AA	Artefacts	110		0	Amanda Atkinson	8/12/2014	A typical, large moderate density artefact scatter located in a series of scalds across 230 m x 150 m. The site was recorded in five sample/exposure areas - B 17 (715240. 6216778) B 19 (715368.6216815), B 26 (7153264. 6216713), B 27 (715364. 6216688), B 28 (715364. 6216647). The site contains a range of artefact types including retouched flakes. The site contains residual soils at the centre of the site (15 m x 15 m). The continual presence of artefacts in scalds indicates that further surface and subsurface artefacts are present in the non deflated soils immediately adjacent and beyond the surveyed area and represent a continuous artefact scatter in these landforms.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 18	IB 5 - S - AA	Artefacts	14		0	Sharon Lane	8/12/2014	Artefacts lie on the western end of a clay pan with other discrete locations of artefacts to the north, east and edges of the pan. The area immediately to the west of the pan is disturbed by the excavation of a small dam	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 2	GWRB Area 2 - 4	Isolated Artefact	1		0	Nicolas Grguric	10/10/2014	B2 is an isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 20	BH 2	Isolated Artefact	1		0	Bianca Petruzelli	9/12/2014	This site is a single isolated stone artefact	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 21	BH 2	Artefacts	4		0	Bianca Petruzelli	9/12/2014	B 21 is a discrete artefact scatter located 5 m south of the road. The site has been disturbed from road construction and grading. Animal burrowing is present.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 22	BH 2	Isolated Artefact	1		0	Bianca Petruzelli	9/12/2014	B 22 is an isolated stone artefact located approximately 20 m south of Arumpo Road	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 23	IB 5 - S - AA	Isolated Artefact	1		0	Sharon Lane	9/12/2014	B 23 is a single isolated stone artefact located at the western edge of a pan	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 24	BH 1	Artefacts	7		0	Balazs Hansel	8/12/2014	Small scatter located on the western slope of a N-S dune.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 25	BH 2	Artefacts	29		0	Balazs Hansel	9/12/2014	The site is a low density artefact scatter which contains two discrete artefact locations/sample areas approximately 20 m apart. Sample area B BH2 S9 comprises a scatter of 11 art approx 100m W of S4 located on a wash off area running down NW twds the depression/lake basin. Artefacts were identified on deflated surface in between the remnants of residual soil. The bottom of the slope is heavily eroded. Sample location B BH2 S8, comprising 3 artefacts was located further upslope on the western slope of the dune.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 29	Break stop	Isolated Artefact	1		0	Nicolas Grguric	9/12/2014	This site is a single isolated stone artefact	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 3	GWRB Area 2 - 4	Isolated Artefact	1		0	Clare Anderson	10/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 30	IB 7 - CD B CD A	Hearth, Isolated Artefact	1	Hearth	1	Nicolas Grguric/Clair Davey	10/12/2014	B 30 comprises an isolated artefact located on a bare patch of soil and a disturbed hearth feature approximately 10 m to the west of the isolated artefact. The hearth comprised burnt clay, sediment and termite mound heat retainers with a visible concentration of 1 m x 1 m. No charcoal, bone or artefacts were present in association with the hearth. The hearth is not exceptionally disturbed or deflated and offers fair potential for dating.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 31	IB 7 - CD B CD A	Artefacts	2		0	Nicolas Grugric/Clair	10/12/2014	B 31 comprises two silcrete flakes located 30 m apart in exposures associated with a track and the dripline of a stand of mallee.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
B 32	IB 7 - CD B CD A	Artefacts	2		0	Nicolas Grguric/Clair Davey	10/12/2014	B 32 comprises two stone artefacts located approximately 35 m apart in a series of exposures associated with a slope leading to a drainage channel. The zone is transitional between mallee dunefields and alluvial plains.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 33	IB 7 - CD B CD A	Artefacts			0	Amanda Atkinson	10/12/2014	The site consists of multiple, partially exposed silcrete cores in situ. B33 has high potential to contain an intact knapping floor, as evidenced by a partially buried large silcrete cores. The site is situated near a track on the lower portion of a dune slope. The site is in close proximity to a nearby hearth, which contains material suitable for dating. Glass bottles and tins were also observed in the nearby area. TThe site is located near a track on the lower part of a dune slope near a transition to the flats, in proximity to a site with an intact hearth. Glass bottles and tins were observed.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 34	IB 7 - CD B CD A	Artefacts	3		0	Sharon Lane	10/12/2014		Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 35	IB 7 - CD	Isolated Artefact	1		0	Sharon Lane	10/12/2014	This site is a single isolated stone artefact	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 36	IB 7 - CD	Isolated Artefact	1		0	Sharon Lane	10/12/2014	B 36 is an isolated silcrete complete flake located in an exposure 25 m west of a track on the Bidura property.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 37	IB 7 - CD	Isolated Artefact	1		0	Sharon Lane	10/12/2014	B 37 is an isolated stone artefact located on vegetated chenopod flats 635m east of a track.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 38	IB 7 - CD	Artefacts	6		0	Nicolas Grugric / Sharon Lake	10/12/2014	B 38 is a low density artefact scattered located in a series of exposures 380 m west of a track on the Bidura property	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 38	IB 7 - CD - S					Nicolas Grugric / Sharon Lake	10/12/2014		Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 39	IB 7 - CD - S	Artefacts	32		0	Sharon Lane	11/12/2014	B 39 is a low density artefact scatter exposed in saltbush plains in wash exposures, in proximity to a small depression in the local relief. The area at the centre is not eroded but no artefacts were recorded. It was considered that there was high probability that concealed artefact remain in uneroded areas.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 4	GWRB Area 2 - 4	Isolated Artefact	1		0	Georgia Roberts	10/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 40	IB 7 - CD	Isolated Artefact	1		0	Clair Davey	11/12/2014	B 40 is an isolated silcrete angular fragment located in a depression adjacent a series of scalds west of a track on the Bidura property.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 41	Walking back to car	Isolated Artefact	1		0	Clair Davey	11/12/2014	B 41 is an isolated silcrete medial flake located in a scald adjacent an access track on the Bidura property.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 42	IB 7 - CD	Isolated Artefact	1		0	Clair Davey	11/12/2014	B 42 is an isolated silcrete cortical flake in a flat area 150m west of a track on the Bidura track near a stand of mallee and a series of scalds and exposures.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 43	BH 3	Artefacts	121		0	Balazs Hansel	10/12/2014		Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 44	BH 3	Artefacts	55		0	Balazs Hansel	10/12/2014	Scatter of 11 art approx 100m W of S4 located on a wash off area running down NW twds the depression/lake basin. Artefacts are spotted on deflated surface in between the remnants of residual soil. The bottom of the slope is heavily eroded. The scatter was recorded at the end of B/BH3 adjusted on the next day (11/12) when B/BH4 reached the end of B/BH3	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 45	BH 3	Artefacts	11		0	Balazs Hansel	10/12/2014	Low density art scatter of 5 artefacts, located on a dune E slope. Direction is NE-SW.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 46	BH 2	Artefacts	5		0	Balazs Hansel	9/12/2014		Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 47 / B 48	BH 2	Artefacts	24		0	Balazs Hansel	9/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 49	BH 3	Artefacts	3		0	Balazs Hansel	10/12/2014	Low density scatter on the W slope of sand dune.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 5	GWRB Area 2 - 5	Artefacts	6		0	Clare Anderson	10/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 50	IB 7 - CD - S	Artefacts	7		0	Sharon Lane	13/12/2014	B 50 is a low density artefact scatter located in a scald within alluvial plains to the west of Burke and Wills Road.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 51	IB 6 - N - CD	Artefacts and Hearth	2	Hearth	1	Amanda Atkinson	13/12/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 52	IB 5 - AA	Isolated Artefact	1		0	Clair Davey	13/12/2014	B 52 is an isolated silcrete angular fragment located in the scalded plains to the west of Burke and Wills Road	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 53	IB 5 - AA	Isolated Artefact	1		0	Clair Davey	13/12/2014	B 53 is an isolated manuport of an unidentified material, potentially porcellanite, located on the flats between dunes at the northern end of Burke and Wills Road.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 54	IB 5 - AA	Isolated artefact	1		0	Clair Davey	13/12/2014	B 54 is a heavily rolled silcrete complete flake located to the west of Burke and Wills Road in the alluvial plains between two dunes.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 55	IB 5 - AA	Isolated Artefact	1		0	Sharon Lane	13/12/2014	B 55 is a single silcrete complete flake located on a flat sandy plain with chenopod. Land disturbance appears to be limited to stock grazing and general wash and deflation.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 56	B BH 9	Artefacts	3		0	Bianca Petruzelli	17/12/2014	B 56 is a low density artefact scatter of three flakes located on a flat alluvial plain.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 57	BH 9	Artefacts	2		0	Bianca Petruzelli	17/12/2014	B 57 are two discrete silcrete flakes located approximately 35 m apart on alluvial plains	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 58 / B 62	B BH 9	Artefacts	4		0	Bianca Petruzelli	16/12/2014	B 58 is a low density artefact scatter of four artefacts, including two cores, located on saltbush plains.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 59	B BH 9	Artefacts	2		0	Balazs Hansel	16/12/2014	Low density scatter just SE of intersection of Box Cr Rd and Bourke and Wills Rd.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 6	GWRB Area 2 - 4	Isolated Artefact	1		0	Clare Anderson	10/10/2014	This site consists of a single silcrete angular fragment	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
													Riverine Plain.
B 60	B BH 9	Artefacts	4		0	Balazs Hansel	16/12/2014	Small low density scatter approx 200m E of S7	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 61	B BH 9	Artefacts	2		0	Balazs Hansel	16/12/2014	Small scatter of two art just 100m E of S8	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 63	B BH8	Artefacts	4		0	Balazs Hansel	16/12/2014	Scatter off four artefacts around slight depression/scald.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 64	B BH8	Artefacts	17		0	Balazs Hansel	16/12/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 65	B BH8	Artefacts	2		0	Balazs Hansel	16/12/2014	Scatter of two art located on the SE of a large scald/depression.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 66	B BH8	Artefacts	56		0	Balazs Hansel	16/12/2014	Large, fairly dense scatter located on the E- S perimeter of a depression/scald.Artefacts were found on the eroding top and bank, and inside the depression as well.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 67	B BH8	Artefacts	20		0	Balazs Hansel	16/12/2014	Scatter of art located around and in a depression/scald. The are has been ploughed sometime in the past and now it is a used for grazing. The top soil is highly disturbed and loose. Artificial drainage channels are recorded as well running approxS-N.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 68	B BH8	Artefacts	48		0	Balazs Hansel	16/12/2014	Large, low density scatter located approx100m W of S5. The site is situated on highly disturbed(ploughed land) and its western part is around a large scale.Probably the E section of the scald/depression was ploughed some time in the past.the site is extending beyond the footprint twos N,E,S.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 69	IB 5 - AA	Isolated Artefact	1		0	Unknown	19/12/2014	Single artefact located on a salt bush plain. Artefact & phones on SL ipad	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 7	GWRB Area 2 - 8	Isolated Artefact	1		0	Clare Anderson	17/10/2014	Silcrete bipolar complete flake with crushed platform an termination 35 x 12 x8	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 70	IB 5 - AA	Isolated Artefact	1		0	Amanda Atkinson	19/12/2014	Signle grindstone fragment located on an alluvial plain. Nearby vegetation includes belah and bluebush. Grindstone fragment - ground on one side, base not ground. Edge work (pecking) sandstone 86mm x 46mm x 17mm	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 71	IB 5 - AA	Artefacts and Hearth	13	Hearth	1	Amanda Atkinson	19/12/2014	Small artefact scatter located in exposed areas of a smll dune slope. Very unstable looking landform/soils/sands. Has an intact hearth in the centre of the site	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 72	BH 1	Artefacts	7		0	Balazs Hansel	8/12/2014	Small artefact scatter located on the western slope of a sand dune. The are has high level of disturbance caused by vehicle track an subsequent wind deflation. Additional photos Balazs's cannon:1337-1338 S,1339 E	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 73	BH 3	Isolated Artefact	1		0	Balazs Hansel	10/12/2014	This site is a single isolated stone flake located in chenopod plains.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 74	BH 2	Isolated Artefact	1		0	Balazs Hansel Joe Borg	9/12/2014	This site is a single flake located in an exposure within saltbush plains to the south of Box Creek/Arumpo Road	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 75	BH 3	Artefacts	2		0	Balazs Hansel	10/12/2014	Scatter of two art on N slope of crescent shape low dune.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 76	BH 3	Isolated Artefact	1		0	Balazs Hansel	11/12/2014	Isolated find located on a stock track on the E slope of sand dune. Residual soils have been eroded by stock tracks and wind deflation.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 77	BH 5	Isolated Artefact	1		0	Balazs Hansel	12/12/2014	Isolated find located in an opening within the Mallee, situated on the NE slope of a low dune.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 78	IB 5 - S - AA	Artefacts	8		0	Nicolas Grguric	20/12/2014	B 78 is a low density, highly dispersed artefact scatter of eight artefacts recorded of 90 m. Artefacts were visible in exposures within residual soils.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 79	IB 5 - S - AA	Isolated Artefact	1		0	Nicolas Grguric	20/12/2014	An isolated stone artefact on a sandplain.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 8	GWRB Area 2 - 8	Isolated Artefact	1		0	Clare Anderson	17/10/2014	Silcrete complete flake with wide indeterminate platform and feather termination 18 x 22 x 4 located on a bare patch of soil in an open belay blue bush plain, the lunette and remnant lunette of an nanned relic lake is visible to the eats, a fence and acces s track is located 80m South	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 80	IB 5 - S - AA	Artefacts	4		0	Nicolas Grguric	20/12/2014	Four stone artefacts scattered over a diffuse area.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 81	IB 5 - S - AA	Artefacts	8		0	Nicolas Grguric	20/12/2014	B 81 is a low density artefact scatter of nine artefacts recorded over 50 m in a series of scalds and exposures within sandplains to the south of Arumpo Road.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
B 82	IB 5 - S - AA	Isolated Artefact	1		0	Nicolas Grguric	20/12/2014	An isolated stone artefact on a sandplain.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 83	IB 5 - S - AA	Artefacts and Hearth	5	Hearth	2	Nicolas Grguric	20/12/2014	B 83 is a small low density artefact scatter with a scattered hearth. The hearth consists of burnt termite heat retainer scattered over 3 m with no visible charcoal or central concentration. The hearth has no excavation potential.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 84	IB 5 - S - AA	Artefacts and Hearth	30	Hearth	1	Amanda Atkinson	20/12/2014	B 84 is a low density dispersed artefact scatter with a hearth	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 85	IB 5 - AA	Isolated Artefact	1		0	Nicolas Grguric	13/12/2014	An isolated stone artefact on a sandplain.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 86	IB 5 - AA	Artefacts	26		0	Amanda Atkinson	20/12/2014	B 86 is a large, moderate density artefact scatter with focal points of higher density. The site has a strong spatial association with the BWR 24 to BWR 33 series and likely represents a continuation of this scatter/	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush

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B 87	BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	Isolated find located on a wind deflated area.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 88	BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	Isolated art on an exposed area, 20m W of a vehicle track.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 89	BH 9	Artefacts	2		0	Balazs Hansel	17/12/2014	Small scatter of two artefacts located in a scald.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 9	GWRB Area 2 - 8	Artefacts	2		0	Georgia Roberts	17/10/2014	This site is a small low density artefact scatter	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 90	BH 9	Artefacts	41		0	Balazs Hansel	17/12/2014	The site is situated inside a very pronounced depression/scald.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
B 91	BH 9	Artefacts	2		0	Balazs Hansel	17/12/2014	General exposure with residual soils around salt bush.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 92	BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	The area has been affected by wind deflation, surface wash and stock tracks	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 93	BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	Stock tracks are crossing the location	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 94	BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	Eroded, deflated areas around residual soil patches with saltbush.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 95	B BH 9	Artefacts	9		0	Balazs Hansel	17/12/2014	Low density art scatter located around a small sandy rise. Artefacts were found on eroded stock tracks and deflated areas.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 96	B BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	Isolated find located on an exposed area with stock tracks crossing the location.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
B 97	IB 7 - CD - S	Isolated Artefact	1		0	Nicolas Grguric	11/12/2014	An isolated stone artefact located in a drainage line.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
B 98	IB 5 - AA	Artefacts	1		0	Nicolas Grguric	13/12/2014	An isolated stone artefact.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
Box Creek IF 1	Walking back to car	Isolated Artefact	1		0	Clare Anderson	29/05/2013	A silcrete retouched flake was located in a scald near a meander of Box Creek. The artefact was identified during a survey of an exploration drill hole and as such it is anticipated that further low density stone artefacts may be presented in the surrounding landscape.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR 10	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 10 is a single silcrete complete flake located within bluebush plain. It is assessed to have low archaeological significance.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 11	GWRN 5	Possible Hearth	0	Hearth	1	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 11 is a possible hearth scatter over 3 m x 1 m. Would require further investigation to determine if cultural or natural. Scattered Clay retainers	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 12	GWRN 5	Artefacts and Hearth	6	Hearth	1	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 12 is an artefact scatter of six stone artefacts and one hearth scatter located on a scald west of Burke and Wills Road.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 13	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 13 is a silcrete angular fragment measuring 16 mm x 9 mm x 10mm. It was recorded as a site due to its proximity to artefact scatter BWR 12. It is in a disturbed, deflated context and is of low archaeological significance	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 14	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 14 is a quartzite complete flake measuring 21 mm x 12 mm x 7 mm and is located on a white scald on a dune overlooking Tin Tin Lake. It has flaked platform and a feather termination with a longitudinal split. It is one of a number of isolated and low density artefact scatters (BWR14-22, BWR 39, BWR40-42 and WB 108 and WB 109) located in large exposures in this landform.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 15	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 15 is a silcrete complete flake measuring 17 mm x 9 mm x 3 mm and is located on a white scald on a dune overlooking Tin Tin Lake and assorted meanders of the relict Box Creek. It has a crushed platform and a step termination. It is one of a number of isolated and low density artefact scatters (BWR14-22, BWR 39, BWR40-42 and WB 108 and WB 109) located in large exposures in this landform.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 16	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 16, 1 Silcrete Complete Flake 17mm 16mm 4 mm	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
BWR 17	GWRN 7	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 17 is an artefact scatter consisting of a silcrete distal flake (15mm x 24 mm x 4 mm) with a feather termination and a quartz distal flake (5mm x 5mm x 1mm) with a feather termination. The two artefacts are located on a small white scald east of a larger white scald which runs north south and contains BWR 18. The scald, measuring 35 m x 25 m, is on a dune overlooking Tin Tin Lake and assorted meanders of the relict Box Creek. It is one of a number of isolated and low density artefact scatters (BWR14-22, BWR 39, BWR40-42 and WB 108 and WB 109) located in large exposures in this landform.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 18	GWRN 7	Artefacts	8		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 18 is a low density artefact scatter consisting of 8 stone artefacts including 7 silcrete flakes and one chert backed flaked tool. The scald is runs for approximately 500m north-south along a dune on the western margins of Tin Tin Lake and overlooks assorted meanders of the relict Box Creek . It is one of a number of isolated and low density artefact scatters (BWR14-22, BWR 39, BWR40-42 and WB 108 and WB 109) located in large exposures in this landform.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 19	GWRN 7	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 19 is a low density artefact scatter consisting of 2 stone artefacts including one silcrete complete flake (10mm x 9 mm x 3mm) with a flaked platform and feather termination and a silcrete angular fragment measuring 20mm x 22mm x 10mm. The site is located on a scald which runs for approximately 500m north-south along a dune on the western margins of Tin Tin Lake and overlooks assorted meanders of the relict Box Creek . It is one of a number of isolated and low density artefact scatters (BWR14-22, BWR 39, BWR40-42 and WB 108 and WB 109) located in large exposures in this landform. BWR 18 is located 120m north on the same scald.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 20	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 20 is a silcrete complete flake (18 mm x 15 mm x 3mm) with a flaked platform and a feather termination. It is located in a scald measuring 35 m x 40 m adjacent a fenceline and track which runs north-south to Box Creek Road. The scald is located on a dune overlooking Tin Tin Lake and relict meanders of Box Creek. A number of other isolated stone artefacts and low density artefact scatters are located on the same landform (BWR14-31, BWR 39-42, WB 108 and WB 109).	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 21	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 21 is a silcrete proximal flake (21 mm x 20 mm x 8mm) with 15% cortex and a flaked platform It is located in a scald measuring 70 m x 20 m approximately 20m west of a fenceline and track which runs north-south to Box Creek Road. The scald is located on a dune overlooking Tin Tin Lake and relict meanders of Box Creek. A number of other isolated stone artefacts and low density artefact scatters are located on the same landform (BWR14-31, BWR 39-42, WB 108 and WB 109).	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 22	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 22 is a silcrete distal flake (22 mm x 22mm x 5mm) with a feather termination. It is located in a scald immediately to the west of a track which runs north-south to Box Creek Road. The scald is located on a dune overlooking Tin Tin Lake and relict meanders of Box Creek. A stand of box trees is present 40m to the south. A number of other isolated stone artefacts and low density artefact scatters are located on the same landform (BWR14-31, BWR 39-42, WB 108 and WB 109).	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 23	GWRN 8	Artefacts	3		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 23 is a low density artefact scatter consisting of two silcrete flakes with cortex and a silcrete retouched flake (scraper) with retouch on the lateral and distal margins.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 24	GWRN 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 24 is a silcrete complete flake (13mm x 13mm x 4mm) with 40% cortex, a flaked platform with platform preparation evident and a feather termination. The site is located at the base of a east-west running dune in a dune blow out. It is likely that the artefact is displaced from downslope erosion and that the dune contains further buried stone artefacts as indicated by the presence of further artefacts in exposures on the dune crest.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 25	GWRN 8	Artefacts	4		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 25 is a low density artefact scatter located in an exposure caused by vehicle tracks on the crest of an east-west running dune. It contains two silcrete complete flakes, a silcrete medial flake and a silcrete retouched flake with retouch on the lateral margin. It is likely that further stone artefacts are contained within unexposed portions of the dune to the presence of further scatters of stone artefacts in exposures on the dune.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 26	Opportunistic walk from GWRN 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 26 is a silcrete complete flake (14mm x 22 m x 3mm) with a flaked platform and feather termination located in an exposure caused by vehicle tracks on the crest of an east-west running dune. It is likely that further stone artefacts are contained within unexposed portions of the dune to the presence of further scatters of stone artefacts in exposures on the dune.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 27	GWRN 8	Artefacts and Hearth	29	Hearth	1	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 27 is an artefact scatter and potential archaeological deposit of 29 stone artefacts in an exposure caused by vehicle tracks on the crest of an east-west running dune and dune blow out. A sample of nine artefacts were recorded. It is likely that further stone artefacts are contained within unexposed portions of the dune to the presence of further scatters of stone artefacts in exposures on the dune. A possible remnant hearth scatter with dispersed calcrete and termite nest heat retainers was also located over 4 m x 2 m. There was no visible charcoal associated with the hearth scatter.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 28	GWRN 8	Artefacts	17		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 28 is an artefact scatter and potential archaeological deposit of 17 stone artefacts in an exposure caused by vehicle tracks on the crest of an east-west running dune and dune blow out. It is likely that further stone artefacts are contained within unexposed portions of the dune to the presence of further scatters of stone artefacts in exposures on the dune.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 29	GWRN 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 29 is a silcrete distal flake (23 mm x 18 mm x 9 mm) with a crushed termination located in a bare patch of soil on the plains between two east-west running dunes to the west of Burke and Wills Road	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
BWR 3	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 3 is a silcrete complete flake (26 mm x 13 mm x 8 mm) with a flaked platform and feather termination. It is located in a scald adjacent an old meander of Box Creek to the north of the meander that fed Tin Tin Lake. Despite good visibility only two other isolated artefacts (BWR 5 and BWR 6) were located in the surveyed area around this feature.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR 30	GWRN 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 30 is a silcrete medial flake (12 mm x 25 mm x 8 mm) in a bare patch of soil on the plains between two east-west running dunes to the west of Burke and Wills Road	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 31	GWRN 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 31 is a silcrete complete flake (17mm x 21mm x 4mm) with 5% cortex, a flaked platform and a feather termination in a bare patch of soil on the plains between two east-west running dunes to the west of Burke and Wills Road	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 32	GWRN 8	Artefacts, Hearth and PAD	290	Hearth	1	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 32 consists of a scatter of 290 stone artefacts (264 sampled) and a hearth scatter within a dune blow out of an east-west running dune. The dune runs east west and is in proximity to a number of depressions with source bordering dunes. Stone artefacts within the site include silcrete flakes, silcrete cores, silcrete retouched tools, anvils, hammerstone, broken grinding fragments, chert flakes and quartzite flakes. Densities varied between 0.1 and 10 artefacts per m2. The site demonstrated higher percentages of backed artefacts and retouched flakes compared with other recorded sites in the most recent EA survey work. The site is one of the highest density sites in the project area. Not all of the dune has eroded and further artefacts may be present in high densities within residual soils. The site and adjacent landforms contain research value under a number of criteria:	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 33	GWRN 9	Artefacts	99		0	Amanda Atkinson and Bernadette Allen	28/10/2013	BWR 33 is a low density continuous artefact scatter over 480 m, containing over 110 artefacts with densities reaching approximately 4 artefacts per m2 in dune blow outs at the northern end of the site. BWR 33 contains a high percentage of retouched flakes, backed flakes and burrens when compared with other sites in the Balranald Project area.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 34 / BWR 35	BWRARI 1	Artefacts		Hearth	2	Amanda Atkinson and Bernadette Allen	28/10/2013		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR 36	BWRARI 1	Artefacts	8		0	Amanda Atkinson and Bernadette Allen	28/10/2013	BWR 36 is a low density artefact scatter consisting of eight silcrete flakes. Further stone artefacts may be present in low densities in residual soils in the adjacent landforms.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR 37	BWRARI 1	Artefacts	76		0	Amanda Atkinson and Bernadette Allen	28/10/2013	BWR 37 is a low density artefact scatter consisting of 113 silcrete, chert, quartzite stone artefacts. Flakes, flaked tools, cores, grinding fragments and angular fragments are present. Artefact densities ranged from 0.01 to 4 artefacts per square metre. Artefacts were observed eroding from residual soils suggesting that further artefacts may be present in residual soils in the adjacent landforms.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR 38	BWRARI 1	Artefacts	7		0	Amanda Atkinson and Bernadette Allen	28/10/2013	BWR 38 is a low density scatter consisting of seven stone artefacts spread across 70 m. Further stone artefacts may be present in low densities in the surrounding landforms.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR 39	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 39 is a silcrete proximal flake (21mm x 8mm x 8mm with a flaked platform located in a small bare patch of soil on a plain overlooking Tin Tin Lake. It is one of a number of isolated and low density artefact scatters located on this landform. Further low density stone artefacts may be present in the surrounds.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 4	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 4 is a silcrete proximal flake (12mm x 12mm x 2mm with a flaked platform located in a small bare patch of soil in chenopod plains. A northern relict mender of Box Creek runs southwest-northeast, approx. 400m north of BWR 4, towards Upson Downs.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
BWR 40	GWRN 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	27/10/2013	BWR 40 is a silcrete complete flake (17mm x 11mm x 3 mm) with a flaked platform and feather termination. It is located on the margins of Tin Tin Lake on chenopod plains near a slight rise. The surrounding landforms contain a number of isolated and low density stone artefact scatters.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 5	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 5 is a silcrete retouched flake (20 mm x 22 mm x 5 mm) with retouch on 20% of the distal margin. The site is located on a bare patch of soil approximately 120m south of a series of scalds, exposures and soaks associated with a relict meander of Box Creek which runs south-west towards the Upson Downs property. Despite good visibility only a small number of artefacts were identified during the survey however further low density stone artefacts may be present in residual soils associated with the Box Creek feature.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

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BWR 6	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 6 is a silcrete distal flake 20mm x 17mm x 4mm with a feather termination. The site is located in a scld which forms part of a series of exposures and soaks associated with a relict meander of Box Creek which runs south-west towards the Upson Downs property. Despite good visibility only a small number of artefacts were identified during the survey however further low density stone artefacts may be present in residual soils associated with the Box Creek feature.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR 7	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013		Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 8	GWRN 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 8 is a Silcrete complete flake (13mm x 9mm x 3mm) with a focal platform and step termination. It is located in a bare patch of soil 100m west of Burke and Wills Road and about 35m southwest of a small artefact scatter (BWR 9) in a scald. It is possible that further stone artefacts in low densities may be present in residual soils.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 9	GWRN 5	Artefacts	6		0	Amanda Atkinson and Bernadette Allen	26/10/2013	BWR 9 is a small low density artefact scatter of 6 silcrete stone artefacts, including a broken tool and several broken flakes, located in a scald 80 m west of Burke and Wills Road. BWR 8 is located 35m southwest of the BWR 9. Further stone artefacts may be present in residual soils across the landscape.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
BWR 41	WBAC 43 - Option 1	Isolated Artefact	1		0	Clare Anderson	12/03/2014	This site is a single isolated stone artefact	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR 42	WBAC 43 - Option 1	Isolated Artefact	1		0	Clare Anderson	12/03/2014	This site is a single isolated stone artefact	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
BWR IF 1	21	Isolated Artefact	1		0	Clare Anderson	30/05/2013	BWR IF 1 consists of a single complete flake (14 x 11 x 1 mm) located 25m west of the Burke and Wills Road.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
BWR IF 2	21	Isolated Artefact	1		0	Clare Anderson	30/05/2013	A single waterworn broken silcrete flake . Maximum dimension 42mm, (25 mm x 35 mm x 3mm) located in exposure adjacent to the soak.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Cringadale 1	WBAC 32 - Option 1	Artefacts and PAD	3		0	Clare Anderson	13/03/2014	Artefact scatter of three artefacts located midslope of a sourcebordering dune with bluebush. Further arefacts likely in surrounding scalds and pan.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Cringadale 2	WBAC 33 - Option 1	Isolated Artefact	1		0	Clare Anderson	13/03/2014	A single isolated silcrete exhausted core located on a bare patch of ground approximately 15 m off an access track in bluebush plains at the base of a dune with red soil. Core dimensions were 20 mm in length, 20 mm in width, longest flake scar 15mm. A silcrete angular fragment was also present.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 10	KG 2	Artefacts	2		0	Clare Anderson	22/10/2013	Karra 10 is a low density artefact scatter of twosilcrete distal flakes with feather terminations measuring 12mm x 10mm x 2mm and 13mm x 10mm x 2mm respectively. The artefacts are located on a bare patch of soil 50m north of an access track which runs from the calcareous gravel rise west to Box Creek. Further stone artefacts may be present in low densities in residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 11	KG 2	Artefacts	2		0	Clare Anderson	22/10/2013	Karra 11 is a low density artefact scatter of a silcrete complete flake (20mm x 11mm x 4mm) with a flaked platform and feather termination and a silcrete distal flake (10mm x 10mm x 3mm) with a step termination. Further stone artefacts may be present in low densities in residual soils and may be intact to the east of the site.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 12	KG 3	Artefacts	2		0	Amanda Atkinson	23/10/2013	Karra 12 is a low density artefact scatter consisting of two broken silcrete flakes and silcrete angular fragment over a 50m by 30m exposure.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 13	KG 3	Artefacts and Hearth	8	Hearth	1	Phil Roberts	23/10/2013	Karra 13 is a low density artefact scatter consisting of eight stone artefacts including complete and broken silcrete flakes, silcrete angular fragment and a silcrete core and a remnant hearth scatter of burnt calcrete, burnt termite bound and visible charcoal concentrated over a 1m x 1 m area. The hearth is located on the south side of the site.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 14	KG 3	Isolated Artefact	1		0	Clare Anderson and Phil Roberts	22/10/2013	Karra 14 is an isolated silcrete complete flake (10mm x 18mm x 4mm) with a faceted platform and a feather termination. It is located in a large exposure/scald. Karra 16 is located 65m south. Occasional stone artefacts may be present in residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 15	KG 3	Isolated Artefact	1		0	Amanda Atkinson	22/10/2013	Karra 15 is an isolated silcrete flake (13mm x 11mm x 4mm) with 10% cortex located in a large exposure between Box Creek and a calcareous gravel rise.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

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Karra 16	KG 3	Isolated Artefact	1		0	Clare Anderson	22/10/2013	Karra 16 is an isolated silcrete retouched flake (5% cortex, 27mm x 24mm x 7mm) with retouch on both lateral margins. It is located in a series of scalds between a calcareous gravel rise and a relict meander of Box Creek. Occasional stone artefacts may be located in residual soils in the landscape.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 17	KG 4	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 17 is an isolated silcrete compete flake (5% cortex, 26mm x 25mm x 8mm) with a crushed platform and feather termination.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
Karra 18	KG 4	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 18 is an isolated silcrete compete flake (38mm x 25mm x 4mm) with a flaked platform and feather termination.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
Karra 19	KG 4	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 19 is an isolated silcrete compete flake (26mm x 19mm x 4mm) with a flaked platform and step termination.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
Karra 20	KG 4	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 20 is an isolated silcrete multiplatform core (50mm x 35mm x 20mm with the longest flake scar maximum dimension of 26mm). It is located in an exposure from downward slope wash off a calcareous gravel rise, east of an access track.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 21	KG 4	Artefacts	14		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 21 is a low density artefact scatter consisting of 14 silcrete stone artefacts including complete and broken flakes and a multiplatform core. It is located on a deflated exposure between two calcareous rises. Occasional stone artefacts may be present in residual soils in the surrounding landscape.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
Karra 22	KG 4	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 22 is an isolated silcrete complete flake (30% cortex, 30mm x 24mm x 10mm) with a crushed platform and feather termination	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 23	KG 4	Artefacts	2		0	Phil Roberts	23/10/2013	Karra 23 is an artefact scatter consisting a silcrete proximal flake (8mm x 10mm x 6mm) with a flaked platform and a silcrete angular fragment in a small scald.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 24	KG 4	Artefacts	25		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 24 is an artefact scatter consisting 25 silcrete and chert stone artefacts including complete and broken flakes, retouched flakes and two cores. It is located on a series of exposures between a meander of Box Creek and a calcareous gravel rise. Further stone artefacts in low densities can be anticipated in the surrounding residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 25	KG 4	Isolated Artefact	1		0	Clare Anderson and Bernadette Allen	23/10/2013	Karra 25 is an isolated silcrete complete flake (24mm x 26mm x 12mm) with a crushed platform and step termination located in a small exposure on the transitional soil between a calcareous gravel rise and the chenopod plain associated with a relict meander of Box Creek. Occasional further stone artefacts may be present in low densities in residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 26	KG 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 26 is an isolated silcrete complete flake (40mm x 25mm x 4mm) with a flaked platform and feather termination located in a small exposure in chenopod plain associated with a relict meander of Box Creek. Occasional further stone artefacts may be present in low densities in residual soils.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
Karra 27	KG 5	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 27 is an isolated silcrete proximal flake (43mm x 28mm x 4mm) with a crushed platform located in a small exposure in chenopod plain associated with a relict meander of Box Creek. Occasional further stone artefacts may be present in low densities in residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 28	KG 5	Artefacts	4		0	Amanda Atkinson and Bernadette Allen	23/10/2013	Karra 28 is an artefact scatter consisting of four silcrete flakes located in small exposure in chenopod plain associated with a relict meander of Box Creek. Occasional further stone artefacts may be present in low densities in residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
Karra 29	KG 5	Artefacts	4		0	Clare Anderson and Amanda Atkinson	23/10/2013	Karra 29 is an artefact scatter consisting of four silcrete stone artefacts including a retouched flake, a medial flake and two angular fragments located in small exposure in chenopod plain associated with a relict meander of Box Creek. Occasional further stone artefacts may be present in low densities in residual soils.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
Karra 3	KG 1	Artefacts	2		0	Clare Anderson	22/10/2013	Karra 3 consists of two distal silcrete flakes that have eroded from residual soils approximately 40 m from a large pan. Wind blown sediment has built up on the residual soils. The site has been assessed as having low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 30	GWRN 1	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	24/10/2013	Karra 30 is a silcrete complete flake located on the margins of an expansive pan on a dune overlooking Tin Tin Lake. It was approximately 50m from the nearest artefact recorded at site WB 107 on the same landform and could be considered part of the same site. Further stone artefacts may be located in low to moderate densities in the surrounding residual soils.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 31	GWRN 2	Artefacts	3		0	Amanda Atkinson and Bernadette Allen	24/10/2013	Karra 31 is a small artefact scatter consisting of two complete silcrete flakes and a proximal silcrete flake in a scald of the relict bed of Tin Tin Lake. Further stone artefacts may be located in low to moderate densities in the surrounding residual soils.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 33	GWRN 3	Artefacts, Hearth, PAD	449	Hearth	1	Clare Anderson, Amanda Atkinson, Phil Roberts, Bernadette Allen	25/10/2013	Karra 33 is an extensive occupation complex situated across a pan and rise overlooking Pitarpunga Lake and remnant drainage channels. The site contains stone artefacts of silcrete, quartz, quartzite, sandstone, chert and rhyolite and deflated hearth scatters. Artefact types include broken grinding stone fragments, retouched flakes, flakes, cores, anvils and hammerstones. Artefact densities across the pan range from 0.02 artefacts per square metre to 20 artefacts per square metre. Only a sample of the visible pan was surveyed and recorded and is highly likely that further artefacts of moderate density will be present across the pan and landform as archaeological material is visible on the surface of a pan and eroding from residual soils along the margins of the pans. Residual soils and rills indicate soil deposits exceeding 40 cm. The site and adjacent landforms contain research value under a number of criteria: connectivity with other sites located in association with Pitarpunga Lake and relict drainage channels, datable material in the form of remnant hearth and sandy soil profiles exceeding 40 cm, which depending on further investigation of the geomorphic agents responsible for land form	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 34	GWRN 4	Isolated Artefact	1		0	Phil Roberts	25/10/2013	Karra 34 is a silcrete complete flake located in a small scald measuring 20m x 10 m on the dunes and sandplains, approximately 300m from Tin Tin Lake. It is one of a number of isolated artefacts and stone artefact scatters evident in the surrounding landscape. Further stone artefacts are likely to be present in residual soils.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 35	GWRN 4	Artefacts	2		0	Phil Roberts and Bernadette Allen	25/10/2013	Karra 35 is a silcrete complete flake and silcrete angular fragment located in a small scald measuring 30m x 10 m on the dunes and sandplains, approximately 370m from Tin Tin Lake. It is one of a number of isolated artefacts and stone artefact scatters evident in the surrounding landscape. Further stone artefacts are likely to be present in residual soils.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 36	GWRN 4	Isolated Artefact	1		0	Bernadette Allen	25/10/2013	Karra 36 is an isolated silcrete broken flake.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 37	GWRN 4	Artefacts	3		0	Bernadette Allen	25/10/2013	Karra 37 is a small artefact scatter of three silcrete stone artefacts; a complete flake, a proximal flake and a retouched flake. A quartz and a silcrete angular fragment were also recorded. Further stone artefacts in low densities may be present in residual soils.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 38	GWRN 4	Isolated Artefact	1		0	Bernadette Allen	25/10/2013	Karra 38 is a silcrete complete flake (25mm x 22mm x 6mm) with a flaked platform and feather termination. It is located on a bare patch of soil in a scalded plain associated with Tin Tin Lake. Further stone artefacts may be present in low densities in residual soils in the surrounding landscape.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 39	GWRN 4	Artefacts	2		0	Bernadette Allen	25/10/2013	Karra 39 is a small artefact scattering consisting of a quartz complete flake, a silcrete medial flake and two silcrete angular fragments in a series of scalds and exposures south and west of Muckee lake.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra 4	KG 1	Artefacts	8		0	Clare Anderson and Phil Roberts	22/10/2013	Karra 4 is an artefact scatter of eight artefacts located in a pan adjacent a meander of Box Creek. Further stone artefacts may be present in residual soils in the surrounding landscape.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 40	GWRN 4	Isolated Artefact	1		0	Bernadette Allen	25/10/2013	Karra 40 is a silcrete complete flake (19mm x 25mm x 7mm) with flaked platform and step termination located in an exposure in a scalded chenopod plain between Tin Tin Lake and a meander of Box Creek.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 41	Car stop near KG 6	Artefacts	11		0	Amanda Atkinson and Bernadette Allen	29/10/2013	Karra 41 is a low density stone artefact scatter a quartz proximal flake, a silcrete retouched flake with retouch on the distal margin and silcrete complete and broken flakes. It is located in the transitional zone between the sandplain and the calcareous gravel rise. Further stone artefacts of low densities may be located in adjacent residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
Karra 42	KG 6	Artefacts	17		0	Amanda Atkinson and Bernadette Allen	29/10/2013	Karra 42 is a low density stone artefact scatter consisting of 17 silcrete flakes located in a scald to the west of a track and calcareous gravel rise and east of a meander of Box Creek.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 43	KG 6	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	29/10/2013	Karra 43 is a silcrete distal flake *(9mm x 15mm x 3mm) located in an exposure with chenopod sandplain between a calcareous gravel rise and a meander of Box Creek	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 44	KG 6	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	29/10/2013	Karra 44 is a silcrete retouched flake with retouch on the distal margin located in an exposure with chenopod sandplain between a calcareous gravel rise and a meander of Box Creek	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 45	KG 6	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	29/10/2013	Karra 45 is a silcrete multiplatform core with 20% cortex (35mm x 30 mm x 15mm, 5 negative scars) located in an exposure with chenopod sandplain.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 46	KG 6	Artefacts	84		0	Clare Anderson	29/10/2013	Karra 46 is an artefact scatter of approximately 84 stone artefacts of which approximately 75 stone artefacts were recorded, located in a large pan or scald east of a meander of Box Creek. Artefacts were made from silcrete, quartz, quartzite and an unidentified volcanic material. Artefact types included complete and broken flakes, retouched flakes, cores and angular fragments. The density of artefacts within the pan were typically less than <0.01 and had a maximum of 4 artefacts per square metre.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 47	KG 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 47 is a silcrete distal flake (12mm x 16mm x 4mm) with a feather termination located in an exposure adjacent a track in chenopod plains..	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 48	KG 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 48 is a silcrete complete flake (10mm x 10mm x 1mm) with a crushed platform and a feather termination.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 49	KG 7	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 49 is a silcrete distal flake (5mm x 10mm x 2mm) with a feather termination.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 5	KG 1	Artefacts	3		0	Clare Anderson	22/10/2013	Karra 5 is a low density artefact scatter of three stone artefacts across 40 m x 20 m. It is located in a large scald which is 600 m x 200m or pan to the east of a dune and dam associated with Box Creek. Artefact scatter Karra 4 is located 70 m north-west of Karra 5 while Karra 3 is located 75m northeast. Only the portion of the pan north of the track was surveyed.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 50	KG 8	Artefacts	6		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 50 is a low density artefact scatter of 6 silcrete artefacts across a series of small scalds. Artefacts include complete and broken flakes and a retouched flake.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 51	KG 8	Artefacts	4		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 51 is a low density artefact scatter of a silcrete complete flake, a proximal flake, a retouched flake and an angular fragment. It is located in a scald in chenopod plains, approximately 50m from another low density artefact scatter Karra 50. Further stone artefacts may be located in adjacent residual soils in low densities.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 52	KG 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 52 is a silcrete angular fragment located in an exposure immediately north of a track. It has been recorded as a site due to its proximity to artefact scatter Karra 55.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 53	KG 8	Artefacts	3		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 53 is a small artefact scatter of two silcrete distal flakes and one silcrete proximal flake located in a small exposure in chenopod plains.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
Karra 55	KG 8	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 55 is a small artefact scatter of two silcrete distal flakes in a small exposure in chenopod plains.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 56	KG 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 56 is a silcrete complete flake located in a series of scalds and exposures. A partially buried hearth (Karra 57) is located 42m north while another isolated artefact (Karra 58) is located 48m south-west.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 57	KG 8	Hearth	0	Hearth	1	Amanda Atkinson and Bernadette Allen	31/10/2013	A partially buried possible hearth is located 48m north of site Karra 56 in a scald. Burnt sediment is clustered over a 1m area with burnt sediment, ranging in size from 2 to 10cm.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 58	KG 8	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 58 is a silcrete distal flake (18mm x 21mm x 13mm)	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 59	KG 10	Artefacts	3		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 59 is a small artefact scatter of two silcrete flakes and a quartz flake located in a series of scalds and exposures on the western margin of a large scald/pan that contains site WB 43. Karra 61 is located 135m west of Karra 59. Further stone artefacts may be located in residual soils in the surrounding landscape.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 6	KG 2	Artefacts and PAD	19		0	Clare Anderson	22/10/2013	Karra 6 is a low density artefact scatter of 19 silcrete, chert and quartzite stone artefacts in a scald north of a track which runs from a calcareous gravel rise west to Box Creek. The site contains a number of residual soil mounds with a build up of aeolian deposits up to 1.5m in height. It is anticipated that further buried stone artefacts will be present in the residual soils, demonstrated by the concentrations of artefacts at the base of residual soils and the presence of visible artefacts in the deflated scalds to the east and west of Karra 6 (eg. Karra 7).	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 60	KG 10	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 60 is a silcrete complete flake with a crushed platform and feather termination located in an exposure between two large scalds/pans and west of an irrigation pipe. Further stone artefact may be present in residual soils in the surrounding landscape.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 61	KG 10	Artefacts and PAD	46		0	Amanda Atkinson and Bernadette Allen	31/10/2013	Karra 61 is a low density dispersed stone artefact scatter in a large pan east of a meander of Box Creek. It consists of 46 stone artefacts, including artefacts of silcrete, quartzite, and volcanic material. Artefact types include complete and broken flakes, retouched flakes and cores. It is likely that further stone artefacts may be present within residual soils in the surrounding landscape. It was noted that this large pan contained a much less dense distribution of artefacts when compared with the artefact densities at Karra 62, located 50m south of Karra 61.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 62	KG 11	Artefacts, Hearth and PAD	48	Hearth	1	Amanda Atkinson and Bernadette Allen	31/10/2013	The site consists of silcrete and quartz stone artefacts and a hearth across a dune rise providing a good view over a remnant channel of Box Creek and a pan at the base of the rise. Artefact classes include flakes, retouched flakes and cores. The hearth is in good condition with concentrated charcoal and burnt stone eroding from residual soil on the pan. The site has good potential for intact deposits within the dune and is considered to have moderate archaeological and research value due to its position in the landscape, the potential for intact deposits, the presence of datable material in the form of burnt sediment and sandy soils and the sites connectivity with Box Creek and other sites in the immediate vicinity. The site may also contain comparative value to demonstrate differing activity and occupation patterns across the project area.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 7	KG 2	Artefacts, Hearth and PAD	10	Hearth	1	Clare Anderson	22/10/2013	Karra 7 is a low density site with 10 stone artefacts and two dispersed remnant hearth scatters in a large scald immediately north of a track which runs west from a calcareous gravel rise to Box Creek. There are approximately 15 residuals soil mounds within the site and these and surrounding residual soils may contain further stone artefacts at low densities and further intact hearth deposits.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 8	KG 2	Artefacts	2		0	Clare Anderson	22/10/2013	Karra 8 is a low density scatter of two stone artefacts; a silcrete retouched flake (5% cortex, 31mm x 19mm x 7mm) with scalar and step retouch on three quadrants and a silcrete complete flake (5% cortex, 22mm x 15mm x 4mm) with a crushed platform and feather termination. It is located in a scald east of Karra 7 and it is likely that further artefacts may be present in low densities in surrounding residual soils. A relict meander of Box Creek is located approximately 600m to the west.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 9	KG 2	Artefacts	3		0	Clare Anderson	22/10/2013	Karra 9 is a low density artefact scatter of three silcrete complete flakes located in a scald north of an access track which runs from the calcareous gravel rise west to Box Creek. Further stone artefacts may be present in low densities in residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 1	Stone 2011	Artefacts	16		0	Dr. Tim Stone	0/0/2011		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
Karra 63	KG 6	Isolated Artefact	1		0	Phil Roberts	29/10/2013	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

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Karra 64	WBAC 26 Option 1	Isolated Artefact	1		0	Clare Anderson	11/03/2014	Single isolated silcrete medial flake with negative scars on the dorsal surface and the remains of a hinge termination (25 mm x 20mm x 5mm) located on a bare patch of soil in bluebush plains. Artefact is highly weathered.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 65	WBAC 27 Option 1	Artefacts and PAD	2		0	Clare Anderson	11/03/2014	A silcrete proximal flake measures 20 mm x 14 mm x 3mm and a silcrete angular fragment (maximum dimension 12mm) located in a scald on dune slope overlooking a number of larger scalds and pans. Further artefacts are likely to be present beyond the assessed site boundary and survey area.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
Karra 70	GWRN 2	Isolated Artefact	1		0	Phil Roberts and Bernadette Allen	24/10/2013	Karra 70 is a proximal silcrete flake with 10% cortex located in a series of scalds in the bed of Tin Tin Lake	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
Karra IF 1	Access Track	Isolated Artefact	1		0	Clare Anderson	14/10/2013	Karra IF 1 is an isolated complete silcrete flake.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
N 1	Tn 6	Isolated Artefact and PAD	1		0	Giles Hamm	14/08/2012	The site is an Isolated Find and Potential Archaeological Deposit and is part of Transect 6. The site is located on the edge of a forestry track and a small depression within a mixed forest. It contains a Complete Flake made from silcrete. The site is assessed to be in good condition. The site is assessed to be of low archaeological significance. The site will not be impacted by the proposed Balranald Mineral Sands Project.	Wilkurra	Sandplains and dunefields with belah and rosewood	Belah and Bluebush	Sandplain	Level sandplain with belah
N 2	Tn 8	Artefacts, Hearth and PAD	27	Hearth	1	Giles Hamm	15/08/2012	The site is an Artefact Scatter, Hearth and Potential Archaeological Deposit and is part of Transect 8. The site is located on the edge of a forestry track and a soakage within a mixed forest. It contains a total of 27 artefacts nearly all made from made from silcrete. The site is assessed to be in good condition. The site is assessed to be of high archaeological significance.	Wilkurra	Sandplains and dunefields with belah and rosewood	Belah and Bluebush	Sandplain	Level sandplain with belah
N 3	Tn 2	Artefacts	3		0	Giles Hamm	16/08/2012	The site is an Artefact Scatter and Potential Archaeological Deposit and is part of Transect 2. The site is located on a sandy ridge above a swamp depression within a saddle feature. It contains a total of 3 artefacts all made from silcrete. The site is assessed to be in fair condition. The site is assessed to be of high archaeological significance.	Bulgamura	Sandplains and dunefields with belah and rosewood	Belah and Bluebush	Sandplain	Extensive undulating sandplain with dunes and open flats
N 4	Tn 2	Isolated Artefact	1		0	Giles Hamm	16/08/2012	The site is an Isolated Find and is part of Transect 2. The site is located in the middle of a Swamp depression in the north-east corner of Transect 2. It contains a Broken Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Arumpo	Sandplains and dunefields with mallee	Mallee	Dunefields	Parallel dunes and sandplains with narrow calcareous swales
N 5	Tn 2	Isolated Artefact	1		0	Giles Hamm	16/08/2012	The site is an Isolated Find and is part of Transect 2. The site is located in the middle of a Swamp depression in the north-east corner of Transect 2. It contains a Complete Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Bulgamura	Sandplains and dunefields with belah and rosewood	Belah and Bluebush	Sandplain	Extensive undulating sandplain with dunes and open flats
N 6	Tn 2	Hearth	0	Hearth	1	Giles Hamm	16/08/2012	The site is an Isolated Find and is part of Transect 2. The site is located in the middle of a Swamp depression in the north-east corner of Transect 2. It contains a Termite Nest Heat Retainer. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Bulgamura	Sandplains and dunefields with belah and rosewood	Belah and Bluebush	Sandplain	Extensive undulating sandplain with dunes and open flats
N 7	Tn 1	Isolated Artefact	1		0	Giles Hamm and Shaun Adams	11/09/2012	The site is an Isolated Find and is part of Transect 1. The site is located on a vehicle track. The track runs north-south along the western boundary of Transect 1. It contains a Multi-platform core made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Arumpo	Sandplains and dunefields with mallee	Mallee	Dunefields	Parallel dunes and sandplains with narrow calcareous swales
PL 1	PL 2	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 1 consists of a silcrete complete flake and a silcrete distal flake located in an exposure in an unploughed zone of Pine Lodge, 100m south and 240m west of the ploughzone. The site is also 200m and 320m respectively from two dams.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 10	PL 2	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 10 is a silcrete distal flake located in an exposure within an unploughed zone of Pine Lodge, 175m south and 395m west of the plough zone and 225m north and 325m west of the two respective dams.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 12	PL 2	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 12 is a silcrete complete flake located in an exposure within an unploughed zone of Pine Lodge.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 13	PL 2	Isolated Artefact	1		0	Phil Roberts	30/10/2013	Pine Lodge 13 is a silcrete complete flake located in an exposure within an unploughed zone of Pine Lodge.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 15	PL 2	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 15 is a silcrete flake located in an exposure within an unploughed zone of Pine Lodge.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 16	PL 2		1						Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
PL 2	PL 2	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 2 consists of a silcrete complete flake and a silcrete proximal flake located in an exposure in an unploughed zone of Pine Lodge, 130m south and 318m west of the ploughzone. The site is also 255m and 277m respectively from two dams. It is located 45m east of Pine Lodge 3, 80m from Pine Lodge 1, 65m from Pine Lodge 13.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 3	PL 2	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 3 is a silcrete broken unifacial core and silcrete angular fragment located in an exposure in an unploughed area at Pine Lodge.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 4	PL 2	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 4 is a silcrete complete flake located in an exposure in an unploughed area at Pine Lodge, 65m south of the ploughzone, 50m northwest of Pine Lodge 3 and 60m northeast of Pine lodge 5	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 5	PL 2	Artefacts	4		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge is an artefact scatter over a 35m x 25m area consisting of one glass retouched flake, a silcrete unifacial core, a silcrete proximal flake and a silcrete complete flake, 110m south of the ploughzone and 280m north of a dam.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 6	PL 2	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 6 is a silcrete complete flake located on the margins of an exposure 100m south of the plough line, 25m west of a fenceline and 45m west of Pine Lodge 5	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 7	PL 2	Artefacts	2		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 6 is a silcrete multifacial core and silcrete complete flake located in an exposure 160m south of the plough zone, 40m west of a fenceline and 260m north of an access track.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 8	PL 2	Isolated Artefact	1		0	Clare Anderson	30/10/2013	Pine Lodge 8 is a silcrete complete flake and a silcrete distal flake 50m south of the ploughzone.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
PL 9	PL 2	Isolated Artefact	1		0	Amanda Atkinson and Bernadette Allen	30/10/2013	Pine Lodge 8 is a silcrete proximal flake, 280m north of an access track and 110m south of the ploughzone.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
TL 1	TL 1	Isolated Artefact	1		0	Giles Hamm and Liz Foley	4/09/2012	The site is an Isolated Find located on the lower slope of an eroding sand dune. A single silcrete flake is lying exposed on a eroding scald surface. The site is also located approximately 12 metres west of an existing fence-line and 5 metres east of an existing vehicle track. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
TL 2	TL 4	Isolated Artefact	1		0	Giles Hamm and Liz Foley	4/09/2012	The site is an Isolated Find located on a slight elevation or rise within a scald feature near a small swamp/soak. A single silcrete flake is lying exposed on a eroding scald surface. The site is located approximately 8 metres west of an existing fence-line and 3 metres east of an existing vehicle track along a power-line easement. The site is assessed to be in poor condition. The site is also assessed to be of low archaeological significance.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
TL 3	TL 5	Hearth	0	Hearth	1	Giles Hamm	6/09/2012	The site is a scatter of termite nest heat retainer material. The heat retainer material lies exposed across a recently cleared scald surface. The site lies on a flat which was previously part of an open woodland but has been cleared for proposed development. There is no insitu archaeological material left on the site which was once an intact hearth. The site is located approximately 20 metres north of an existing 220 kv power-line easement. The site is assessed to be in poor condition. The site is also assessed to be of low archaeological significance.	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
TL 4	TL 5	Hearth	0	Hearth	1	Giles Hamm	6/09/2012	The site is a scatter of termite nest heat retainer material and a small Potential Archaeological Deposit measuring 1.3m x 1.3m in area. The heat retainer material lies exposed across a recently cleared scald surface. The site lies on a flat which was previously part of an open woodland but has been cleared for proposed development. There is a small amount of insitu archaeological material left on the site which was once an intact hearth. The site is located approximately 20 metres north of an existing 220 kv power-line easement. The site is assessed to be in poor condition. The site is also assessed to be of low archaeological significance.	Perekertin	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Transitional riverine plain on the western margins of the Riverine Plain.
TL 5	TL 5	Hearth and Hearth	0	Hearth	4	Giles Hamm	6/09/2012	The site is a cluster of four termite nest hearths with Potential Archaeological Deposit. Hearth 1 is a termite nest hearth measuring 1m x 1m in area, Hearth 2 is a termite nest hearth measuring 50cm x 50cm in area. Hearths 3 & 4 are less defined and contain a scatter of heat retainer material and some minor insitu termite nest heat retainers. There is no obvious charcoal associated with these exposed hearths and no stone artefacts. The heat retainer material lies exposed across a recently cleared scald surface. The site lies on a flat which was previously part of an open woodland but has been cleared for proposed development. There is a small amount of insitu archaeological material left on the site which was once an intact hearth. The site is located approximately 20 metres north of an existing 220 kv power-line easement. The site is assessed to be in poor condition. The site is also assessed to be of medium archaeological significance.	Perekertin	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Transitional riverine plain on the western margins of the Riverine Plain.
TL 6	TL 5	Hearth and PAD	0	Hearth	1	Giles Hamm	6/09/2012	The site is a hearth scatter with Potential Archaeological Deposit. Hearth scatter material is made up of termite nest heat retainers which have been disturbed due to ground clearing as a result of the construction of the 220 kv power-line easement. There is no obvious charcoal associated with this exposed hearth scatter and no stone artefacts. The heat retainer material lies exposed across a recently cleared scald surface. The site lies on a flat which was previously part of an open woodland but has been cleared for proposed development. There is a small amount of insitu archaeological material left on the site which was once a series of intact hearths. The site is located approximately 20 metres north of an existing 220 kv power-line easement. The site is assessed to be in poor condition. The site is also assessed to be of medium archaeological significance.	Perekertin	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Transitional riverine plain on the western margins of the Riverine Plain.
TL 7	TL 5	Artefacts, Mound, Mound Scatter, Oven, Oven Scatter and PAD	82	Hearth	7	Giles Hamm	6/09/2012	The site is a cluster of 13 intact earth mounds(on average approximately 20m in diameter and 1m in height), 16 mound scatters, a number of hearths and artefact scatters. The mounds are clustered around a swamp/lagoon feature which has not been subjected to intensive ploughing for wheat cropping. A water pipe and trench extends through the mounds providing some additional protection. Termite nest hearths are the most common within the site and stone artefacts are dominated by silcrete flakes. The site lies within a unploughed paddock which is located near a stand of Black Box trees and a slightly elevated swamp feature on a flat. The site is assessed to be in fair condition. The site is also assessed to be of high archaeological significance.	Perekertin	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Transitional riverine plain on the western margins of the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
TL 8		Isolated Artefact	1					The site is an Isolated Find located on a river terrace feature on the Murrumbidgee floodplain . A single silcrete flaked piece is lying exposed on a eroding scald surface. The site is located approximately 2 metres west of an existing fence-line and 1 metres east of an existing vehicelce track.. The site is assessed to be in poor condition. The site is also assessed to be of low archaeological significance.	Riverland	Floodplains with black box and/or river red gum	Southern Riverine Woodlands	Alluvial plains	Murray, Murrumbidgee, Edward and Wakool Rivers and their floodplains
TO 1	O BH 10	Isolated Artefact	1		0	Balazs Hansel	18/12/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 11	IB 8 - AA_S	Isolated Artefact	1		0	Nicolas Grguric	17/12/2014	The site is a single silcrete flake located in saltbush plains. The artefact class is common and well represented in the local and regional landscape. The site meets the criteria for low scientific significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 12	IB 8 - AA_S	Artefacts	94		0	Amanda Atkinson	17/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 13	IB 8 - AA_S	Isolated Artefact	1		0	Amanda Atkinson	17/12/2014	This site is an isolated stone artefact and dispersed hearth scatter. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 14	IB 8 - AA_S	Artefacts and Hearth	35	Hearth	2	Sharon Lane	17/12/2014	This site contains a number of intact hearths which offer research potential to help create a picture of the chronology of occupation in the project area.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 15	IB 8 - AA_S	Artefacts	151		0	Sharon Lane	17/12/2014	This site is an artefact scatter. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 16	IB 8 - AA_S	Artefacts	40		0	Amanda Atkinson	17/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 17	IB 8 - AA_S	Artefacts	10		0	Sharon Lane	17/12/2014	This site is an artefact scatter. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 18	IB 8 - S CD	Artefacts	25		0	Sharon Lane	17/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 19	IB 8 - S CD	Artefacts	6		0	Sharon Lane	17/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 2 / TO 20	IB 8 - S - CD	Artefacts and Hearth	403	Hearth	4	Balazs Hansel and Amanda Atkinson	18/12/2014	TO2/TO20 is a low density artefact scatter (n=403) with 1 deflated hearth feature with approximately 30 fragments located on the eastern side of a dune/lunette, extending towards a crest to the west. The scatter spreads from the crest of a lunette, down the slope to the east of the lunette and onto the scalded plains. Portions of the lunette are vegetated and do not have clear visibility. Artefacts were identified in wind deflated areas amongst blue bush/saltbush on residual soil. The stone artefact assemblage consists of silcrete, quartz chert and quartzite materials with artefact classes including retouched flakes, flakes and cores. Sufficient densities of artefacts exist at this site to conduct statistical analysis of the stone artefact assemblage. Residual soils are likely to be PADs.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 21	B BH 9	Isolated Artefact	1		0	Joe Borg/Bianca Petruzelli	17/12/2014	This site is an isolated stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 22 / TO 23	O BH 10	Artefacts and Hearth	4	Hearth	4	Balazs Hansel	17/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 24	IB 8 - AA - S	Artefacts and Hearth	10	Hearth	1	Sharon Lane	16/12/2014	This site is an low density dispersed stone artefact and hearth. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 25	IB 8 - AA - S	Isolated Artefact	1		0	Sharon Lane	16/12/2014	This site is an isolated stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 26	IB 8 - AA - S	Artefacts	2		0	Clair Davey	16/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 27	IB 8 - AA_S	Isolated Artefact	1		0	Amanda Atkinson	17/12/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 28	O BH 10	Artefacts	2		0	Balazs Hansel	17/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 29	O BH 10	Artefacts	2		0	Balazs Hansel	17/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 30 / TO 31	O BH 10	Artefacts	39		0	Balazs Hansel	17/12/2014	The site is a low density artefact scatter representing a visible portion of the low density, continuous and dispersed artefact scatter exposed within scalds and bare patches of soil in the scalded plains of the Rata system. It is common and well represented and many more can be expected in the project area and the wider region. The site is therefore considered to have low scientific value.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 32	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 33	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	This site is an isolated stone artefact. The object has no ability to inform us about the local past beyond what has already been recorded. The site meets the criteria for low significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
TO 34	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	This site is an isolated stone artefact. The object has no ability to inform us about the local past beyond what has already been recorded. The site meets the criteria for low significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 35	TT BH 7	Artefacts			0	Balazs Hansel	15/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 36	TT BH 7	Artefacts	6		0	Balazs Hansel	15/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 37	TT BH 7	Artefacts			0	Clare Anderson	15/12/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 38	TT BH 7	Artefacts	2		0	Clare Anderson	15/12/2014	2 artefact fragments in scalds adjacent to a larger scald in alluvial scalded plain. A lunette is present to the west. Occasional isolated knapping events but material is so weathered it is not diagnostic. Silcrete worm pebble also present.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 39	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	Vast exposure in alluvial scalded plain near oldman bush and drainage line.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 40	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	Isolated artefact located on a slight rise (<m) on a pan/scald in alluvial plain.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 41	TT BH 7	Artefacts			0	Clare Anderson	15/12/2014	Coarse grained silcrete AF, course grained cobble. 2 artefacts located in wash and erosion scalds near drainage channel with white bleached alluvial soils	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 42	TT BH 7	Artefacts	2		0	Clare Anderson	15/12/2014	Site is two stone artefacts located in a scald pan on a minor rise over a drainage channel	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TO 43	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	Wash and grazing tracks exposure in rise on alluvial plain in elevated terrain.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 44	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	One silcrete manuport, to weathered to make a call, approx. 80mm.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 45	TT BH 7	Isolated Artefact	1		0	Clare Anderson	15/12/2014	Silcrete distal flake	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 46	B BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	Isolated artefact located on a stock track.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 47	B BH 9	Artefacts	2		0	Balazs Hansel	17/12/2014	Scatter of 2 artefacts located in a slight depression.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 48	B BH 9	Isolated Artefact	1		0	Balazs Hansel	17/12/2014	Isolated find located on an exposed area. There are lots of animal burrows within the vicinity and theatre is affected by surface wash as well.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TO 49	IB 8 - AA - S	Artefacts	2		0	Nicolas Grguric	16/12/2014	Two stone artefacts in an area subject to episodic wash	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 10	T/BH11	Isolated Artefact	1		0	Balazs Hansel	19/12/2014	IF located on flat land along a deflated area.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 11	T/BH11	Isolated Artefact	1		0	Joe Borg	19/12/2014	An isolated stone artefact located on a sandplain.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 12	T/BH11	Isolated Artefact	1		0	Balazs Hansel	19/12/2014	IF on exposure caused by deflation and surface wash.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 13	T/BH11	Artefacts	2		0	Balazs Hansel	19/12/2014	Scatter of two approx 40m each other.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 14	T/BH11	Isolated Artefact	1		0	Joe Borg	19/12/2014	An isolated stone artefact.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 15	T/BH11	Isolated Artefact	1		0	Balazs Hansel	19/12/2014	IF LOCATED ON A VEHICLE TRACK.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 16	IB 5 - AA	Artefacts	9		0	Amanda Atkinson	20/12/2014	A small scatter of 9 stone artefacts.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
TT 24	Walking to next transect	Isolated Artefact	1		0	Amanda Atkinson	15/12/2014	Silcrete core located on an alluvial plain	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 25	IB 9 - CD	Isolated Artefact	1		0	Amanda Atkinson	15/12/2014	Smashed emu egg about 5m to the west of a piece of ochre (WP 1063)	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 26	IB 9 - CD	Artefacts	7		0	Sharon Lane	15/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 27	IB 9 - CD	Artefacts	12		0	Sharon Lane	15/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT 28	IB 9 - CD	Artefacts			0	Sharon Lane	15/12/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 29	IB 9 - CD	Artefacts	7		0	Sharon Lane	15/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 30	IB 9 - CD	Artefacts	29		0	Sharon Lane	15/12/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 31	IB 9 - CD	Artefacts	4		0	Sharon Lane	16/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
TT 32	IB 9 - CD	Artefacts	3		0	Sharon Lane	16/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 33	IB 9 - CD	Isolated Artefact	1		0	Amanda Atkinson	16/12/2014	This site is an isolated stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 34	IB 9 - CD	Artefacts	41		0	Sharon Lane	16/12/2014	This site may contain archaeological deposits both within and beyond the surveyed areas along the dune of the lake bed	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT 35	IB 9 - CD	Artefacts	2		0	Amanda Atkinson/ Clair Davey	16/12/2014	This site is an low density dispersed stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT 37	IB 9 - CD	Isolated Artefact	1		0	Sharon Lane	16/12/2014	This site is an isolated stone artefact. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 38 / TT 39	IB 9 - CD	Artefacts	4		0	Clair Davey	16/12/2014	This site is a low density artefact scatter. The site and artefact class are common and well represented in the project area and local region. The site meets the criteria for low significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
TT 9	Opportunistic walk from IB 9 - CD	Artefacts			0	Amanda Atkinson	15/12/2014	This site is a low density artefact scatter	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT AS 1	59	Artefacts and PAD	8		0	Clare Anderson	29/05/2013	Tin Tin Artefact Scatter 1 is an area of exposure within an eroding dune system along the eastern margins of an open depression. The site consists of eight stone artefacts which are eroding from the dune. Young box trees are present along the margins of the depression and in the dunes suggesting the presence of groundwater. Tin Tin Artefact Scatter is in close proximity to Tin Tin Artefact Scatter 2, Tin Tin Artefact Scatter 3 and a series of isolated finds. It is highly likely that further surface and subsurface artefacts are present within and on the margins of the depression.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT AS 2	59	Artefacts, Hearth and PAD	1	Hearth	1	Clare Anderson	29/05/2013	Tin Tin Artefact Scatter 2 is an area of exposure within an eroding dune system along the eastern margins of an open depression. The site consists of a silcrete flake and a calcrete hearth scatter. Young box trees are present along the margins of the depression and in the dunes suggesting the presence of groundwater. Tin Tin Artefact Scatter is in close proximity to Tin Tin Artefact Scatter 1, Tin Tin Artefact Scatter 3 and a series of isolated finds. It is highly likely that further surface and subsurface artefacts are present within and on the margins of the depression.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT AS 3	Tracks 59	Artefacts	2		0	Clare Anderson	29/05/2013	Tin Tin Artefact Scatter 3 is an area of exposure within an open depression. The site consists of a silcrete flake and a calcrete hearth scatter. Young box trees are present along the margins of the depression and in the dunes suggesting the presence of groundwater. Tin Tin Artefact Scatter 3 is in close proximity to Tin Tin Artefact Scatter 1, Tin Tin Artefact Scatter 2 and a series of isolated finds. It is highly likely that further surface artefacts are present within and on the margins of the depression.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT IF 4	Tracks 59	Isolated Artefact	1		0	Clare Anderson	29/05/2013	Tin Tin Isolated Find 4 is an area of exposure within an open depression. The site consists of a silcrete flake. Flake was outside of survey area	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
TT IF 5	Walk back to car	Isolated Artefact	1		0	Clare Anderson	29/05/2013	Tin Tin Isolated Find 5 consists of a silcrete flake noted when walking back to the car.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
TT IF 6	Walk back to car	Isolated Artefact	1		0	Clare Anderson	29/05/2013	Tin Tin Isolated Find 6 consists of a silcrete flake noted when walking back to the car.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
TT IF 7	Walk back to car	Isolated Artefact	1		0	Clare Anderson	29/05/2013	Tin Tin Isolated Find 7 consists of a silcrete flake noted when walking back to the car.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
TT IF 8	Walk back to car	Isolated Artefact	1		0	Clare Anderson	29/05/2013	Tin Tin Isolated Find 8 is an area of exposure within an open depression. The site consists of a silcrete flake. Flake observed when walking back to car	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 1	WBAC 58 - Option 1	Isolated Artefact	1		0	Clare Anderson	12/03/2014	A single isolated silcrete distal flake with step termination (24 mm x 21 mm x 7mm) located 12 m off an access track on a east-west running dune crest in a dunefield. Vegetation nearby included acacia, mulga, mallee and blackbox. Soaks and minor depressions present within 100 m.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
UD 10 / UD 11 / UD 13	GWRB Area 2 - 1	Artefacts	5		0	Clare Anderson	9/10/2014	UD 10 / UD 11 / UD 13 is a low density stone artefact scatter comprising 5 stone artefacts at four focal points (UD 10, UD 11 (E 716837, N 6202095), UD 13.1 (E 716868, N 6202120) and UD 13.2 (E 716867, N 6202119)) between 30 and 40 m apart on an alluvial plain. UD 12 is located 65 m to the south of the site. The site falls within the moderate risk layer and occasionally isolated and low density artefact scatters of low significance may be expected to occur in the landform.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 103	GWRB Area 4 - 4	Artefacts and Hearth	12	Hearth	2	Clare Anderson	16/10/2014	Site contains two intact hearths offering excellent dating opportunities in a small wash scald and drainag channel in a stand of box trees.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 104	GWRB Area 4 - 4	Artefacts and Hearth	2	Hearth	1	Clare Anderson	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 105	GWRB Area 4 - 4	Isolated Artefact	1		0	Georgia Roberts	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 106	GWRB Area 4 - 4	Possible Hearth	0	Hearth	1	Clare Anderson	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 107	GWRB Area 4 - 4	Artefacts	8		0	Clare Anderson	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 108	GWRB Area 4 - 4	Isolated Artefact	1		0	Clare Anderson	16/10/2014	Fragment of pelvis, rib, one of the wrist or ankle bone, rib body and a rib end and the morphological features on the rib end and the estragulus are inconsistent with human bone. And the size of the rib body is also inconsistent its human. Scatter of non human bone, burnt over 1.5m x 1.5m. There is a chert artefact with heavy platform preparation on the dorsal surface 2m from bone scatter. Ranges from white to blue (bone fragments)	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 109	GWRB Area 4 - 4	Artefacts	5		0	Clare Anderson	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 110	GWRB Area 4 - 4	Artefacts	5		0	Clare Anderson	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 111	GWRB Area 4 - 4	Artefacts	11		0	Clare Anderson	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 112	IB 6 - N - CD	Artefacts	17		0	Sharon Lane	12/12/2014	This site is a sparse scatter of artefacts lpcated in asubtle depression in the centre of which is a stock watering trough. The area is highly distubed by stock trampling it is also on the intersection of two vehicle tracks. The site is surrounded by a saltbush scalded plains It is not clear if the pan is natural or was created a sr result of disturbance and subsequent erosion. As in all these locations there is a high potential for further surface and subsurface Aboriginal objects to exist in undisturbed and unsurveyed areas.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 113	IB 6 - N - CD	Isolated Artefact	2		0	Sharon Lane	12/12/2014	This site is an isolated artefact located on flat land in a vegeated scalded plain. The area is curretly grazed. Another site was recorded nearby	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 114	IB 6 - N - CD	Isolated Artefact	1		0	Amanda Atkinson	13/12/2014	This site is an isolated stone artefact located on alluvial plains.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 115 / UD 119	IB 6 - N - CD	Artefacts and Hearth	11	Hearth	1	Sharon Lane	13/12/2014	UD 115 comprises a low densit artefact scatter and hearth located in an eroded scald or stock pad. The distribution of artefacts largely follows the extent of the eroded area with the visibility beyond the eroded areaTA scattered hearth was found on the northern portion of the site but did not appear to have any in situ material. Further surface and subsurface Aboriginal objects are likely in the surrounding less eroded plains beyond the surveyed area.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
UD 116	Walk between transects	Artefacts	62		0	Balazs Hansel	12/12/2014	Large scatter located in a heavily eroded,deflated natural drainage channel. The are has high level of disturbance due to grading, construction of multiple dams andartificial drainage Chanel.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 117	IB 6 - N - CD	Artefacts	7		0	Sharon Lane	13/12/2014	This site is a small low densy artefact scatter across a broad area on a flat sandplain. Disturbance from stock trampling and erosion are evident.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 118	IB 6 - N - CD	Artefacts	4		0	Sharon Lane	13/12/2014	A small low density site exposed on a vehicle track in saltbush plains. Visibility in the surrouding landscape around 50%. There is potential for further surface and subsurface Aboriginal objects in less exposed and intact residual soils.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 12	GWRB Area 2 - 1	Isolated Artefact	1		0	Georgia Roberts	9/10/2014	Isolated surface find	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 120	UD BH 6	Artefacts and Hearth	98	Hearth	2	Balazs Hansel	13/12/2014	Massive, dense artefact scatter located in a depression within a heavily eroding dune. Artefacts were found in large numbers within the entire depression, with the highest density in the N section. All diagnostic pieces were recorded in detail. Angular fragments only counted due to time safety constrains.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 121	UD BH 6	Artefacts	24		0	Balazs Hansel	13/12/2014	A scatter of 24 stone artefacts.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 122	UD BH 6	Artefacts and Hearth	27	Hearth	1	Balazs Hansel	13/12/2014	Moderately dense artefact scatter located in alluvial salt bush plain. Site contained retouched artefacts and an intact hearth with visible charcoal. The hearth should be considered PAD	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 123	IB 6 - N - CD	Artefacts and Hearth	17	Hearth	1	Amanda Atkinson	13/12/2014	A scatter of 17 stone artefacts located on a flat alluvial plain, displaying excellent site integrity.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 124	UD BH 6	Artefacts	2		0	Balazs Hansel	13/12/2014	Two stone artefacts.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 125	UD BH 6	Artefacts	34		0	Balazs Hansel	13/12/2014	Large art scatter located inside an elongated oval shaped (W-E) depression. The site is extending beyond the footprint twos N and S. Probably the entire landform unit is an archaeological site. The heavily eroded sandy bank of the depression contains artefacts as well on the S and N side.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
UD 126	Walk between transects	Isolated Artefact	2		0	Balazs Hansel	12/12/2014	Isolated find located approx 100m SE SITUATED ON erodedSURFACE.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 127	B / UD BH 5	Artefacts	1		0	Balazs Hansel	12/12/2014	Scatter of two art located on an easterly slope. The site is located on heavily disturbed land(grading, excavation, vehicle track)	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 128	Opportunistic walk near BH 5	Artefacts	2		0	Balazs Hansel	12/12/2014	Scatter of two art located on the boundary of easterly dune slope and drainage channel, situated on a heavily used vehicle track.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 129	BH 5	Isolated Artefact	1		0	Balazs Hansel	12/12/2014	Isolated find located on a stock track, situated on an E slope.surroundings of the site is covered by leaf litter affecting visibility.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
UD 130	TT / UD BH 8	Isolated Artefact	1		0	Balazs Hansel	16/12/2014	Isolated find located on an exposed area/slight depression/scald.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 131	GWRN 6	Isolated Artefact	1		0	Balazs Hansel	20/12/2014	IF located on flat land approx 500m W of Bourke & WillsRd.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 132	UD BH 12	Isolated Artefact	1		0	Balazs Hansel	20/12/2014	An isolated stone artefact.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 133	IB 6 - N - CD	Isolated Artefact	1		0	Nicolas Grguric	12/12/2014	An isolated stone artefact on an alluvial plain.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 134	IB 6 - N - CD	Isolated Artefact	1		0	Nicolas Grguric	12/12/2014	An isolated stone artefact on an alluvial plain.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 135	IB 6 - N - CD	Artefacts			0	Sharon Lane	12/12/2014	Unknown - no data	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 136	IB 6 - N - CD	Isolated Artefact and Hearth	1	Hearth	1	Nicolas Grguric	13/12/2014	An isolated artefact located on a bulldozed track.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 137	UD BH 6	Isolated Artefact	2		0	Balazs Hansel	13/12/2014	Isolated find on th SE slope of low sand dune, located on a highly eroded stock track.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 138	UD BH 6	Artefacts	13		0	Balazs Hansel	13/12/2014	Small art scatter located on the lower easterly slope of a N-S dune. Art were found around a heavily eroded and incised into the residual soil around the track.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 139	UD BH 12	Artefacts	6		0	Balazs Hansel	20/12/2014	Large, low density scatter inside a scald.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 14	GWRB Area 2 - 1	Isolated Artefact	1		0	Balazs Hansel	9/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 140	UD BH 12	Artefacts			0	Balazs Hansel	19/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 141	UD BH 11	Isolated Artefact	1		0	Balazs Hansel	19/12/2014	IF located on E slope of sand dune.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 142	Walk between transects	Isolated Artefact	1		0	Balazs Hansel	19/12/2014	IF located onE slope.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 143	UD BH 12	Isolated Artefact	1		0	Balazs Hansel	19/12/2014	IF located on flat land on exposed area.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 144	UD BH 11	Isolated Artefact	3		0	Balazs Hansel	19/12/2014	IF located on flat deflated land.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 145	UD BH 12	Artefacts	67		0	Balazs Hansel	19/12/2014	Large,low density scatter situated around a pronounced depression.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 15	GWRB Area 2 - 2	Isolated Artefact	1	Hearth	1	Clare Anderson	9/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 16	GWRB Area 2 - 2	Artefacts and Hearth	31	Hearth	3	Clare Anderson	9/10/2014	Site contains multiple potential, partially exposed and scattered burnt heat retainers and artefacts located on the slopes and crest of remnant or eroding parabolic dune or slope of a calcrete/sandy ridge. A site recording form for this site is yet to be located.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 17 / UD 18	GWRB Area 2 - 3	Artefacts and Hearth	28	Hearth	1	Clare Anderson	9/10/2014	UD 17 / UD 18 comprises 28 stone artefacts and a scattered hearth located on the slope and crest of a calcareous rise which slopes into a drainage line 120m west of the site. There is a remnant and eroding sand hill located 400 m to the west with a high density of artefacts and UD 16, an artefact scatter of 31 stone artefacts is located 150 m to the north on the same dune slope and crest. It is highly likely that further artefacts are present between UD 16 and UD 17/18 which were not identified due to the sampling strategy and it is likely that these two sites represent one continuous artefact scatter within the dune slope and crest landform. It is also highly likely that artefacts will increase with density with proximity to the sandhill.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 19	GWRB Area 2 - 3	Artefacts	2		0	Clare Anderson	9/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 2	WBAC 60 Option 1	Artefacts	3		0	Clare Anderson	12/03/2014	An artefact scatter located on dune and break of slope overlooking plains. Approximately 20 artefacts were observed on the road. Visibility of artefacts on road indicate subsurface deposit and high likelihood of further artefacts being present both on the road and off the road in the surrounding dunes. Artefacts observed include cores and flakes. Soaks present nearby. Further investigation and recording required to determine the extent of the site.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 20	GWRB Area 2 - 3	Artefacts	3		0	Nicolas Grguric	9/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 21	GWRB Area 2 - 3	Isolated Artefact	1		0	Balazs Hansel	9/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 22	GWRB Area 2 - 4	Artefacts	3		0	Nicolas Grguric	10/10/2014	Artefacts occur in pans and scoured drainage channels.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
UD 23	GWRB Area 2 - 4	Artefacts	7		0	Clare Anderson	10/10/2014	The site is located in a scald on a gentle sloping dune/calcareous gravel rise adjacent a drainage line	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 24	GWRB Area 2 - 4	Artefacts	8		0	Clare Anderson	10/10/2014	There is a low density artefact scatter along an exposed access track in on Upson Downs	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 25	GWRB Area 2 - 4	Artefacts	18		0	Nicolas Grguric	10/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 26	GWRB Area 2 - 4	Artefacts	9		0	Clare Anderson	10/10/2014	Artefacts were visible in a scald.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 27	GWRB Area 2 - 4	Artefacts	300		0	Clare Anderson	10/10/2014	UD 27 is a large moderate density site located on the break of slope and slopes of a sand hill adjacent alluvial drainage channels. Only a small 130 m by 30 m area was sampled due to time constraints but is highly likely that further unrecorded artefacts are present in the unsampled area and beyond the assessed boundaries of the site.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 28	GWRB Area 3 - 1	Artefacts	7		0	Clare Anderson	11/10/2014	Site located on an dune crest in the erosional scalds and natural bare soil overlooking an alluvial drainage channel of Box Creek. Further artefacts are likely to be present in residuals. There is core which may suggest a possible knapping event but due to postdepositional events the site is no longer intact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 29	GWRB Area 3 - 1	Artefacts	2		0	Georgia Roberts	11/10/2014	Approximately 50m from another artefact scatter. Whole dune likely to be a low density scatter.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 3	WBAC 60 Option 2	Isolated Artefact	1		0	Clare Anderson	12/03/2014	Single isolated artefact located on bleached soil adjacent a dam. Artefact is most likely not in situ as a result of the movement of soil from dam construction. 1 single silcrete distal flake (22 mm x 15 mm x 7 mm).	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 30	GWRB Area 3 - 1	Artefacts	2		0	Clare Anderson	11/10/2014	Artefacts are visible in a scald	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 31	GWRB Area 3 - 1	Isolated Artefact	1		0	Nicolas Grguric	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 32	GWRB Area 3 - 1	Artefacts	4		0	Clare Anderson	11/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 33	GWRB Area 3 - 1	Isolated Artefact	1		0	Nicolas Grguric	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 34	GWRB Area 3 - 1	Isolated Artefact	1		0	Nicolas Grguric	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 35	GWRB Area 3 - 1	Artefacts	2		0	Clare Anderson	11/10/2014	This site is a low density artefact scatter located on the slopes of a lunette.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 36	GWRB Area 3 - 1	Artefacts	5		0	Nicolas Grguric	11/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 37	GWRB Area 3 - 1	Isolated Artefact	1		0	Clare Anderson	11/10/2014	Silcrete prox flake 25 x 23 x 12	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 38	GWRB Area 3 - 1	Isolated Artefact	1		0	Nicolas Grguric	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 39	GWRB Area 3 - 1	Isolated Artefact	1		0	Clare Anderson	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 4	Opening gate	Isolated Artefact	1		0	Clare Anderson	12/03/2014	Single isolated complete silcrete flake (maximum dimension 40mm) located in the exposure created from vehicle and animal movement near paddock gate, noticed when opening gate Requires additional survey to determine whether further artefacts are present.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 40	GWRB Area 3 - 1	Isolated Artefact	1		0	Georgia Roberts	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 41	GWRB Area 3 - 1	Isolated Artefact	1		0	Clare Anderson	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 42	GWRB Area 3 - 2	Artefacts	3		0	Nicolas Grguric	11/10/2014	This site is located in a scald	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 43	GWRB Area 3 - 2	Artefacts	2		0	Clare Anderson	11/10/2014	Site located in a scald	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 44	GWRB Area 3 - 2	Isolated Artefact	1		0	Balazs Hansel	11/10/2014	Silcrete complete flake, indeterminate, step, 12, 8, 3	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 45	GWRB Area 3 - 2	Isolated Artefact	1		0	Nicolas Grguric	11/10/2014	The site was recorded at the base of a scoured drainage channel	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
UD 46 / UD 48 / UD 49	GWRB Area 3 - 2	Artefacts	10	Shell	0	Clare Anderson	11/10/2014	UD 46 / UD 48 / UD 49 is a low density artefact scatter of ten stone artefacts eroding downslope of a lunette crest. It consists of three locations UD 46 (2 artefacts, UD 48 (7 artefacts, E 713444 N 6205510) and UD 49 (1 artefact, E 713422 N 6205541). It is highly likely that further surface and subsurface artefacts are present in residual soils in the lunette.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 47	GWRB Area 3 - 2	Isolated Artefact	1		0	Clare Anderson	11/10/2014	This site include a core located on the slopes of a lunette, just below a track which runs along the crest of the lunette	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 5 / UD 8 / UD 7.1	GWRB Area 2 - 1	Artefacts	15		0	Georgia Roberts	8/10/2014	UD 5 / UD 8 / UD 7.1 is an artefact scatter containing 15 stone artefacts with three focale points (UD 5 (E 717528 N6202029, 12 artefacts), UD 7.1 (E 717506 N 6201972, 2 artefact), UD 8 (E 717478 N 6202016, 1 artefact).	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 50	GWRB Area 3 - 2	Artefacts	2		0	Clare Anderson	11/10/2014	One red weathered silcrete core with a ground platform and bipolar flaking, 2 negative flake scars with the longest flake scar 30mm. 40 mm x 30 mm x 25 mm	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 51	GWRB Area 3 - 2	Artefacts	76		0	Clare Anderson	11/10/2014	Low density artefact scatter at the crest of a lunette between a drainage line and a minor lake basin. The site consists of artefacts eroding from residual soils and artefacts visible on calds. A potential hearth was identified at the site though it was not clear whether this was of Aboriginal cultural origin or was the result of vegetation clearance during the apstroal grazing phase of the property. There is high potential for further Aboriginal objects to be present in the surrounding landform.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 52	GWRB Area 3 - 2	Artefacts	4		0	Balazs Hansel	11/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 53	GWRB Area 3 - 2	Artefacts	2		0	Nicolas Grguric	11/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 54	GWRB Area 3 - 2	Isolated Artefact	1		0	Balazs Hansel	11/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 55	GWRB Area 3 - 2	Artefacts	127		0	Georgia Roberts	11/10/2014	Site includes a muller fragment (GR Additional Notes)	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 6	GWRB Area 2 - 1	Isolated Artefact	1		0	Clare Anderson	8/10/2014	This site is a single isolated stone artefact	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 60	GWRB Area 3 - 3	Isolated Artefact	1		0	Clare Anderson	13/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 61	GWRB Area 3 - 3	Isolated Artefact	1		0	Clare Anderson	13/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 62 / UD 64 / UD 65 / UD 70 / UD 75	GWRB Area 3 - 3	Artefacts and Hearth	860	Hearth	1	Balazs Hansel	13/10/2014	UD 62 / UD 64 / UD 65 / UD 70 / UD 75 is a large low to moderate density artefact scatter with hearths and Potential Archaeological Deposit located on the eroded and vegetated slopes of the western shoreline of a relict lake basin. The relict basin is approximately 3.3km in length and 2 km in width. There is a small channel which feeds from a billabong into a dam to the south of the site. The sampling strategy for the site was to record 300 artefacts within a 100 m transect at both the northern (Sample Area UD 62, UD 64, UD 65) and southern edge (Sample Areas UD 70, UD 75) of the proposed disturbance footprint. A count was then made of the remaining flagged artefacts within the transect. In total 600 stone artefacts were recorded and an additional 280 artefacts were counted. Artefact densities ranged from less than 0 artefacts per m2 to 5 artefacts per m2. Western end of recorded site contained a higher proportion of retouched flakes and specific tool types with burden adds, core tools etc. the re seems to have been. Production of burrens appears to have occurred in this area as a number of slightly convex flakes without retouch were noted in addition to complete burrens. Two hearths were identified, one of which offered excellent dating potential and urgent management due to its increasing exposure and the presence of burnt bone and artefacts. The second hearth was disturbed but was a reasonable candidate for testing due to the presence of burnt emu shell. It is highly likely that further unrecorded artefacts are present within the site boundary, beyond the sampled area and also beyond the boundaries of the recorded site. Artefacts were present eroding from residual soils and also visible on the stabilised dune and residuals soils on the western margin of the site. The vegetated areas offer good opportunity to test for Potential Archaeological Deposits.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 63	GWRB Area 3 - 3	Isolated Artefact	1		0	Clare Anderson	13/10/2014	Exhausted silcrete core located in a n extensive scald or pan neAr a vehicle track niche leads to. Tnk. Core is rotated andmultiplatform. Yet still has cortex on one face 25 x 23 x 20. Lfs10' 5 ns	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 66	GWRB Area 3 - 3	Artefacts	4		0	Georgia Roberts	13/10/2014		Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
UD 67	GWRB Area 3 - 5	Isolated Artefact	1	PAD	0	Clare Anderson	13/10/2014	Highly weathered silcrete, diagnostic features no longer visible but appears to have scarring in dorsal surfce. The site has been disturbed by rabbit burrowing.	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
UD 68	GWRB Area 3 - 5	Artefacts	3		0	Nicolas Grguric	13/10/2014		Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
UD 69	GWRB Area 3 - 5	Isolated Artefact	1		0	Georgia Roberts	13/10/2014	This site is a single isolated stone artefact	Gulthul	Sandplains and dunefields with mallee	Mallee	Sandplain	Extensive plain between the Darling and Murrumbidgee Rivers.
UD 7	GWRB Area 2 - 1	Artefacts	4		0	Clare Anderson	8/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 71	GWRB Area 3 - 4	Isolated Artefact	1		0	Clare Anderson	13/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
UD 72	GWRB Area 3 - 4	Artefacts	2		0	Balazs Hansel	13/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 73	GWRB Area 3 - 4	Artefacts and Hearth	244	Hearth	1	Nicolas Grguric	13/10/2014	Artefacts occur on a series of scalds and eroded exposures.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 74	GWRB Area 3 - 5	Isolated Artefact	1		0	Clare Anderson	14/10/2014	Silcrete anglur frgment	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 76	GWRB Area 3 - 6	Artefacts	2		0	Clare Anderson	14/10/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 77	GWRB Area 3 - 6	Artefacts	461		0	Clare Anderson	14/10/2014	The site is a large artefact scatter located within a lake basin. A large multiplatform core, located E 712013 N6205488, measuring 150x 80x 75 is located Silcrete mpc, grey with orange cortex. 15 complete scars. Longest scar 87mm. Possibly transported long distance from source as a ready source of raw material. Likely in situ owing to its mass, though was 75% buried when found. This core appears to be the origin of the bulk of the artefacts located within the site. There are a high number of backed geometric microliths and microlith blanks suggesting this was a specific knapping event for the production of backed blades. Artefact count (120 15 48 98 x 5 80 100)	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 78	GWRB Area 3 - 7	Isolated Artefact	1		0	Clare Anderson	14/10/2014	Same material and production and 77" silcrete geometric microlith 20 x 15 x7	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 79	GWRB Area 3 - 7	Isolated Artefact	1		0	Nicolas Grguric	14/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 80	GWRB Area 3 - 7	Isolated Artefact	1		0	Clare Anderson	14/10/2014	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
UD 88	GWRB Area 4 - 1	Isolated Artefact	1		0	Clare Anderson	15/10/2014	This site is a single isolated stone artefact	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
UD 89	GWRB Area 4 - 1	Isolated Artefact	1		0	Clare Anderson	15/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 9	GWRB Area 2 - 1	Isolated Artefact	1		0	Nicolas Grguric	9/10/2014	This site is a single isolated stone artefact	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 90	GWRB Area 4 - 2	Isolated Artefact	1		0	Clare Anderson	15/10/2014	This site is a single isolated stone artefact	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 91	GWRB Area 4 - 2	Artefacts	2		0	Clare Anderson	15/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 92 / UD 93 / UD 100 / UD 101 / UD 102	GWRB Area 4 - 3	Artefacts and Hearth	153	Hearth	4	Clare Anderson	16/10/2014	UD 92 / UD 93/ UD 100/ UD 101 / UD 102 is an artefact scatter with four hearths located across the base, slopes, crest and blow outs on a series of dunes and sand hills in an alluvial plain on the Upson Downs property. Five sample areas were recorded in the project within a roughly 100 m wide transect. 153 stone artefacts and four hearths were recorded within the sample areas and the artefacts were observed to extend beyond the sampled area and beyond the project area. There is a higher ratio of grinding pieces and fragments when compared with other sites recorded in the project area, suggesting that specific activities occurred within the site.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 94	GWRB Area 4 - 3	Isolated Artefact	1		0	Clare Anderson	16/10/2014	Single Isolatesilcrete flake with a flake, longitudinal split platform an a hinge termination,m23 x 23 x5	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 95	GWRB Area 4 - 3	Artefacts	4		0	Georgia Roberts	16/10/2014		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 96	GWRB Area 4 - 3	Hearth	0	Hearth	2	Nicolas Grguric	16/10/2014	Approx 30 heat ret visible. Mostly buried but quite discrete and moderate excavation potential. No artefacts seen in immed vicinity	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 97	GWRB Area 4 - 3	Hearth	0	Hearth	1	Nicolas Grguric	16/10/2014	On edge of a washed out depression possible soak. Large and mainly intact with several heat retainers eroded out and down towards depression. No artefacts seen in immed vicinity. Approx 30 vis heat retainers.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 98	GWRB Area 4 - 3	Isolated Artefact	1		0	Clare Anderson	16/10/2014	Burnt heat retainers, possible hearth material or just decayed, hardened remnant box trees nearby. Site is an Isolatesilcrete bipolar flake with rushed platform and termination30 x 35 x 4.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
UD 99	GWRB Area 4 - 3	Isolated Artefact	1		0	Nicolas Grguric	16/10/2014	This site is a single isolated stone artefact	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
UD81 / UD82 / UD83 / UD84 / UD85 / UD86 / UD87	GWRB Area 4 - 1	Artefacts and Hearth	122	Hearth	3	Clare Anderson	15/10/2014	UD 81 / UD 82 / UD 83 / UD 84 / UD 85 / UD 86 / UD 87 is a low to moderate density artefact scatter with three hearths located at the base and within a sandhill located in an alluvial plain. Artefacts are visible at the base of the sandhill, exposed in dune blow-out on the slopes and crest of the sandhill. Three hearths are located at the base of the sandhill near a stand of box trees. Another area of hardened sediment with a small patch (20 cm x 20 cm) off ashy sediment was located at the eastern end of the sandhill. Seven sample locations were recorded within the site, broadly defined by transitions in the landform and artefact clustering. UD 81 (E 715650 N6208103, 17 artefacts, 3 hearths) was located at the western base in a wash exposure by a stand of box trees. UD 82 (E715764 N6208116, 17 artefacts) comprised the slopes of the sandhill. UD 83 (E 715856 N 6208097) comprised 20 stone artefacts in a blow out at the crest of the sandhill. UD 84 (E 715 917 N 6208151, 2 artefacts), UD 86 (E 715889 N 6208073, 3 artefacts), UD 87 (E715893 N6208115, 1 artefact) are located slightly downslope of UD 83 in blowout and wash exposures. UD 85 (63 artefacts) is located east of UD 84, UD 86 and UD 87 and comprises a series of gullies, wash and blow out exposures across the sandhill. At GPS point 899 hardened sediment and burnt bone fragments of less than 1 cm in size were observed. There were also a few burnt heat retainers scattered but not enough to identify a hearth. This location was in a wash and intact sediment around it may warrant further investigation. In some parts of the sample area calcareous bedrock was visible. Artefact densities range from less than 1 artefact per m2 to 4 artefacts per m2. A range of raw material was used for stone artefacts at the site including rhyolite. Adzes and two white silcrete/fine grained quartzite square scrapers/adzes were observed in the site, one at E716105 N6208176. A It is highly likely that further unrecorded surface and subsurface artefacts are present both within the sampled areas and the site boundaries. As a result, the overall site boundaries have been assessed as the sandhill, though the entirety of the sandhill was not surveyed or subject to recording.	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
W 1	Walking between transects	Isolated Artefact	1		0	Clair Davey	18/12/2014	An isolated stone artefacts by a fenceline.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
W 10	O BH 10 / W BH 10	Artefacts	2		0	Balazs Hansel	18/12/2014	Scatter of nine art located on stock tracks and eroded patches scattered around a large area.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 11	O BH 10 / W BH 10	Artefacts	6		0	Balazs Hansel	18/12/2014	Scatter of 6 art dispersed in a large area.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 12	O BH 10 / W BH 10	Artefacts	26		0	Balazs Hansel	18/12/2014	Low density scatter covering a large area with small patches of artefact. The site is located on the E slope of an extensive sand dune and extends beyond both boundaries. Possibly the site continues twds W and connects wit site WAA2. Art were found on deflated surfaces and stock tracks. Residual soil is remnant around salt/blue bush.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 2	IB 8 - Wintong	Artefacts and Hearth	250	Hearth	5	Sharon Lane	18/12/2014	W2 is a moderate to low density artefact scatter (n~250) situated on and extending up slope and over a dune. Only the visible portions of the site were recorded; and artefacts are considered to be continuously dispersed throughout the scalds and bare patches of soils in the Rata system. The surrounding dune systems may be PADs. Within the site, 11 hearth features were identified; all containing material suitable for dating. Sufficient densities of artefacts exist at this group of sites to conduct statistical analysis of the stone artefact assemblage	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 3	O BH 10 / W BH 10	Artefacts and Hearth	49	Hearth	1	Balazs Hansel	18/12/2014	A large crescent shape scald and a smaller oval shaped just twds S. Fairly large, low density scatter located on flat land, situated around two scald depressions. Artefacts were mostly found inside the scalds and towards W with an even less dense background scatter. The site is extending beyond the boundary twds N.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 4	O BH 10 / W BH 10	Artefacts	2		0	Balazs Hansel	18/12/2014	Small scatter of two art located on a wind deflated area along a stock track. Art located on stock track/wind deflation. Residual souls in patches stabilised by salt and blue bush.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 5	O BH 10 / W BH 10	Artefacts	3		0	Balazs Hansel	18/12/2014	Small scatter of three art located just W of as ale around a wind deflated area.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 6	O BH 10 / W BH 10	Isolated Artefact	1		0	Balazs Hansel	18/12/2014	This site is an isolated silcrete flake located within a sandplain flat. There is no visible temporary water.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 7	O BH 10 / W BH 10	Isolated Artefact	1		0	Balazs Hansel	18/12/2014	An isolated stone artefact on a sandplain.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 8	O BH 10 / W BH 10	Artefacts			0	Balazs Hansel	18/12/2014		Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
W 9	O BH 10 / W BH 10	Artefacts	9		0	Balazs Hansel	18/12/2014	Low density scatter located in and E of a scald. Eroded exposed are with sparse vegetation on the E end and deflated scald on the W end.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 1	Tw 1	Artefacts, Hearth, and PAD	125	Hearth	1	Giles Hamm	30/07/2012	The site is an Artefact Scatter located on a large clay pan containing 125 artefacts principally made from silcrete. The site also contains a series of Potential Archaeological Deposits and Hearths. The site is assessed to be in fair to poor condition. The site is assessed to be of moderate archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 10	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located on the edge of a medium sized clay pan. The artefact is a Broken Flake distal made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 100	BHM3	Isolated Artefact	1		0	Clare Anderson	26/06/2013	WB 100 was identified during a due diligence assessment. . WB 100 is an isolated stone artefact - a broken silcrete flake, 10mm maximum dimension.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 101	BHM3	Isolated Artefact	1		0	Clare Anderson	26/06/2013	WB 101 was identified during a due diligence assessment. . WB 101 is an isolated stone artefact - a broken silcrete flake with a maximum dimension 20 mm	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 102	BHM3	Artefacts and PAD	7		0	Clare Anderson	26/06/2013	WB 102 is located in a series of exposures on a slight rise in the overall landscape looking towards an open depression with water. Artefacts were observed eroding from residual soils and potential archaeological deposit is present. In addition to the recorded stone artefacts, a flaking debitage was also present.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 105	403 / Gravel Pit No.2	Isolated Artefact	1		0	Clare Anderson	24/10/2013	West Balranald 105 is a silcrete complete flake (36mm x 25mm x 10mm) located in a small exposure roughly east of WB 106. It is possible that further stone artefacts may be present in residual soils in the landscape.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 106								West Balranald 106 (previously known as Karra AS 1) consists of a silcrete complete flake, a silcrete retouched flake and dispersed calcrete heat retainers within a small scald. Residual soils approximately 10-40cm in depth extend approximately 80m east and west and 40m south of the visible artefacts. It is anticipated that further stone artefacts may be present in these residual soils and in the surrounding landscape.					
WB 107	403 / Gravel Pit No.2	Artefacts	2		0	Clare Anderson	14/10/2013		Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 107	GWRN 1	Artefacts and Hearth	115	Hearth	4	Clare Anderson	24/10/2013	WB107 is a low to moderate density artefact scatter (n=115) with 4 deflated hearth features located on a dune overlooking a relict lake and creek system. The frequency of artefacts located near eroding sediments within the pan suggests it is highly probable that further artefacts of moderate density exist within the site boundary. The stone artefact assemblage consists of silcrete, quartz, quartzite, and rhyolite materials with artefact classes including broken grinding stone fragments, retouched flakes, flakes, cores, anvils and hammerstones. Sufficient densities of artefacts exist at this site to conduct statistical analysis of the stone artefact assemblage. Residual soils and rills indicate soil deposits exceeding 40 cm are likely to be PADs.					
WB 108	GWRN 7	Isolated Artefact	1		0	Clare Anderson	27/10/2013	This site is a single isolated stone artefact	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 109	GWRN 7	Isolated Artefact	1		0	Clare Anderson	27/10/2013	This site is a single isolated stone artefact	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 11	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located in the middle of a large clay pan . The artefact is a Broken Flake distal made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 110	GWRN 9	Isolated Artefact	1		0	Clare Anderson	27/10/2013	This site is a single isolated stone artefact	Hatfield	Undulating sandplains with bluebush	Belah and Bluebush	Sandplain	Extensive undulating plains with bluebush
WB 111	KG 8	Isolated Artefact	1		0	Phil Roberts and Clare Anderson	31/10/2013	This site is a single isolated stone artefact	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 112	Opportunistic walk	Isolated Artefact	1		0	Phil Roberts and Clare Anderson	31/10/2013	This site is a single isolated stone artefact	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 113	BHM3	Artefacts	10		0	Jamie Reeves	0/0/2013		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 114	BHM3	Artefacts	7		0	Jamie Reeves	0/0/2013		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 115	BHM3	Isolated Artefact	1		0	Jamie Reeves	0/0/2013		Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 117	Met (x) 7	Isolated Artefact	1		0	Clare Anderson	12/03/2014	A silcrete complete flake with flaked platform and feather termination (22 mm x 32 mm x 4 mm) located on a bare patch of ground in bluebush plain. The area it was located in was assessed to have high potential for further Aboriginal objects to be present due to the presence of a continuous low density artefact scatter and frequent hearth scatters previously identified (sites West Balranald 42, West Balranald 46 and West Balranald 118).	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 118	Met (x) 7	Isolated Artefact	1		0	Clare Anderson	12/03/2014	A silcrete complete flake with a crushed platform and a feather termination located in a bare patch of soil west of an access track which runs north-south of the primary access track to the Karra homestead from Burke and Wills Road. The area surrounding WB 118 is considered to have high potential for further artefacts to be present due to the proximity of other known sites such as West Balranald 42, West Balranald 46 and West Balranald 117.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 12	Tw 1	Artefacts	2		0	Giles Hamm	30/07/2012	The site is an Artefact Scatter located on the edge of a small clay pan. Site is located 50 m from WB 11. There are 2 artefacts within the scatter. They are made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 13	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located in the middle of a large clay pan . The artefact is a Broken Flake distal made from chert. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 14	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located in the edge of a residual not far from WB 13 in a large clay pan . The artefact is a Multi-purpose tool made from quartzite used as a grindstone. The site is assessed to be in good condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 15	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located on a slight ridge not far from WB 16 near a large clay pan . The artefact is a silcrete flake . The site is assessed to be in good condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 16	Tw 1	Artefacts	3		0	Giles Hamm	30/07/2012	The site is an Artefact Scatter located on a slight ridge feature above a wetland. Site is located 50 m north of WB 15. There are 2 artefacts within the scatter. They are made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 17	Tw 1	Artefacts	2		0	Giles Hamm	30/07/2012	The site is an Artefact Scatter located in the middle of a clay pan. Site is located 50 m from WB 16. There are 2 artefacts within the scatter. They are made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 18	Tw 2	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is an Isolated Find located in large clay pan eroding from a residual feature. The artefact is a Broken Flake distal made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance. .	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 19	Tw 2	Artefacts and PAD	8		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is an Artefact Scatter located in the middle of a medium sized clay pan. Site is located in the north-west corner of T2. There are 8 artefacts within the scatter. They are all made from silcrete. There is also a Potential Archaeological Deposit located within the site. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 2	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located on the edge of a small clay pan. It is located within 50 m of WB 1. The artefact is a Broken Flake Medial made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 20	Tw 2	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is an Isolated Find located on the edge of a large clay pan near the corner of T2. The artefact is a Complete Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 21	Tw 2	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is an Isolated Find located on the edge of a large clay pan near the south-western corner of T2. The artefact is a Broken Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 22	Tw 2	Artefacts and PAD	5		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is an Artefact Scatter and Potential Archaeological Deposit located on the southern edge of a large clay pan. There are 5 artefacts within the scatter. They are all made from silcrete. The site is assessed to be in fair condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 23	Tw 2	Artefacts and PAD	4		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is located on the south-western end of Transect 2. The site is an Artefact Scatter and Potential Archaeological Deposit located on the edge of a small clay pan. There are 4 artefacts within the scatter. They are all made from silcrete. The site is assessed to be in fair condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 24	Tw 2	Artefacts and PAD	5		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is located on the south-western end of Transect 2. The site is an Artefact Scatter and Potential Archaeological Deposit located on the edge of a large clay pan. There are 5 artefacts within the scatter. They are all made from chert and silcrete. The site is assessed to be in good condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 25	Tw 2	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is an Isolated Find located on the edge of a large clay pan near the north -western corner of T2. The artefact is a Complete Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 26	Tw 2	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	2/08/2012	The site is an Isolated Find located on the edge of a medium sized clay pan near the north-eastern corner of T2. The artefact is a Complete Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 27	Tw 4	Artefacts, Hearth, and PAD	186	Hearth	1	Giles Hamm and Clare Anderson	8/08/2012	The site is located on the south-western end of Transect 2. The site is an Artefact Scatter and Potential Archaeological Deposit located on the edge of a large clay pan. There are eroded hearths within the clay pan. There are also 186 artefacts within the scatter. They are all made principally from silcrete. The site is assessed to be in good condition. The site is assessed to be of high archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 28	Tw 3	Artefacts and PAD	81		0	Giles Hamm	6/08/2012	The site is located within a clay pan as part of Transect 3. The site is an Artefact Scatter and Potential Archaeological Deposit located on the edge and within a large clay pan. There are also 81 artefacts within the scatter. They are all made principally from silcrete. The site is assessed to be in good condition. The site is assessed to be of medium archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 29	Tw 5	Artefacts and Hearth	2	Hearth	1	Giles Hamm	9/08/2012	The site is located within a wetland /swamp feature as part of Transect 5. The site is an Artefact Scatter, Hearth, Hearth Scatter and Potential Archaeological Deposit located on the edge of a swamp. There are also 2 artefacts within the scatter. They are all made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance. T	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 3	Tw 1	Artefacts, Hearth and PAD	28		0	Giles Hamm	30/07/2012	The site is an Artefact Scatter located on the edge of a small clay pan. It is located within 100 m of WB 1. There are 28 artefacts within the scatter. They are made principally from silcrete. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 30	Tw 5	Isolated Artefact and Hearth	1	Hearth	1	Giles Hamm	9/08/2012	The site is an Isolated Find located on the edge of a swamp feature near the north-western corner of T5. The artefact is a Flaked Piece made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 31	Tw 5	Isolated Artefact	1		0	Giles Hamm	9/08/2012	The site is an Isolated Find located on the edge of an access track which runs from the road to Karra and a large pan adjacent an open depression with water. The artefact is a Flaked tool with focal platform step termination, 50% retouch L 30 W 35 T 8. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 32	Tw 5	Isolated Artefact, Hearth, and PAD	1	Hearth	2	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is an Hearth Scatter and Potential Archaeological Deposit located near a swamp feature. There are also a single artefact within the hearth scatter. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 33	Tw 5	Hearth and PAD	0	Hearth	1	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is an Hearth Scatter and Potential Archaeological Deposit located near a swamp feature. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 34	Tw 5	Hearth	0	Hearth	1	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is an Hearth Scatter and Potential Archaeological Deposit located in a clay pan. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 35	Tw 5	Hearth and PAD	0	Hearth	1	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is a series of Hearth Scatters (termite nest material) and Potential Archaeological Deposit located near a swamp margin. The site is assessed to be in fair condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 36	Tw 5	Hearth	0	Hearth	1	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is an in situ hearth (termite nest material) and Potential Archaeological Deposit located near a swamp margin. The site is assessed to be in fair condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 37	Tw 5	Artefacts and Hearth	2	Hearth	1	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is an Artefact Scatter and Hearth Scatter (termite nest material) and Potential Archaeological Deposit located near a swamp margin. There are two artefacts both made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 38	Tw 5	Hearth and PAD	0	Hearth	1	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is a Hearth Scatter (termite nest material) and Potential Archaeological Deposit located near a swamp margin . The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 39	Tw 5	Artefacts	2		0	Giles Hamm	9/08/2012	The site is located near a swamp /wetland feature as part of Transect 5. The site is an Artefact Scatter near a swamp margin . Two silcrete artefacts have been recorded. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 4	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located on the edge of a large clay pan. The artefact is a Broken Flake Proximal made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 40	Tw 6	Artefacts, Hearth, Scarred Tree and PAD	1030	Hearth	13	Giles Hamm and Liz Foley	23/08/2012	The site is a large based campsite/nodal occupation site and is part of Transects 6,13,& 20. The site is an Artefact Scatter, Hearth Scatter, Potential Archaeological Deposit, Scarred Tree and Hearths (termite nest and calcrete: 15 in all) . The site has a total of 1030 artefacts (but this is likely to be grossly underestimated). The site is located on the western margin of Muckee Lake between a series of clay pans and a swamp margin . The site is assessed to be in fair condition. The site is assessed to be of high archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 41	Tw 12	Artefacts, Hearth and PAD	187	Hearth	1	Giles Hamm	10/08/2012	The site is a large occupation site and is part of Transect 12. The site is an Artefact Scatter, Hearth Scatter, Potential Archaeological Deposit, and Hearths (termite nest and calcrete:) . The site has 57 artefacts. The site is located on a large clay pan near the western margin of Muckee Lake between a series of clay pans and a swamp margin . The site is assessed to be in fair condition. The site is assessed to be of medium archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 42	Tw 9	Artefacts, Hearth, and PAD	117	Hearth	4	Giles Hamm and Liz Foley	12/09/2012	The site is a large occupation site and is part of Transect 7 & 9. The site is an Artefact Scatter, Hearth Scatter, Potential Archaeological Deposit, and Hearths (termite nest and calcrete) . The site has 117 artefacts. The site is located on a elevated terrace above a swamp features . The site is assessed to be in fair condition. The site is assessed to be of high archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 43	Tw 14	Artefacts, Hearth and PAD	121	Hearth	1	Giles Hann and Liz Foley	13/09/2012	The site is a large occupation site and is part of Transect 14. The site is an Artefact Scatter, Hearth Scatter, Potential Archaeological Deposit. The site is located on a large clay pan . It contains 121 artefacts. The site is assessed to be in fair condition. The site is assessed to be of medium archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 44	Tw 11	Artefacts, Hearth and PAD	41	Hearth	1	Giles Hamm and Shaun Adams	9/08/2012	The site is a large occupation site and is part of Transect 11. The site is an Artefact Scatter, Hearth Scatter, Potential Archaeological Deposit. The site is located on a large clay pan . It contains 41 artefacts. The site is assessed to be in fair condition. The site is assessed to be of medium archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 45	Tw 10	Artefacts, Hearth and PAD	83	Hearth	1	Giles Hamm and Amanda Atkinson	8/08/2012	The site is a large occupation site and is part of Transect 10. The site is an Artefact Scatter, Hearth Scatter, Potential Archaeological Deposit. The site is located on a large clay pan . It contains 83 artefacts. The site is assessed to be in fair condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 46	Tw 16	Artefacts, Hearth, and PAD	4	Hearth	3	Giles Hamm and Shaun Adams	17/09/2012	The site is a open occupation site connected to WB 42 and is part of Transect 16. The site contains 3 in situ Hearths, Hearth Scatter, Artefact Scatter Potential Archaeological Deposit. The site is located on the margins of a swamp . It contains 4 artefacts. The site is assessed to be in fair condition. The site is assessed to be of high archaeological significance. Hearth 1 722889 6190630, Hearth 2 722870 6190589 , Hearth 3 722864 6190586	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 47	Tw 18	Artefacts and PAD	6		0	Giles Hamm and Amanda Atkinson	25/09/2012	The site is a small Artefact Scatter located within Mallee dune field . The site contains 6 artefacts all made from silcrete. The site is located on the margins of a vehicle track. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance. T	Condoupe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
WB 48	Tw 16	Isolated Artefact	1		0	Giles Hamm and Shaun Adams	17/09/2012	The site is an Isolated Find located on the edge of a swamp feature within Transect T 16. The artefact is a Flaked Piece made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 49	Tw 16	Hearth	0	Hearth	1	Giles Hamm and Shaun Adams	17/09/2012	The site is a small Hearth Scatter probably connected to WB 46 and WB 42 and is part of Transect 16. The site is located on the margins of a swamp . It contains no artefacts. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 5	Tw 1	Artefacts	2		0	Giles Hamm	30/07/2012	The site is an Artefact Scatter located on the edge of a small clay pan. It is located 200 m north of WB 1. There are 2 artefacts within the scatter. They are made principally from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 50	Tw 16	Hearth	0	Hearth	1	Giles Hamm and Shaun Adams	17/09/2012	The site is a small Hearth Scatter probably connected to WB 46 and WB 42 and is part of Transect 16. The site is located on the margins of a swamp . It contains no artefacts. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 51	Tw 16	Hearth, and PAD	0	Hearth	1	Giles Hamm and Shaun Adams	17/09/2012	The site is a small Hearth Scatter and in-situ Hearth with Potential Archaeological Deposit probably connected to WB 46 and WB 42 and is part of Transect 16. The site is located on the margins of a swamp . It contains no artefacts. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 52	Tw 16	Hearth	0	Hearth	1	Giles Hamm and Shaun Adams	17/09/2012	The site is a small Hearth Scatter and in-situ Hearth with Potential Archaeological Deposit probably connected to WB 46 and WB 42 and is part of Transect 16. The site is located on the margins of a swamp . It contains no artefacts. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 53	Tw 16	Isolated Artefact	1		0	Giles Hamm and Shaun Adams	17/09/2012	The site is an Isolated Find probably connected to WB 46 and WB 42 and is part of Transect 16. The site is located on the margins of a swamp . It contains a Complete Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 54	Tw 15	Isolated Artefact	1		0	Giles Hamm and Shaun Adams	13/09/2012	The site is an Isolated Find probably connected to Transect 15. The site is located on the margins of a clay pan . It contains a Broken Flake made from silcrete. The site is assessed to be in fair condition. The site is assessed to be of low archaeological significance.	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 55	Tw 10	Artefacts and PAD	3		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is a small occupation site and is part of Transect 10. The site is an Artefact Scatter and Potential Archaeological Deposit. The site is located on a large clay pan . It contains 3 artefacts all made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 56	Tw 16	Isolated Artefact	1		0	Giles Hamm	17/09/2012	The site is an Isolated Find probably connected to WB 46 and WB 42 and is part of Transect 16. The site is located on the margins of a swamp . It contains a Complete Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance. The site will be impacted by the proposed Balranald Mineral Sands Project.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 57	Tw 10	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is an Isolated Find probably connected to WB 45 and is part of Transect 10. The site is located on the margins of a residual within a large clay pan. It contains a Broken Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 58	Tw 10	Artefacts	7		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is a small occupation site and is part of Transect 10. The site is an Artefact Scatter. The site is located on a large clay pan . It contains 7 artefacts all made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 59	Tw 10	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is an Isolated Find probably connected to WB 45 and is part of Transect 10. The site is located on the margins of a residual within a large clay pan. It contains a Complete Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 6	Tw 1	Isolated Artefact	1		0	Giles Hamm	30/07/2012	The site is an Isolated Find located on the edge of a large clay pan. The artefact is a Broken Flake Proximal made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 60	Tw 10	Artefacts and PAD	2		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is a small occupation site and is part of Transect 10. The site is an Artefact Scatter and Potential Archaeological Deposit. The site is located on a large clay pan . It contains 2 artefacts all made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 61	Tw 10	Isolated Artefact	1		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is an Isolated Find probably connected to WB 60 and is part of Transect 10. The site is located on the margins of a residual within a large clay pan . It contains a Broken Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 62	Tw 10	Artefacts	3		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is a small occupation site and is part of Transect 10. The site is an Artefact Scatter. The site is located on a large clay pan . It contains 3 artefacts all made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 63	Tw 17	Artefacts, Hearth, and PAD	85	Hearth	1	Giles Hamm and Shaun Adams	17/09/2012	The site is a large occupation site and is part of Transect 17. The site contains an Artefact Scatter, a number of Hearths, Hearth Scatters and Potential Archaeological Deposit. The site is located on the edge of swamp feature . It contains 85 artefacts a majority made from silcrete. The site is assessed to be in fair condition. The site is assessed to be of high archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 64	Tw 10	Isolated Artefact and PAD	1		0	Giles Hamm and Amanda Atkinson	8/08/2012	The site is an Isolated Find and Potential Archaeological Deposit probably connected to WB 60 and is part of Transect 10. The site is located on the margins of a residual within a large clay pan . It contains a Broken Flake made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance. T	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 65	Tw 20	Artefacts, Hearth and PAD	104	Hearth	1	Giles Hamm and Shaun Adams	12/09/2012	The site is a large occupation site and is part of Transect 13. The site contains an Artefact Scatter, a number of Hearths, Hearth Scatters and Potential Archaeological Deposit. The site is located on the edge of swamp feature/clay pan . It contains 104 artefacts a majority made from silcrete. The site is assessed to be in fair condition. The site is assessed to be of medium archaeological significance.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 66	WB 66 Site Recording only	Artefacts, Hearth and PAD	13	Hearth	1	Giles Hamm and Shaun Adams	28/09/2012	The site is a large occupation site located on the Eastern Lunette of Muckee Lake . The site contains an Artefact Scatter, a number of Hearth Scatters and Potential Archaeological Deposit. The site is located on the edge of swamp feature/clay pan . It contains 13 artefacts a majority made from calcrete and silcrete. The site is assessed to be in fair condition. The site is assessed to be of high archaeological significance. T	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 67	100	Artefacts and PAD	24		0	Clare Anderson	30/05/2013	WB 67 was identified during a due diligence assessment. . WB 67 is an artefact scatter with Potential Archaeological Deposit and consists of 24 stone artefacts. Artefact include flakes and tools. Artefact raw material types include a range oc micro and macro silcretes, quartzite. WB 67 is in close proximity to WB 40, WB 68, WB 69, WB 70 and could be considered part of the same continuous landscape of artefacts associated with the dunes bordering Muckee Lake. WB 67 has not been assessed for significance but is likely to contain similar values to WB 40. Artefacts within WB 67 were found eroding from residual soils. Potential Archaeological Deposit is likely to be present.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 68	100	Artefacts and PAD	2		0	Clare Anderson	31/05/2013	WB 68 was identified during a due diligence assessment. . WB 68 is an artefact scatter consisting of two complete silcrete flakes with Potential Archaeological Deposit. WB 68 is in close proximity to WB 40, WB 68, WB 69, WB 70 and could be considered part of the same continuous landscape of artefacts associated with the dunes bordering Muckee Lake. WB 67 has not been assessed for significance. Artefacts within WB 68 were found eroding from residual soils. Potential Archaeological Deposit is likely to be present.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 69	100	Artefacts and PAD	2		0	Clare Anderson	31/05/2013	WB 69 was identified during a due diligence assessment. . WB 69 is an artefact scatter consisting of two silcrete flakes with Potential Archaeological Deposit. WB 69 is in close proximity to WB 40, WB 68, WB 67, WB 70 and could be considered part of the same continuous landscape of artefacts associated with the dunes bordering Muckee Lake. Artefacts within WB 69 were found eroding from residual soils. Potential Archaeological Deposit is likely to be present.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 7	Tw 1	Artefacts	2		0	Giles Hamm	30/07/2012	The site is an Artefact Scatter located on the edge of a small clay pan. It is located 200 m north of WB 1. There are 2 artefacts within the scatter. They are made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 70	100	Artefacts and PAD	5		0	Clare Anderson	31/05/2013	WB 70 was identified during a due diligence assessment. . WB 70 is an artefact scatter consisting of 5 silcrete stone artefacts with Potential Archaeological Deposit . Artefact types include cores, flakes and tools. WB 70 is in close proximity to WB 40, WB 67, 68, and WB 69nd could be considered part of the same continuous landscape of artefacts associated with the dunes bordering Muckee Lake. Artefacts within WB 70 were found eroding from residual soils. Potential Archaeological Deposit is likely to be present in adjacent residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 71	100	Artefacts, Hearth and PAD	10	Hearth	1	Clare Anderson	31/05/2013	WB 71 was identified during a due diligence assessment. . WB 71 is an artefact scatter consisting of 10 stone artefacts and a hearth scatter with Potential Archaeological Deposit . Raw material types for artefacts include quartz, quartzite and silcrete. Artefact types include cores, flakes and tools. WB 71 is in close proximity to WB 40, WB 67, 68, WB 69 and WB 70 and could be considered part of the same continuous landscape of artefacts associated with the dunes bordering Muckee Lake. One calcrete hearth scatter was identified in WB 71. No charcoal was visible but burnt calcrete was located in a tight cluster. Artefacts within WB 71 were found eroding from residual soils. Potential Archaeological Deposit is likely to be present in adjacent residual soils.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 72	52	Artefacts	4		0	Clare Anderson	31/05/2013	WB 72 was identified during a due diligence assessment. . WB 72 is an artefact scatter consisting of 4 stone artefacts on a dirt track running alongside the Hughdale property boundary The site consists of three silcrete flakes and a silcrete retouched tool. WB 72 is in a disturbed context and its integrity cannot be assured.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 73	52	Artefacts and PAD	5		0	Clare Anderson	31/05/2013	WB 73 was identified during a due diligence assessment. . WB 73 is an artefact scatter consisting of 4 silcrete flakes and one silcrete core within erosion created by the creation of a drainage channel adjacent the Hughdale property boundary fence and adjacent access track. WB 73 is disturbed but artefacts located were eroding from residual soils and potential archaeological deposit may exist.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 74	100	Artefacts and PAD	9		0	Clare Anderson	31/05/2013	WB 74 was identified during a due diligence assessment. . WB 74 is an artefact scatter consisting of 9 stone artefacts and Potential Archaeological Deposit. Artefact raw materials include silcrete and quartzite. Artefact types include core, flakes, retouched tools and a grinding stone,. Artefacts located were eroding from residual soils and potential archaeological deposit may exist.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 75	52	Isolated Artefact	1		0	Clare Anderson	31/05/2013	WB 75 was identified during a due diligence assessment. . WB 75 is an isolated stone artefact - a broken silcrete flake, located in close proximity to existing ground water monitoring wells.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 76	Walking between transects	Isolated Artefact	1		0	Clare Anderson	31/05/2013	WB 76 was identified during a due diligence assessment. . WB 76 is an isolated stone artefact - a silcrete flake.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 77	52	Isolated Artefact	1		0	Clare Anderson	31/05/2013	WB 77 was identified during a due diligence assessment. . WB 77 is an isolated stone artefact - a complete silcrete flake	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 78	52	Isolated Artefact	1		0	Clare Anderson	31/05/2013	WB 78 was identified during a due diligence assessment. . WB 78 is an isolated stone artefact - a broken silcrete flake	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 79	45	Isolated Artefact	1		0	Clare Anderson	30/05/2013	WB 79 was identified during a due diligence assessment. . WB 79 is an isolated stone artefact - a silcrete retouched tool with backing	Condoulpe	Sandplains and dunefields with mallee	Mallee	Sandplain	Sandplain between dunefields and the Riverine Plain near Balranald
WB 8	Tw 1	Artefacts and Hearth	2	Hearth	1	Giles Hamm	30/07/2012	The site is an Artefact Scatter with a hearth scatter of termite nest material located on the edge of a small clay pan. It is located on the south-eastern corner of T1. There are 2 artefacts within the scatter. They are made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 80	52	Isolated Artefact	1		0	Clare Anderson	31/05/2013	WB 80 was identified during a due diligence assessment. . WB 80 is an isolated stone artefact - a silcrete retouched tool.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 81	52	Isolated Artefact	1		0	Clare Anderson	30/05/2013	WB 81 was identified during a due diligence assessment. . WB 81 is an isolated stone artefact - a broken silcrete retouched tool.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 82	BHM 3	Hearth	0	Hearth	1	Clare Anderson	25/06/2013	WB 82 was identified during a due diligence assessment. . WB 82 is a hearth scatter with a concentration of calcrete heat retainers in a scald. No charcoal was visible.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 83	BHM3	Isolated Artefact	1		0	Clare Anderson	25/06/2013	WB 83 was identified during a due diligence assessment. . WB 83 is an isolated stone artefact - a broken silcrete flake.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 84	BHM3	Isolated Artefact	1		0	Clare Anderson	25/06/2013	WB 84 was identified during a due diligence assessment. . WB 84 is an isolated stone artefact - a broken silcrete flake, maximum dimension 20mm.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 85	BHM3	Artefacts	3		0	Clare Anderson	25/06/2013	WB 85 is an open stone artefact scatter consisting of a a broken silcrete flakes (max. dimension 10mm), a silcrete core, a broken quartz flake (max. dimension 16mm) in an exposure approximately 40-60m west of a dirt track.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 86	BHM3	Artefacts and Hearth	2	Hearth	1	Clare Anderson	25/06/2013	WB 86 is an open artefact scatter consisting of a quartzite unifacial core, a complete silcrete retouched tool and a dispersed scatter of burnt calcrete heat retainers	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 87	BHM3	Artefacts	2		0	Clare Anderson	25/06/2013	WB 87 consist of a two silcrete flakes - one complete one proximal located in an exposure adjacent a soak.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 88	BHM3	Hearth	0	Hearth	1	Clare Anderson	25/06/2013	WB 88 is a dispersed scatter of burnt calcrete heat retainers.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 89	BHM3	Artefacts	2		0	Clare Anderson	25/06/2013	WB 89 is located in a scald with scattered calcrete. Site consists of a complete silcrete flake and a silcrete scraper.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 9	Tw 1	Isolated Artefact and Hearth	1	Hearth	1	Giles Hamm	30/07/2012	The site is an Isolated Find located on the edge of a small clay pan. The artefact is a Broken Flake distal made from silcrete. The site is assessed to be in poor condition. The site is assessed to be of low archaeological significance.	Marma	Scalded plains	Saltbush Plains	Alluvial plains	Ill-defined scalded drainage tracts associated with the Riverine Plain.
WB 90	BHM3	Isolated Artefact	1		0	Clare Anderson	25/06/2013	Wb 90 is an isolated complete silcrete flake (max dimension 10mm), uni platform, feather termination. Site is located in an exposure in close proximity to transmission line. Temporary water available in landscape in soaks, scalds. An open depression is located within 400m which contained water at the time of survey. Site is within the relict floodplain of Box Creek. Box Trees are present in the nearby vicinity suggesting available groundwater/	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 91	BHM3	Hearth	0	Hearth	1	Clare Anderson	25/06/2013	WB 91 is a dispersed scatter of burnt calcrete heat retainers over a 5 m x 5 m area. No charcoal was visible and retains no intact material.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 92	BHM3	Isolated Artefact	1		0	Clare Anderson	25/06/2013	WB 91 was identified during a due diligence assessment. The site consists of a single silcrete distal flake, located in an exposure associated with a 19 kv transmission line and access track, with feather termination and a maximum dimension of 23 mm. 25% cobble cortex present on dorsal surface.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.

Site Name	Transect ID	Site Features	Artefact Count	Other Site Feature	Other Feature Count	Recorder	Date	Site Description	Land system	Range Type	Major Range	Physography	Summary
WB 93	BHM3	Artefacts	2		0	Clare Anderson	25/06/2013	WB 93 consists of one silcrete and one quartzite artefacts in an exposure in proximity to a 19 kv transmission line and access track.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 94	BHM3	Isolated Artefact	1		0	Clare Anderson	25/06/2013	WB 94 is an isolated broken silcrete flake with a maximum dimension of 20 mm	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 95	BHM3	Artefacts	2		0	Clare Anderson	25/06/2013	WB 95 was identified during a due diligence assessment. . The site consist of two silcrete flakes; one broken (maximum dimension 20) is located immediately east of an access track and one complete flake (maximum dimension 23mm, unidirection platform, feather termination) is located 20 m to the north-east eroding from residual soil. The site is considered to have low scientific significance. Residual soils may contain further artefacts.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 96	BHM3	Isolated Artefact	1		0	Clare Anderson	25/06/2013	WB 96 was located during a due diligence assessment and consists of a single complete silcrete flake with a maximum dimension of 12 mm, feather termination and uni platform.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 97	BHM3	Isolated Artefact	1		0	Clare Anderson	25/06/2013	WB 97 was identified during a due diligence assessment and consists of a single complete silcrete flake (maximum dimension 26 mm) with an abrupt termination and flaked platform.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.
WB 98	90	Isolated Artefact	1		0	Clare Anderson	26/06/2013	WB 98 was identified during a due diligence assessment. . WB 98 is an isolated stone artefact - a broken distal silcrete flake with a maximum dimension of 27 mm	Youhl	Riverine plain with saltbush and bluebush	Saltbush Plains	Playas and Basins	Relict lakes adjacent to the Riverine Plain.
WB 99	BHM3	Isolated Artefact and Hearth	1	Hearth	1	Clare Anderson	26/06/2013	WB 99 contains an isolated complete silcrete flake with a step termination (maximum dimension 32 mm) located in a scald with residual soils. Some of the residual soils appear that they may contain stained sediments. It was not clear from the exposure whether these were burnt or not.	Rata	Riverine plain with saltbush and bluebush	Saltbush Plains	Alluvial plains	Extensive saltbush plain with small subcircular depressions.







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- ▭ Visible Site Boundary
- ▭ Surveyed Area

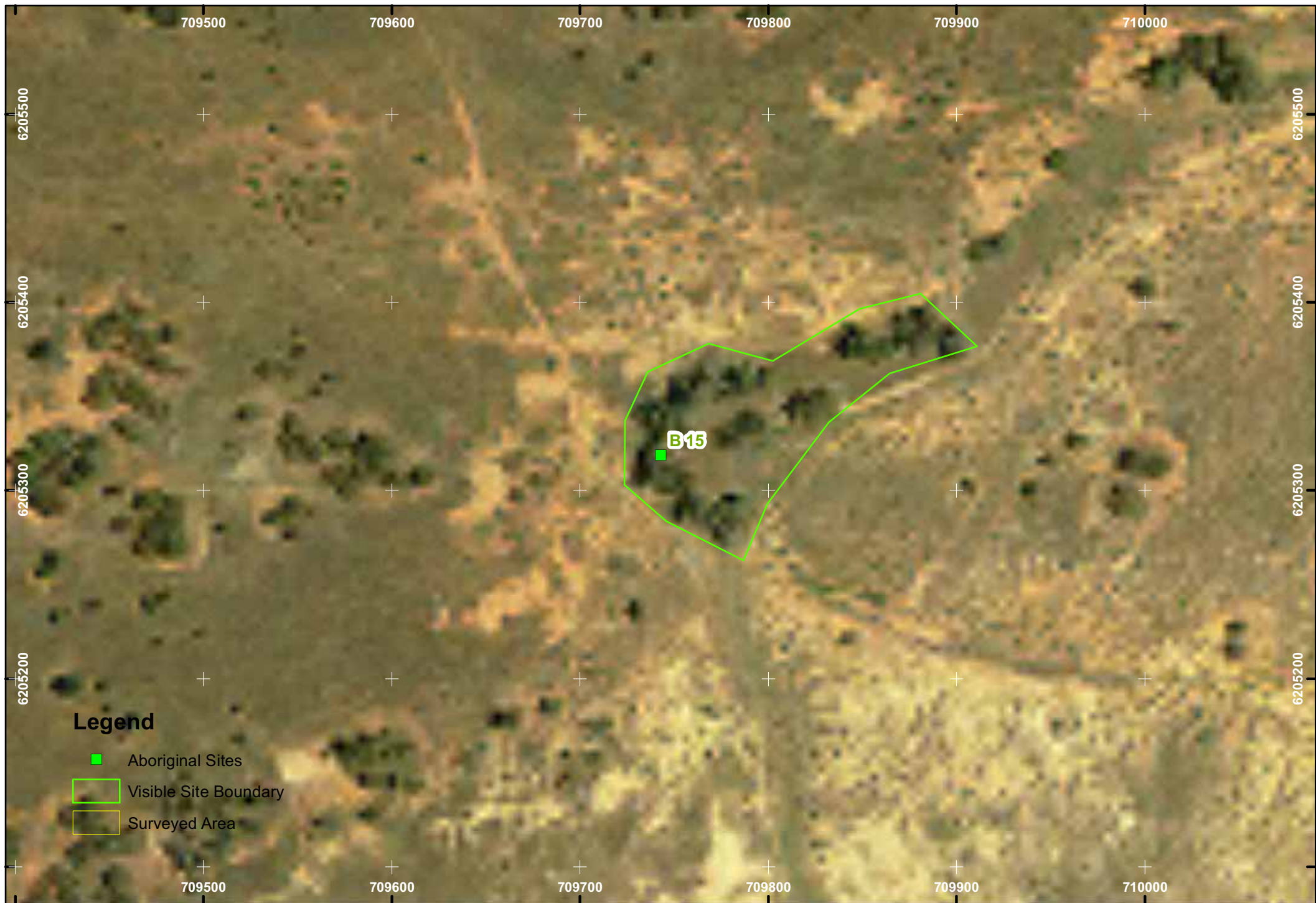
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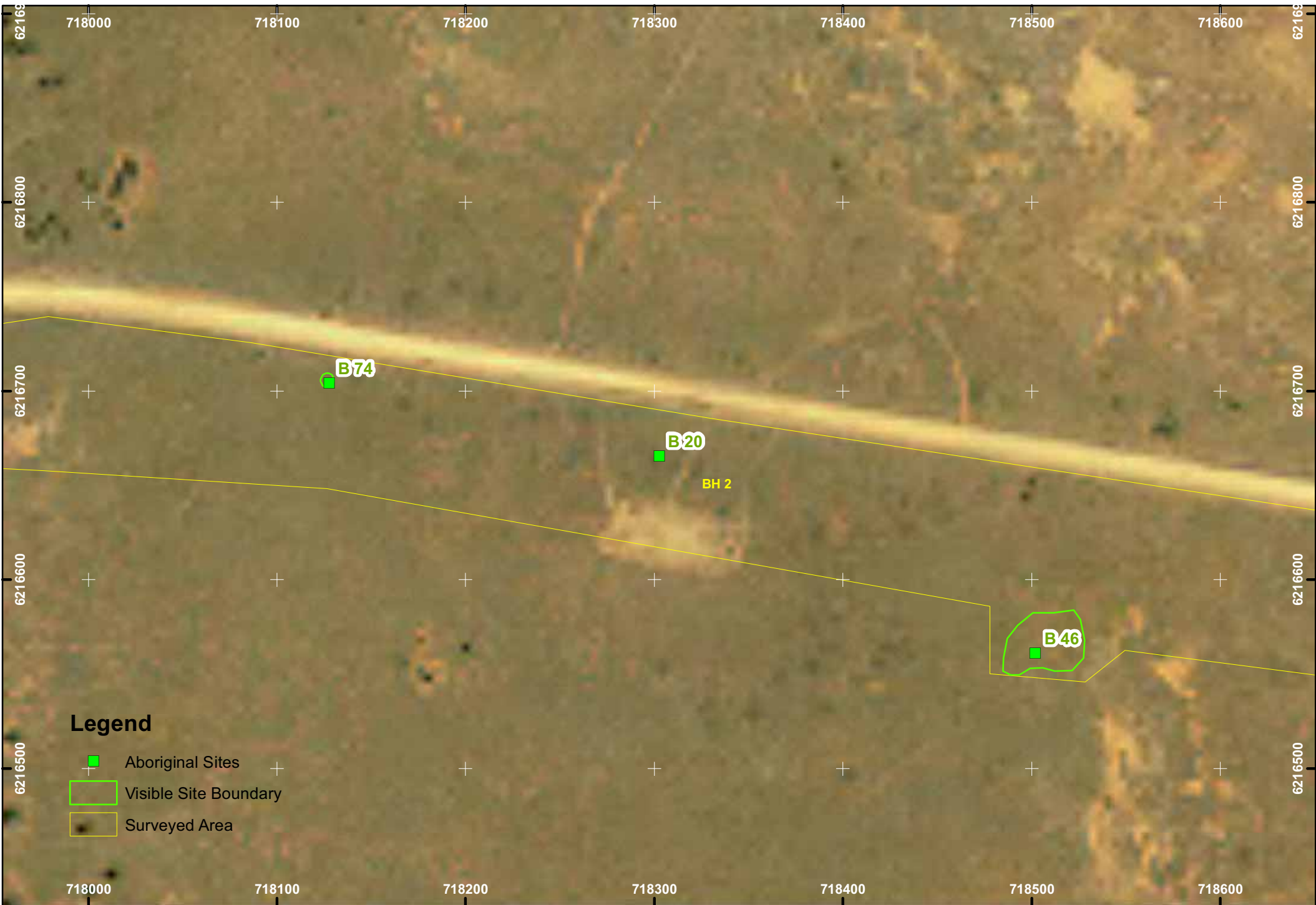




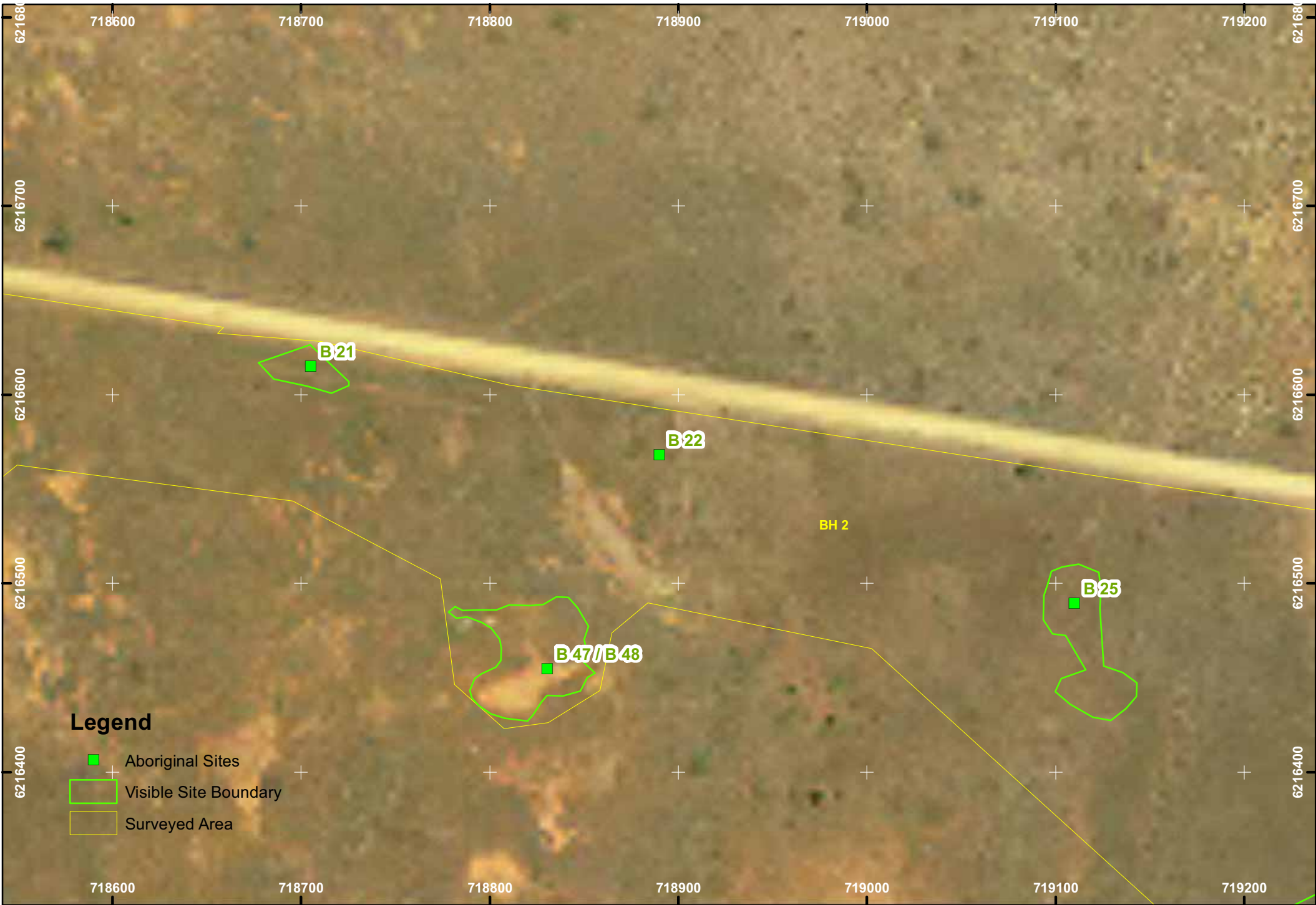
















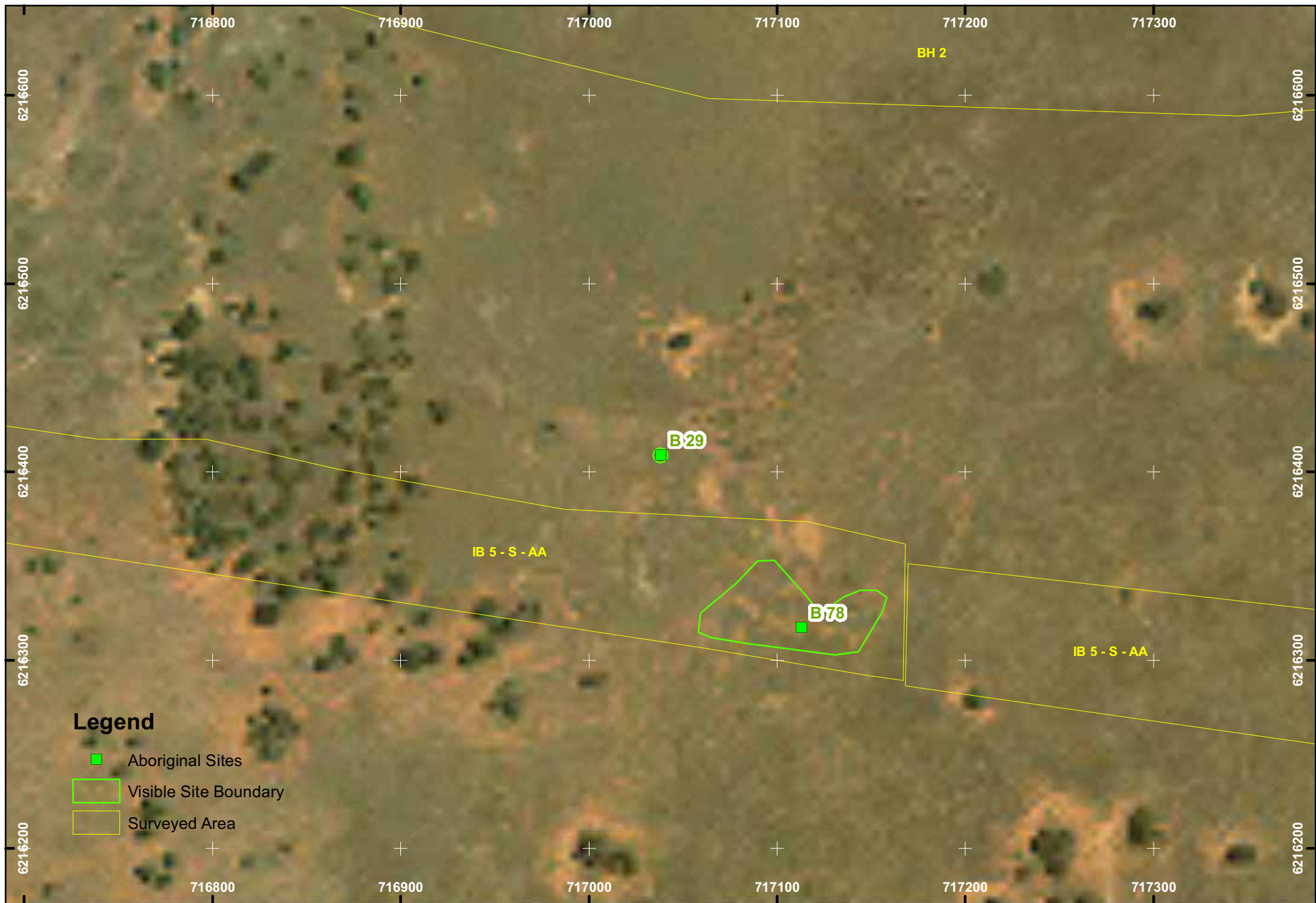
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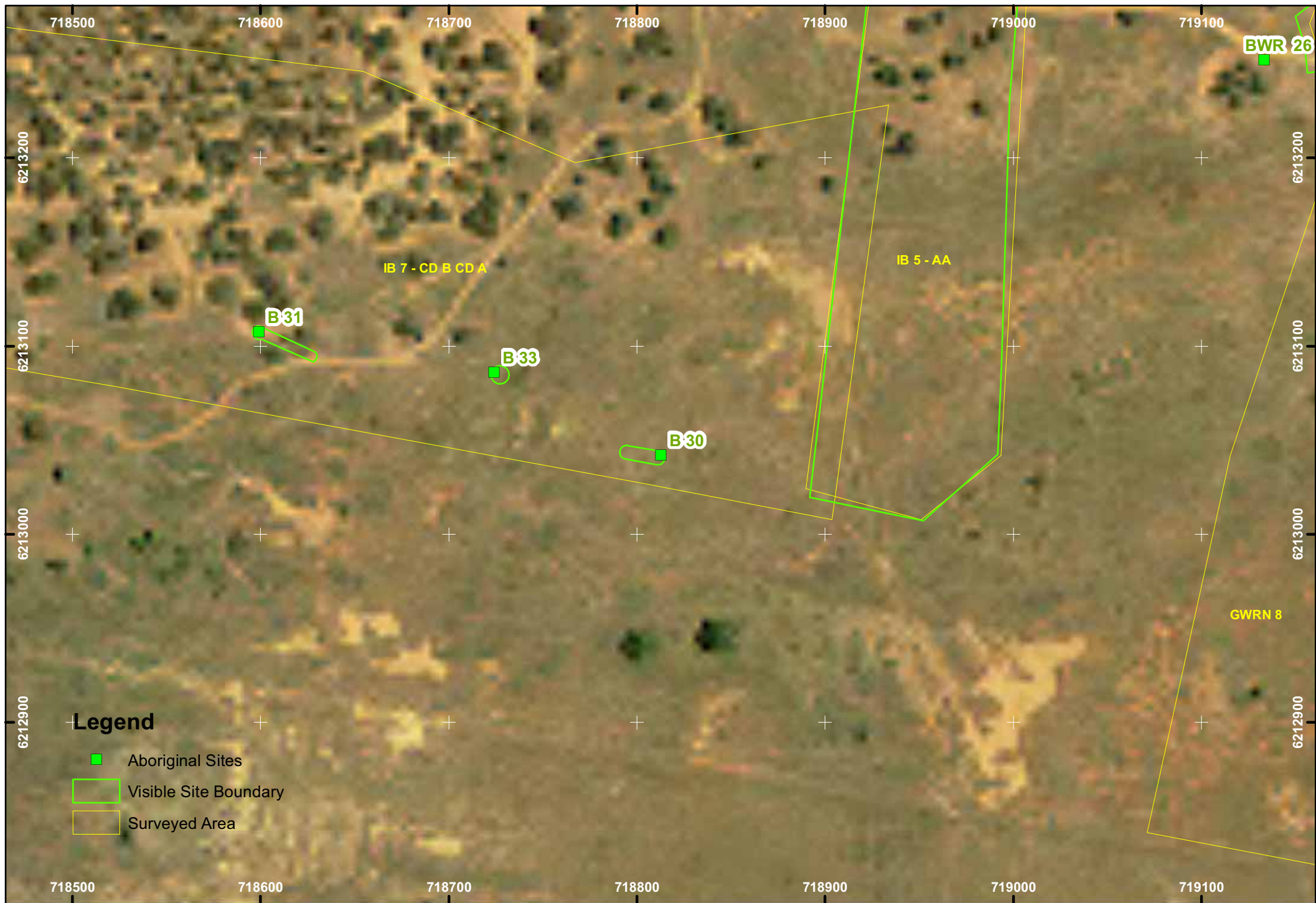
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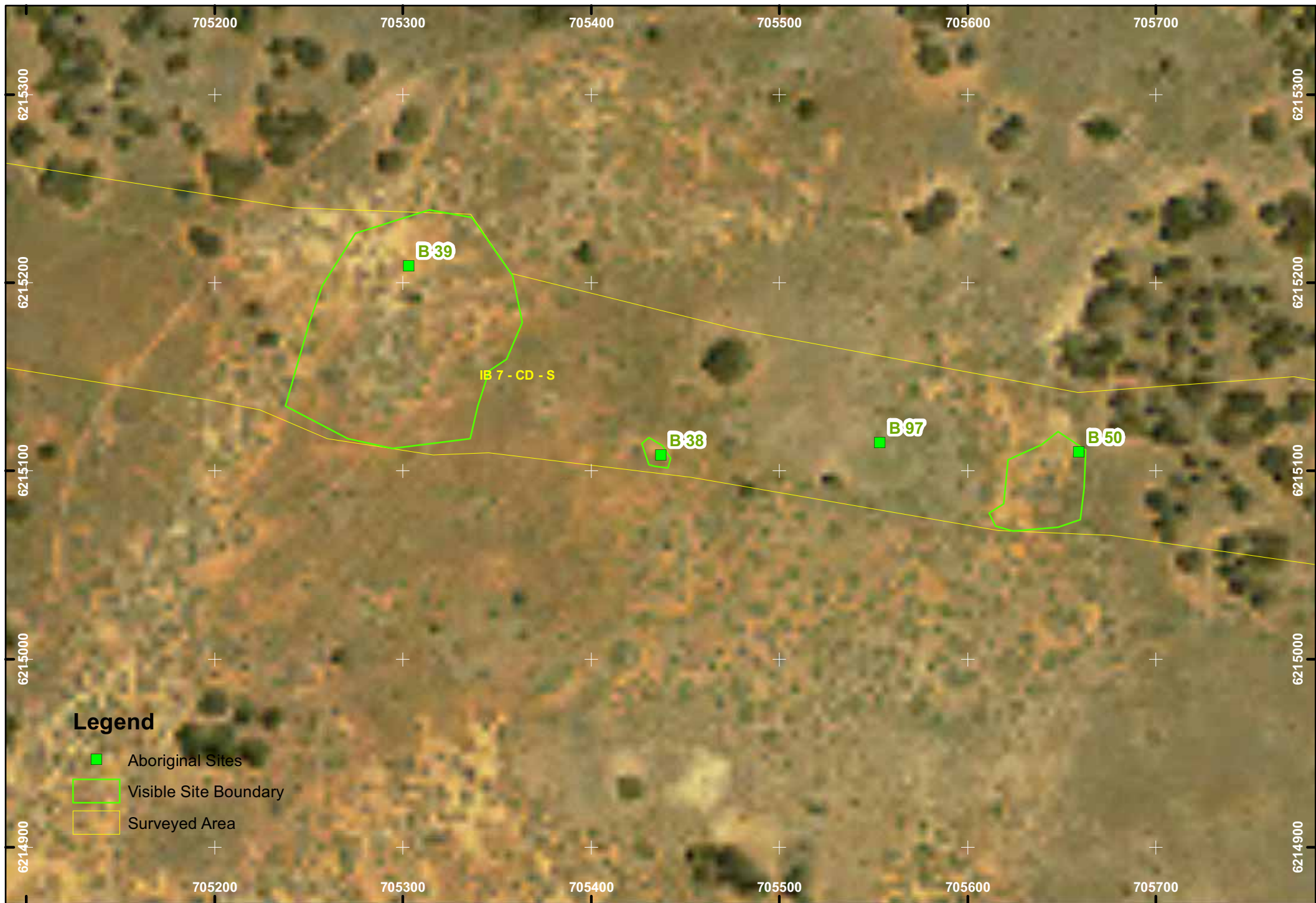


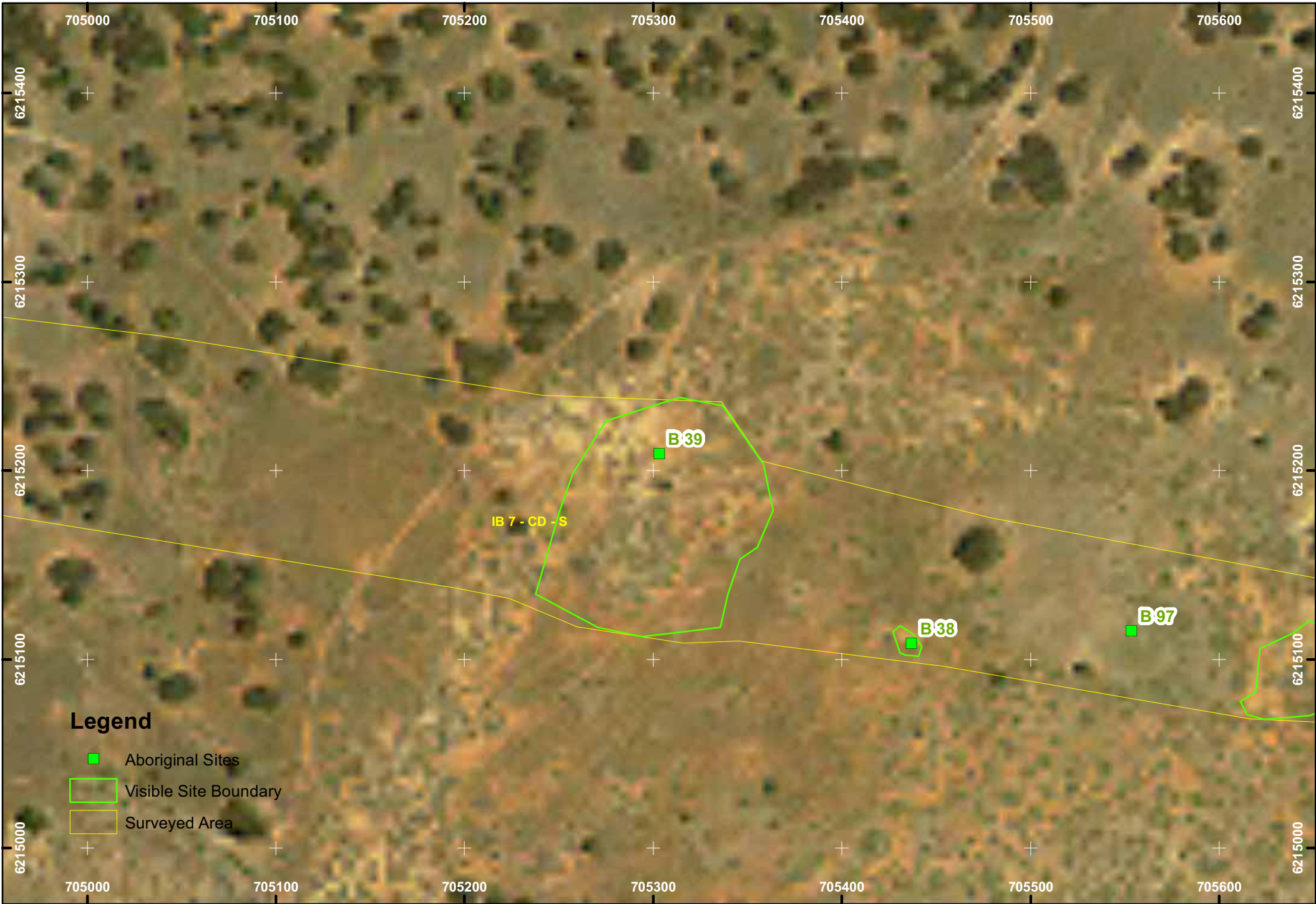
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- ▭ Surveyed Area



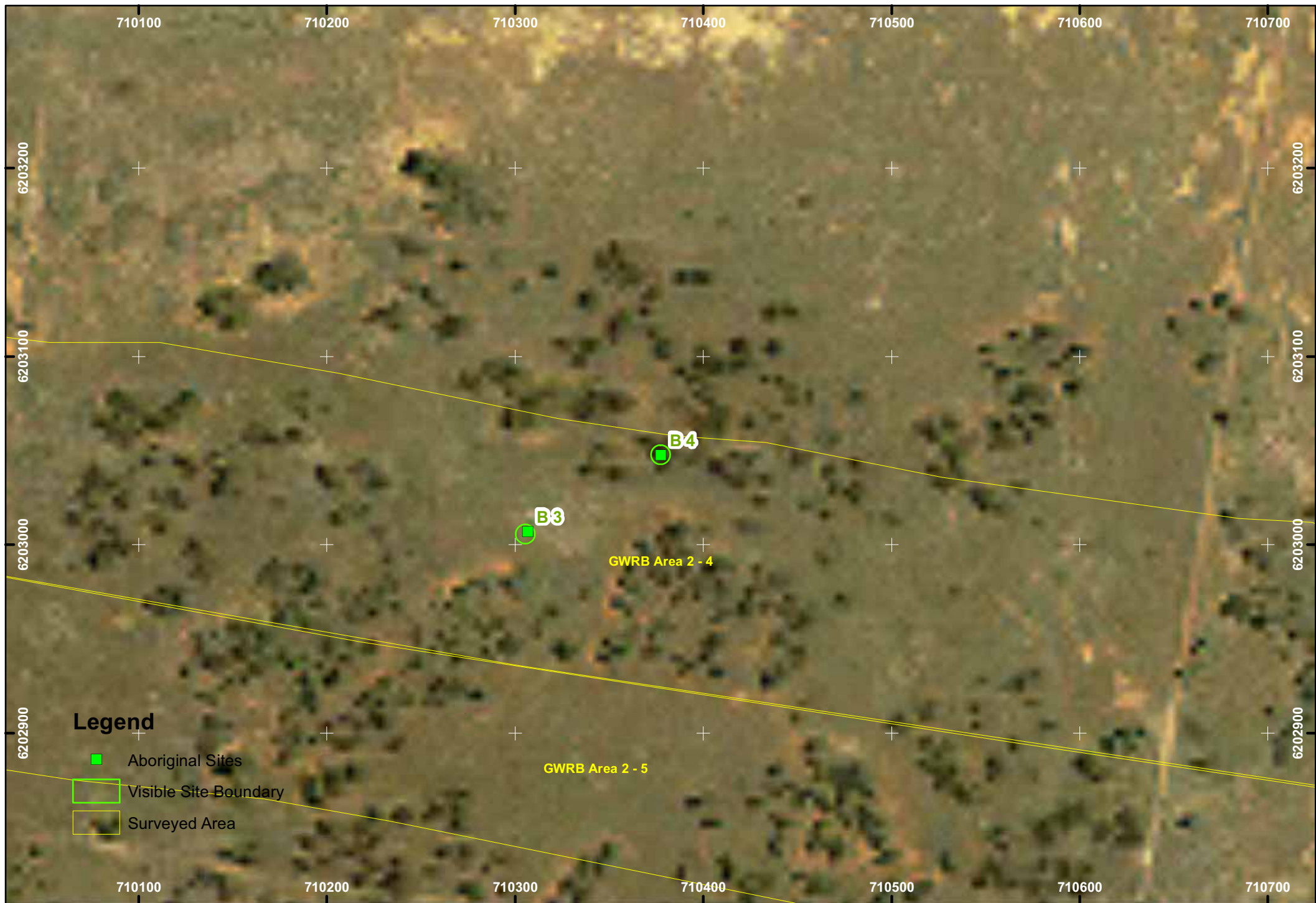






Legend

- Aboriginal Sites
- Visible Site Boundary
- Surveyed Area

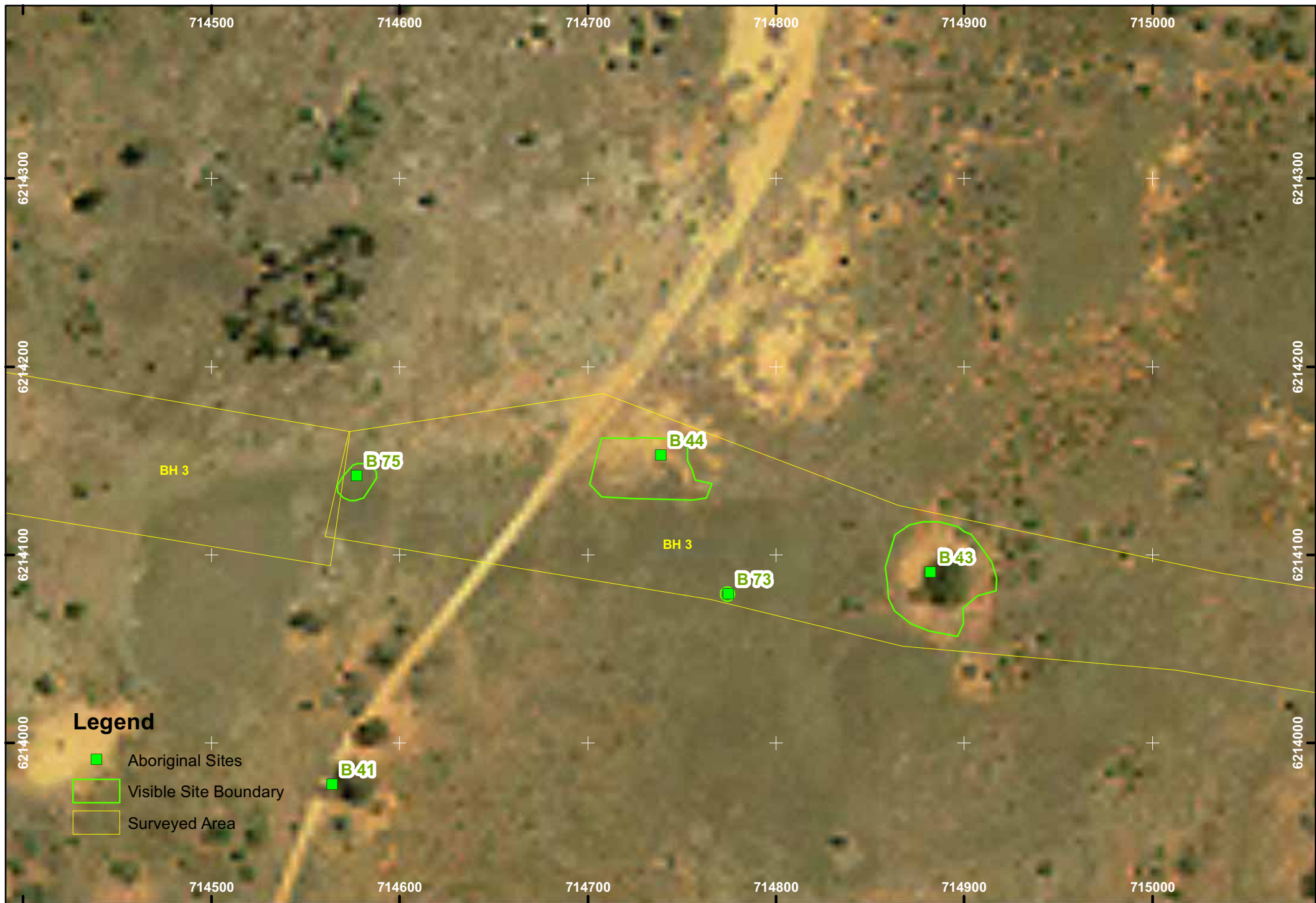
































719100

719200

719300

719400

719500

719600

719700

6216000

6216000

6215900

6215900

6215800

6215800

6215700

6215700




IB 5 - AA

IB 5 - AA

B 54

B 85

Legend

-  Aboriginal Sites
-  Visible Site Boundary
-  Surveyed Area

719100

719200

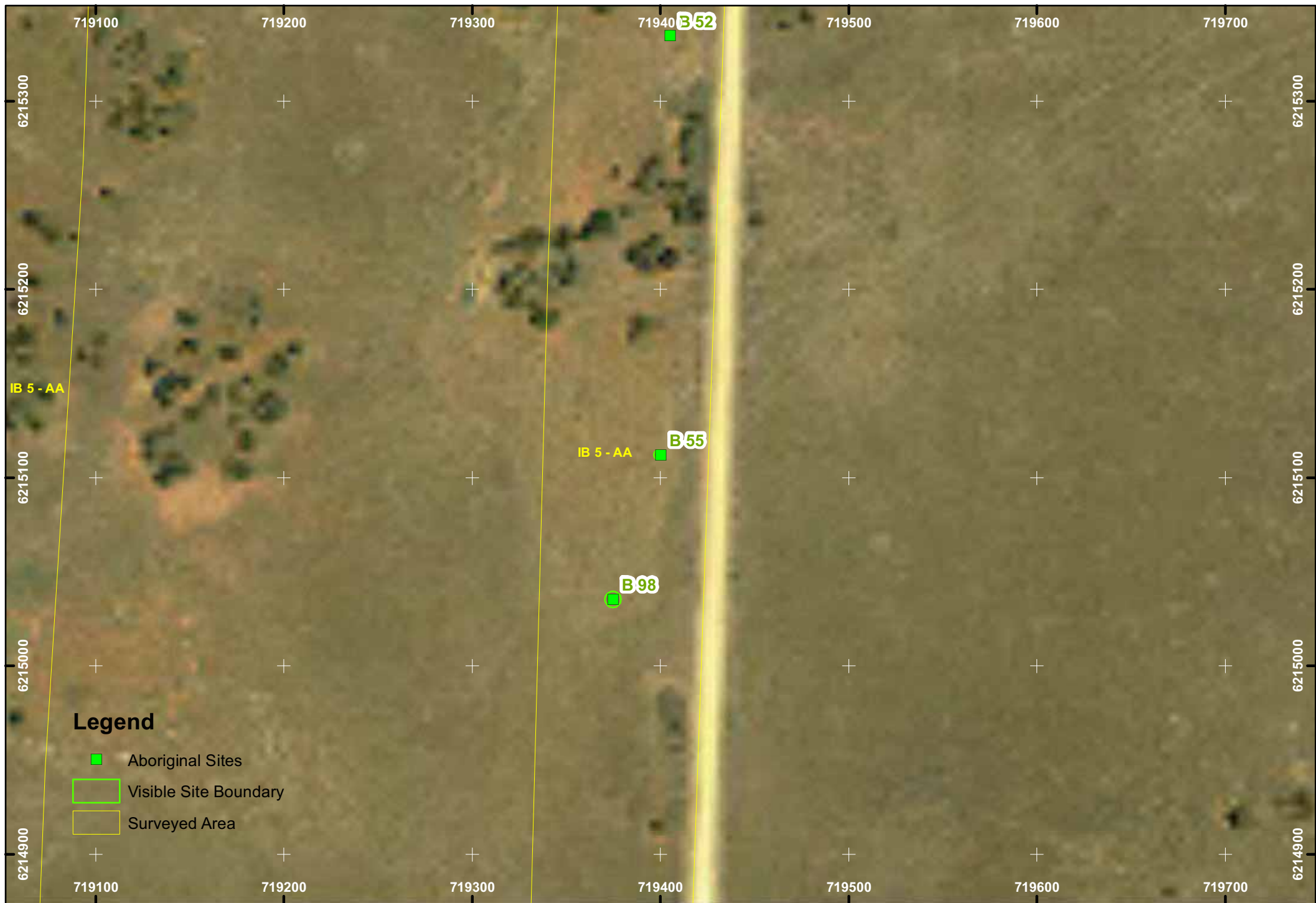
719300

719400

719500

719600

719700



Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area





Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area





BWR 35

BWR 34

BWRARI 1

BWR 37

B 59

B BH 9

B 60

B 61

Legend

- Aboriginal Sites
- Visible Site Boundary
- Surveyed Area

B 85

IB 5 - AA













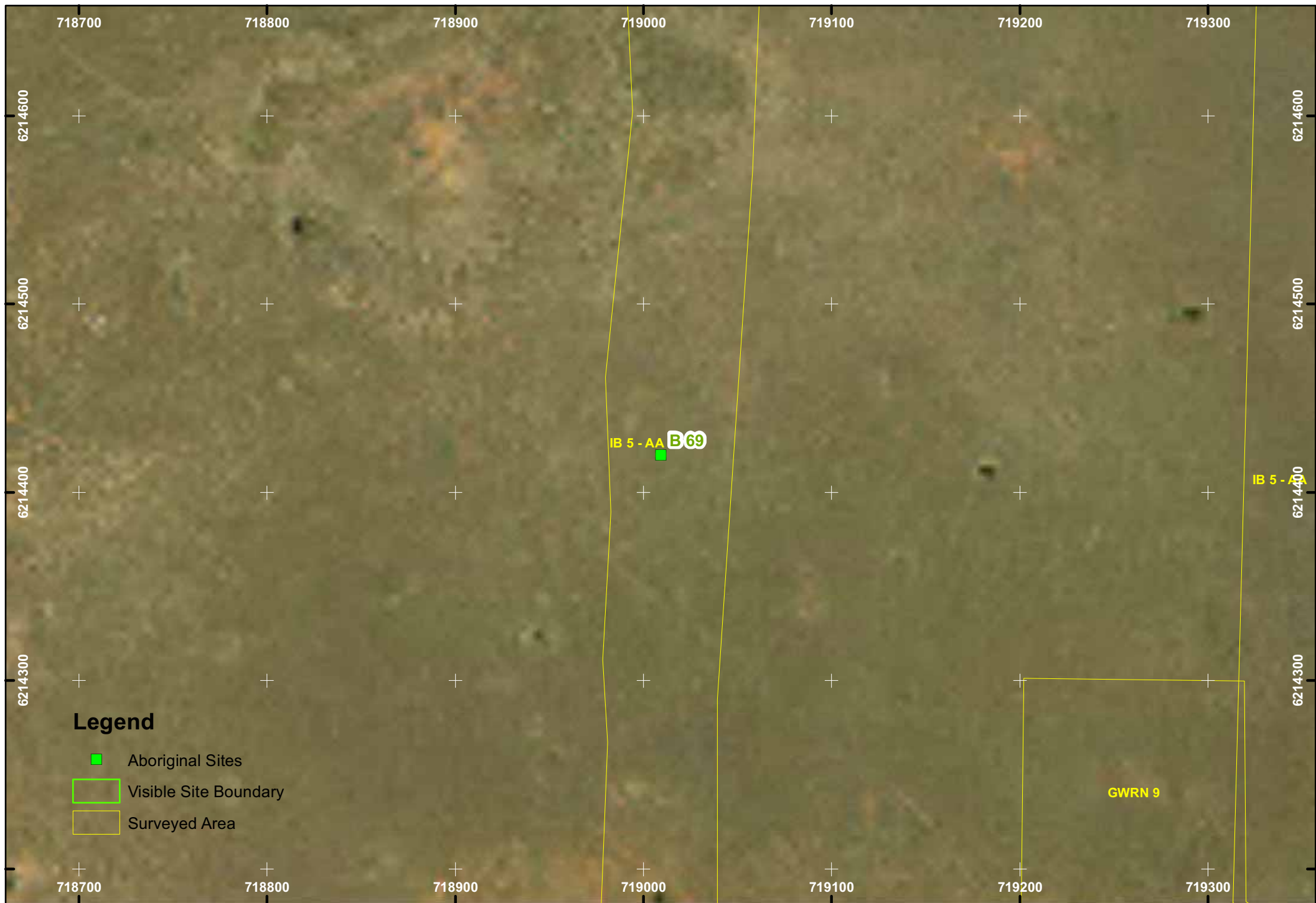
Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area













718800

718900

719000

719100

719200

719300

6215400

6215400

6215300

6215300

6215200

6215200

6215100

6215100

718800

718900

719000

719100

719200

719300

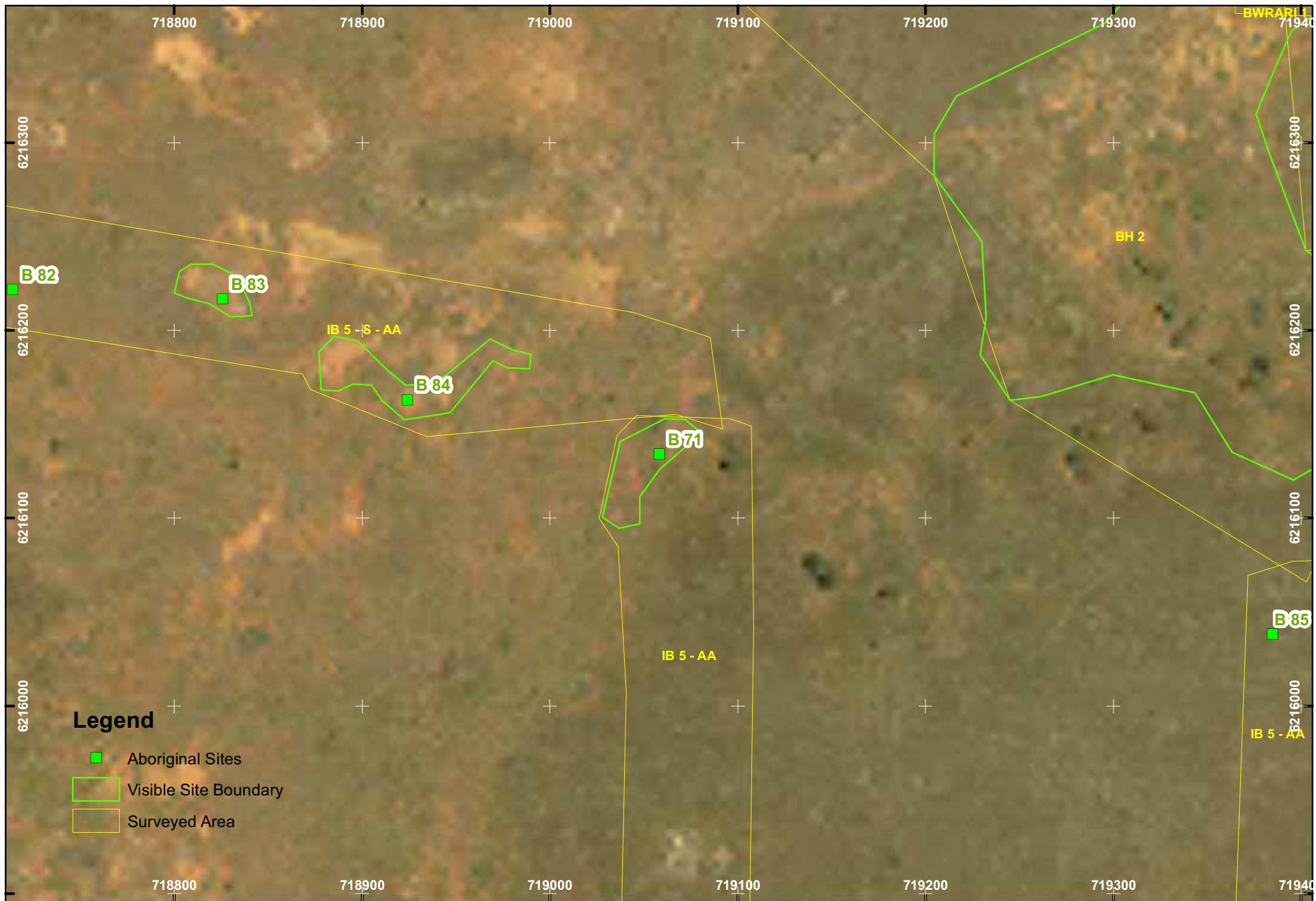
Legend

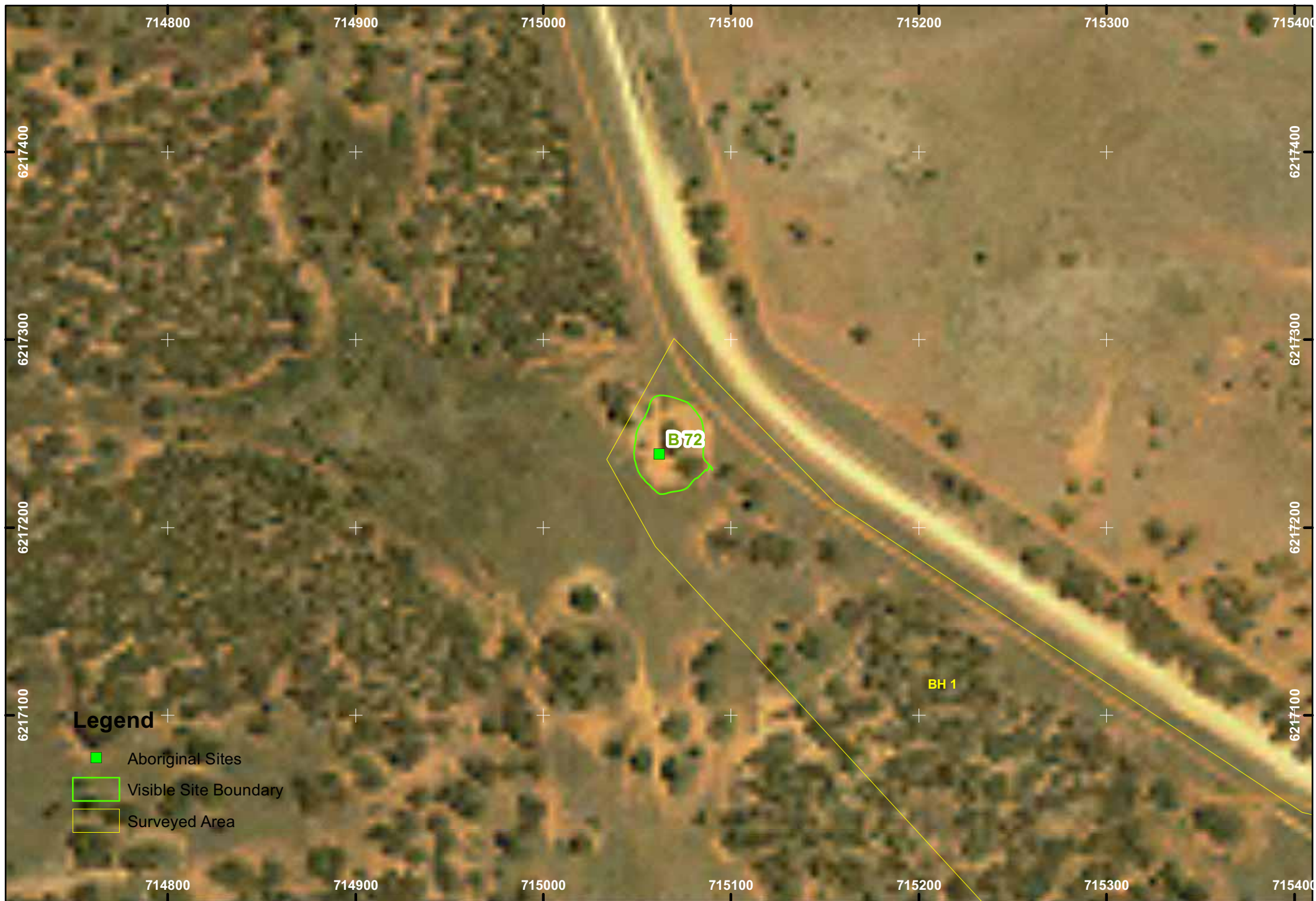
- Aboriginal Sites
- Visible Site Boundary
- Surveyed Area

B70
IB 5 - AA

IB 5 - AA

B98













Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area



708900

709000

709100

709200

709300

709400

6212200

6212200

6212100

6212100

6212000

6212000

6211900

6211900

708900

709000




709100

709200

709300

709400

Legend

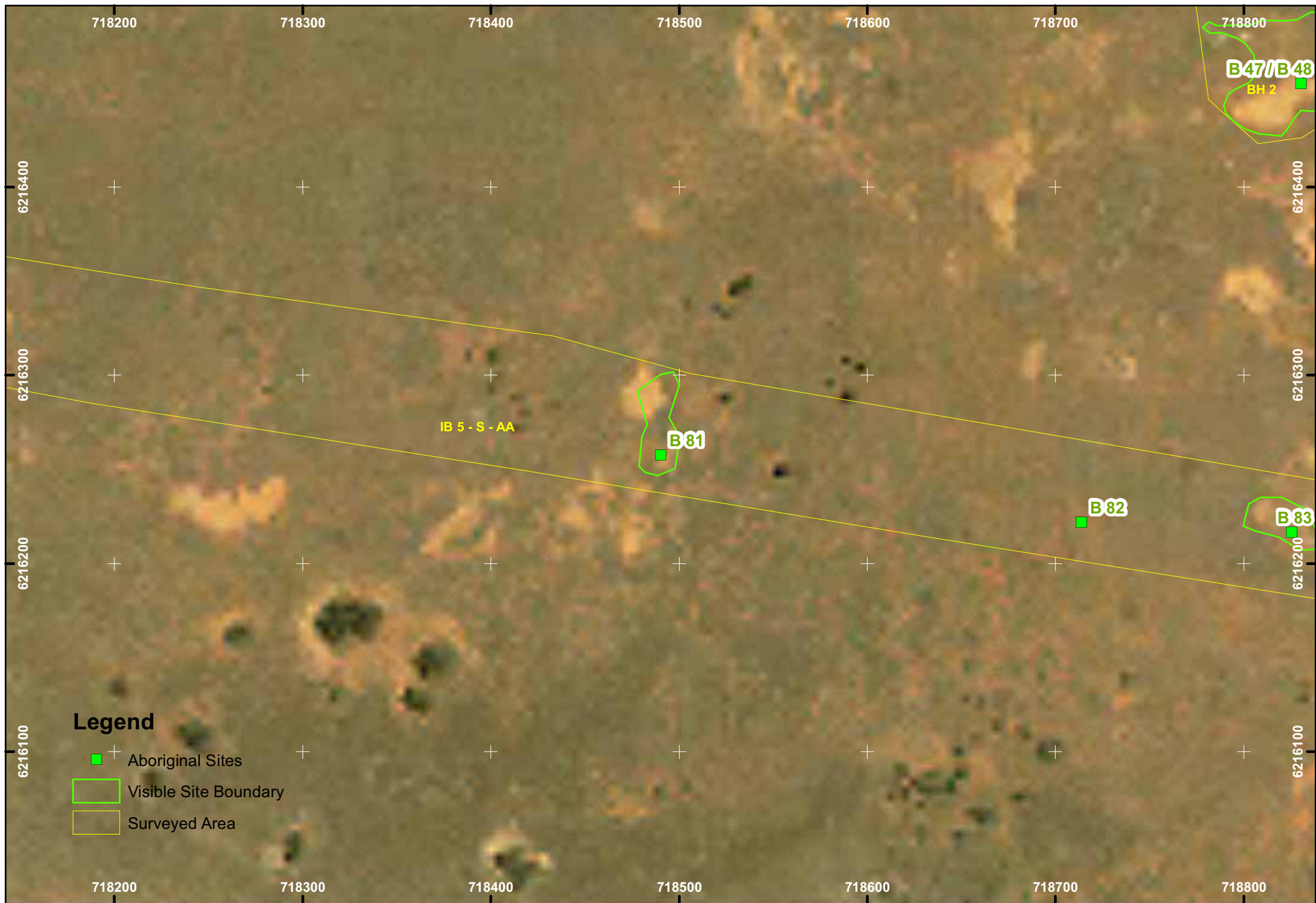
-  Aboriginal Sites
-  Visible Site Boundary
-  Surveyed Area

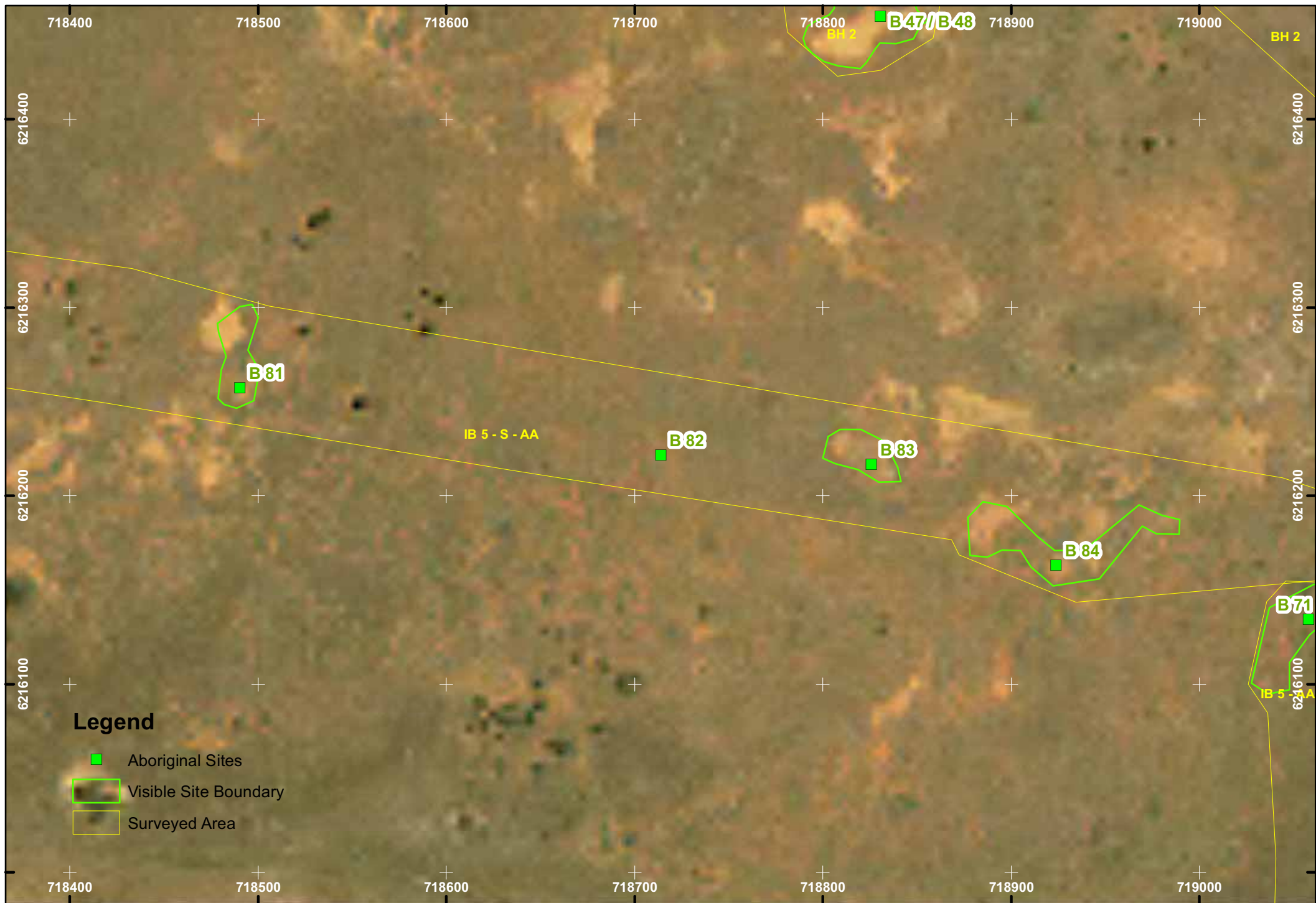


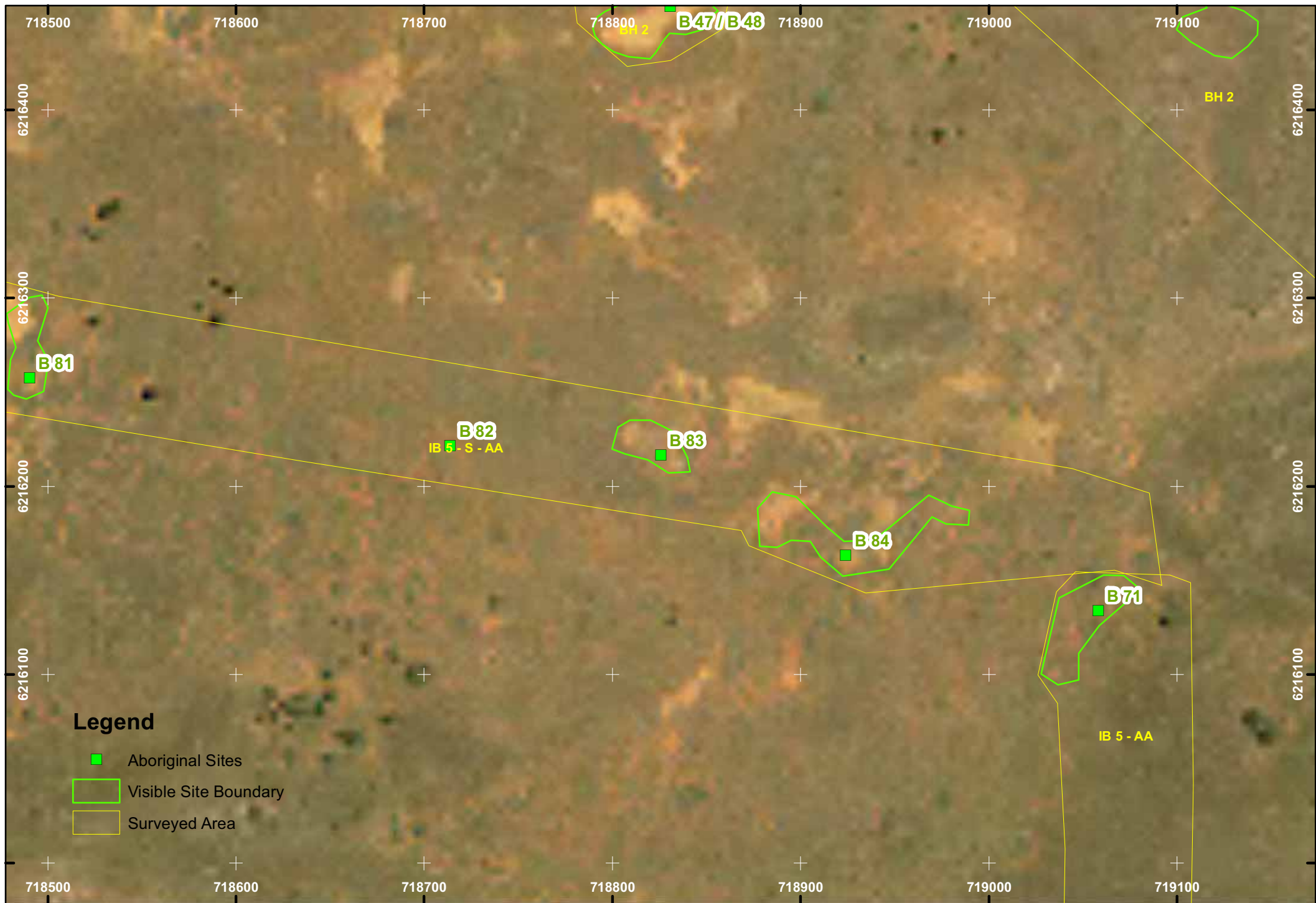


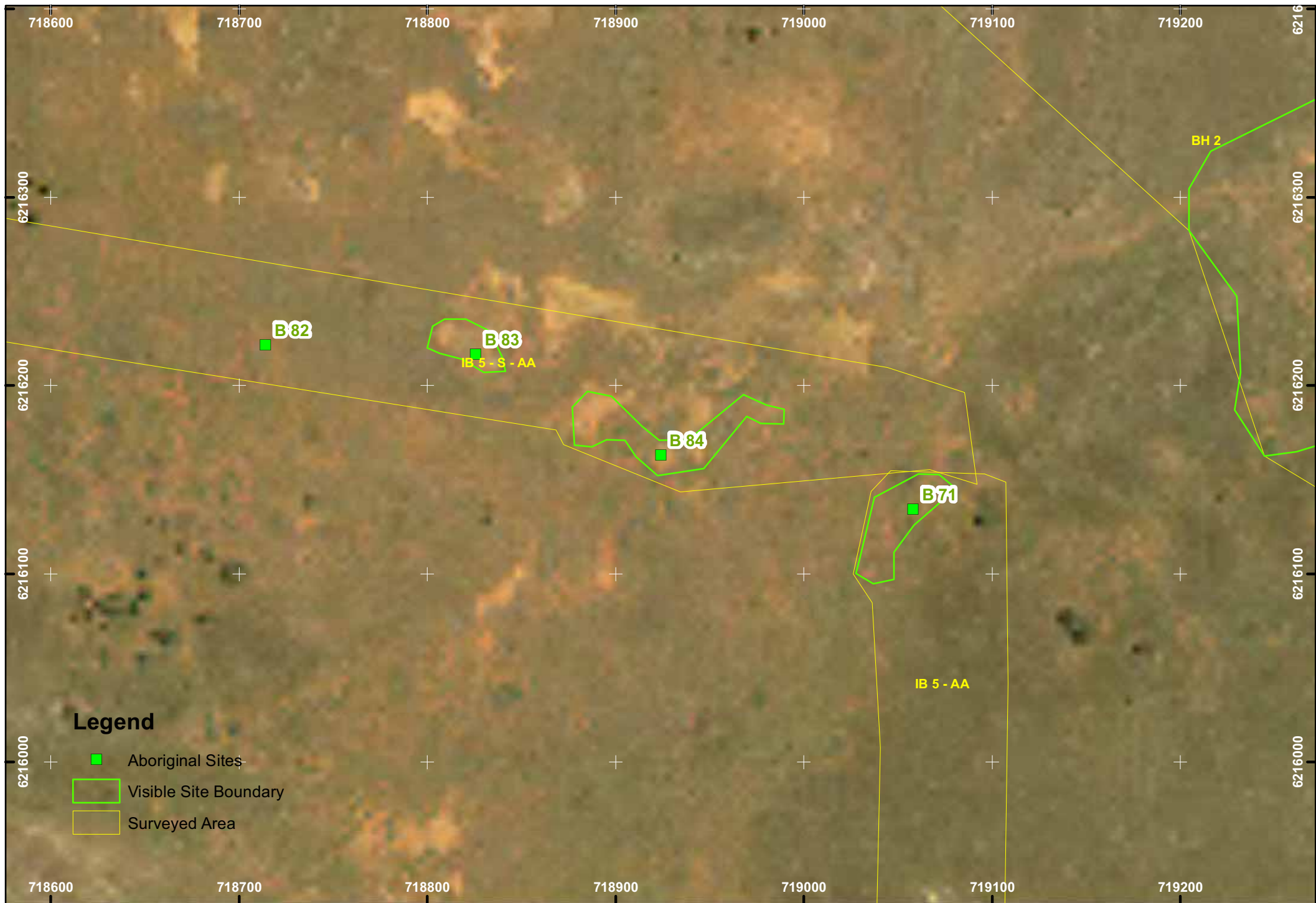














719100

719200

719300

719400

719500

719600

719700

6216200

6216200

6216100

6216100

6216000

6216000

6215900

6215900

5800

719100

719200

719300

719400

719500

719600

719700

5800

IB 5 - S - AA

BH 2

B BH 9

B 59

B71

B85

IB 5 - AA

IB 5 - AA

B54

Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area

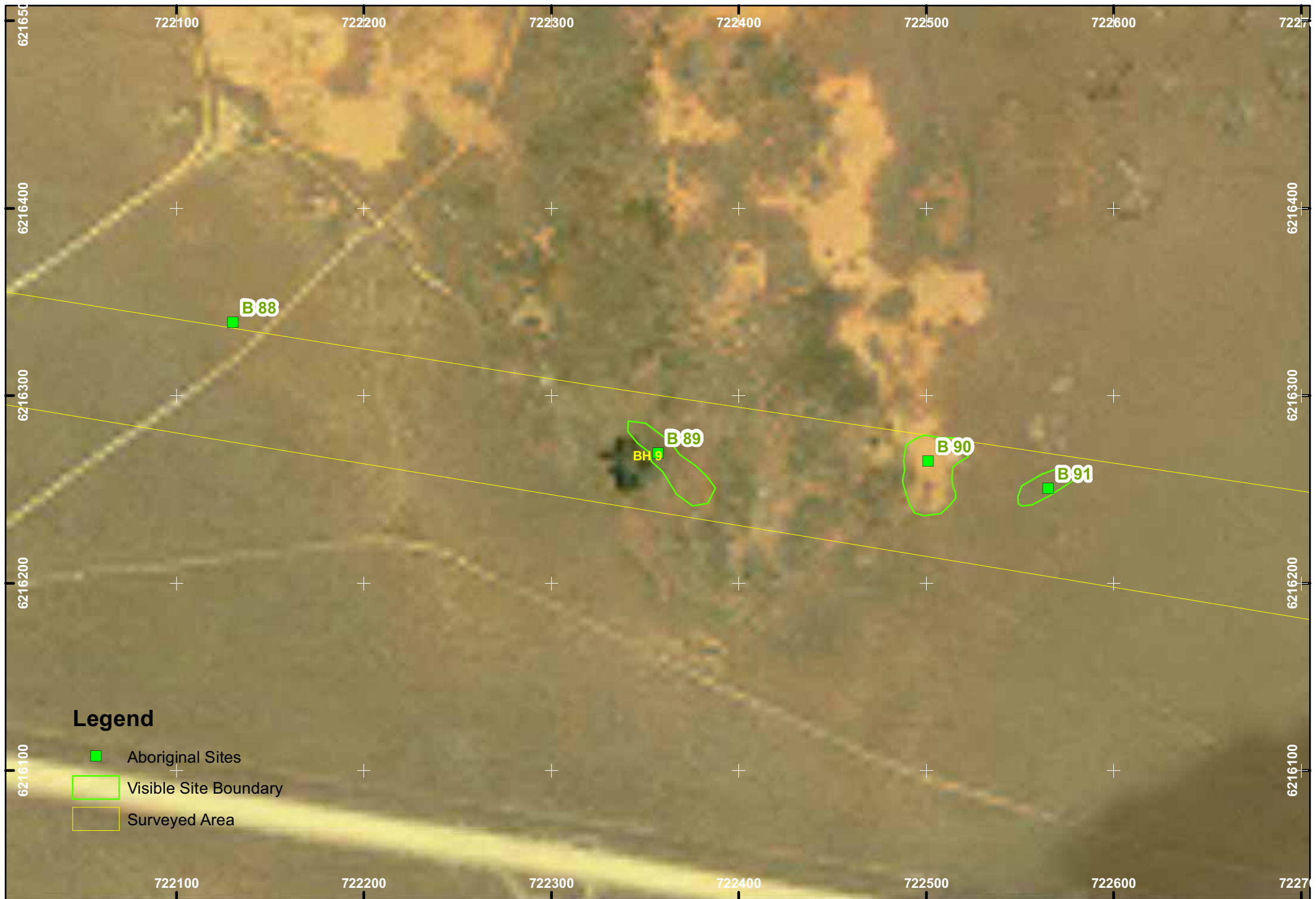




Legend

- Aboriginal Sites
- Visible Site Boundary
- Surveyed Area











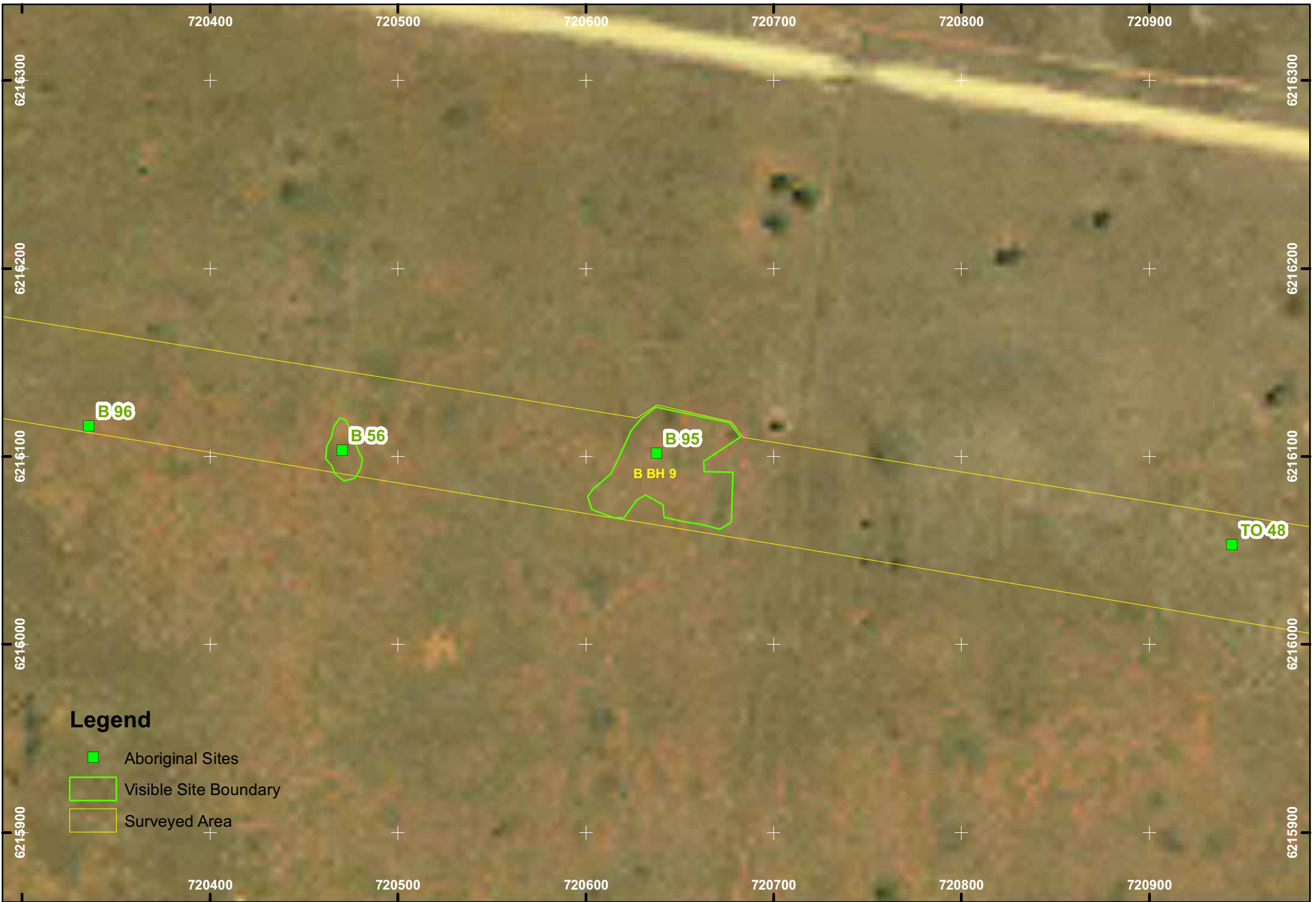


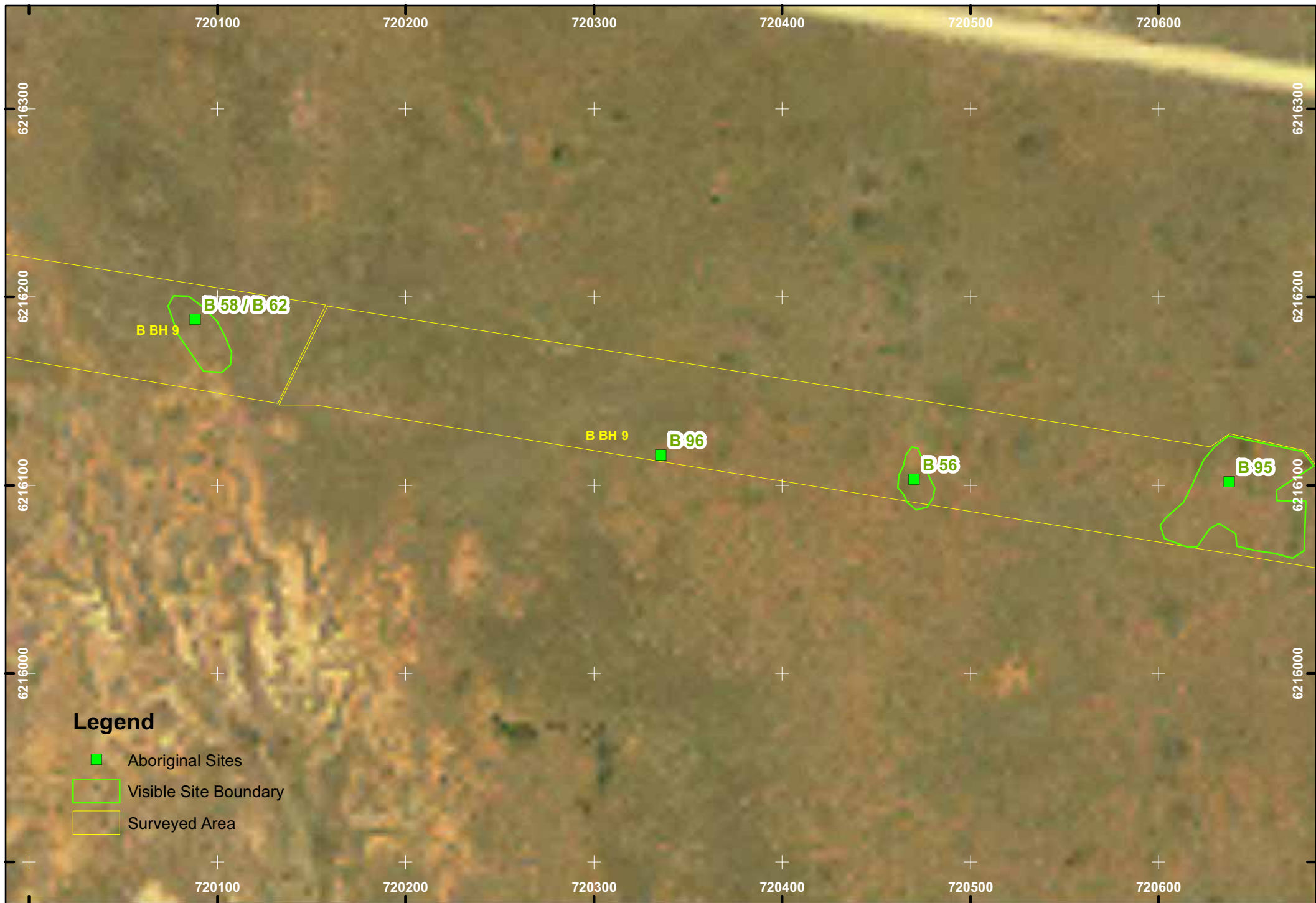
Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area

















Legend

-  Aboriginal Sites
-  Visible Site Boundary
-  Surveyed Area



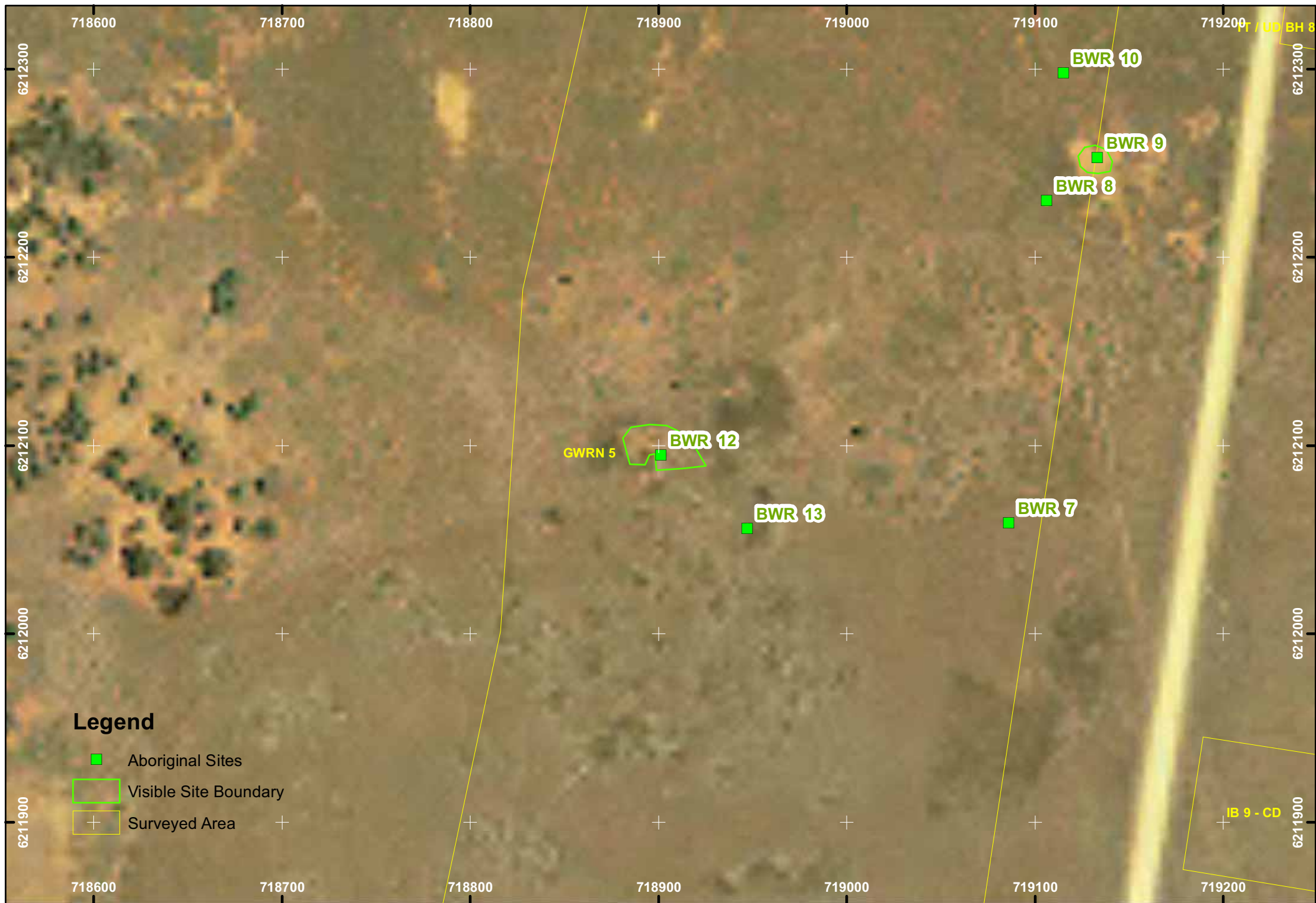


Legend

-  Aboriginal Sites
-  Visible Site Boundary
-  Surveyed Area





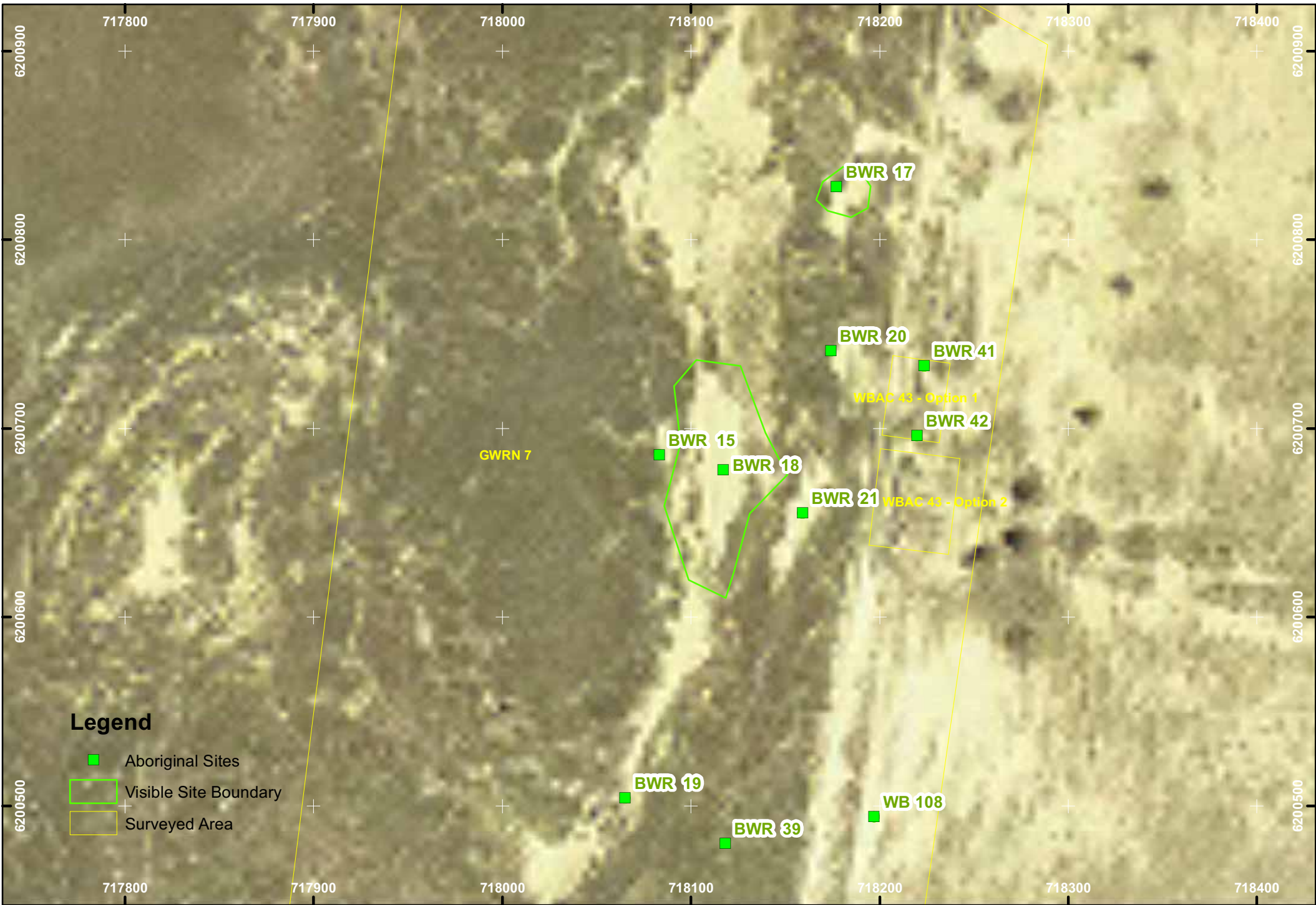




Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area

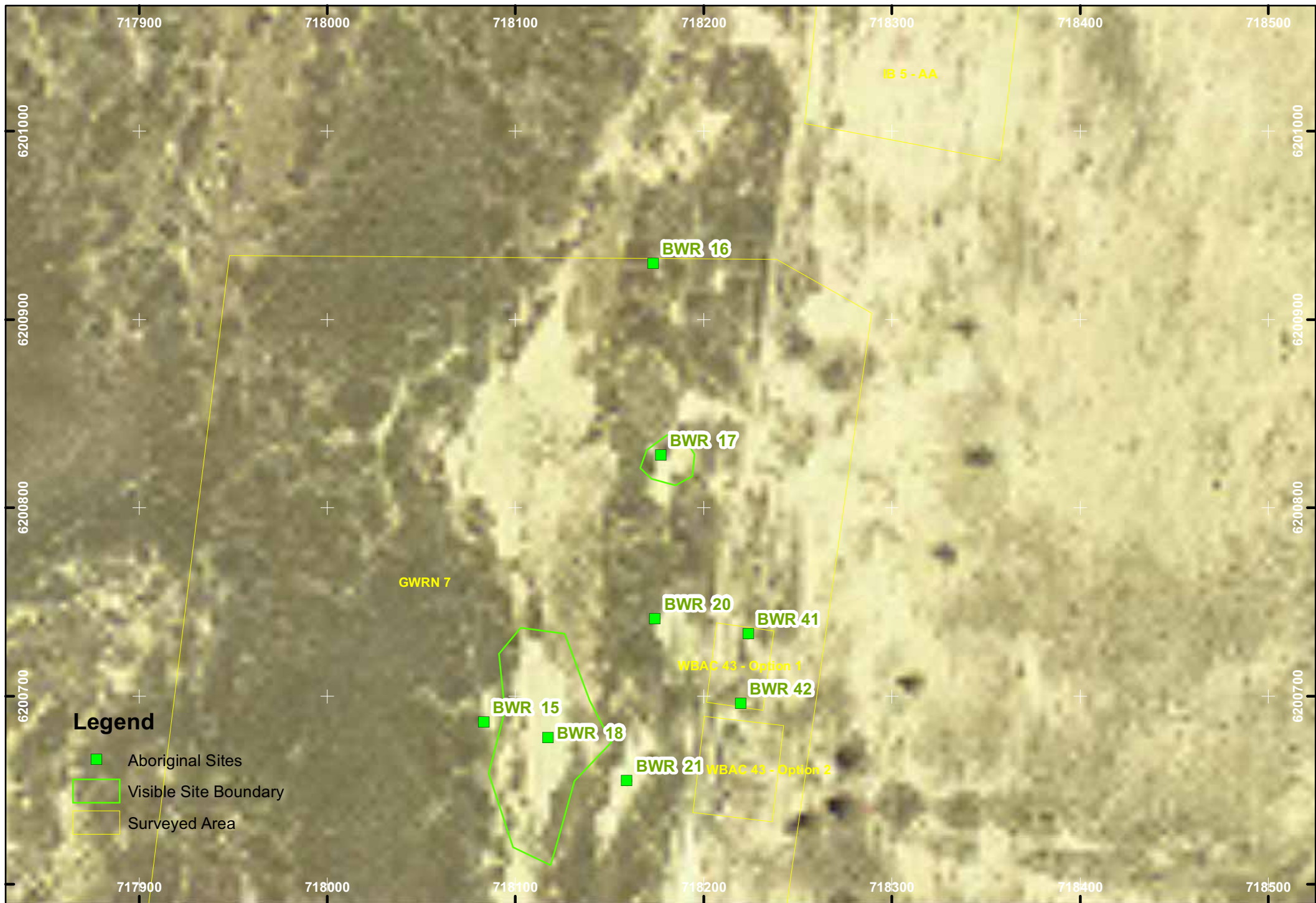


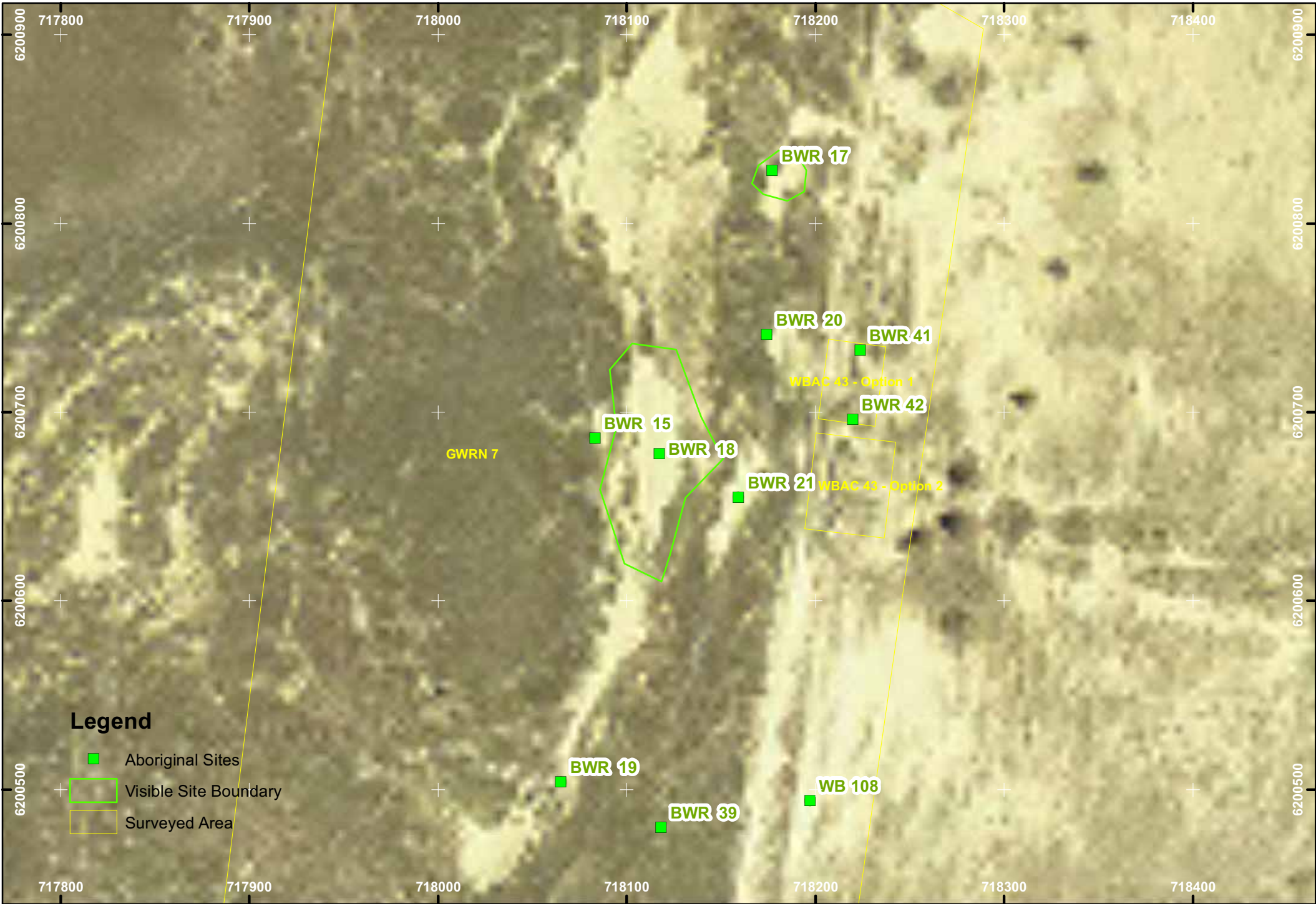


Legend

- Aboriginal Sites
- ▭ Visible Site Boundary
- ▭ Surveyed Area

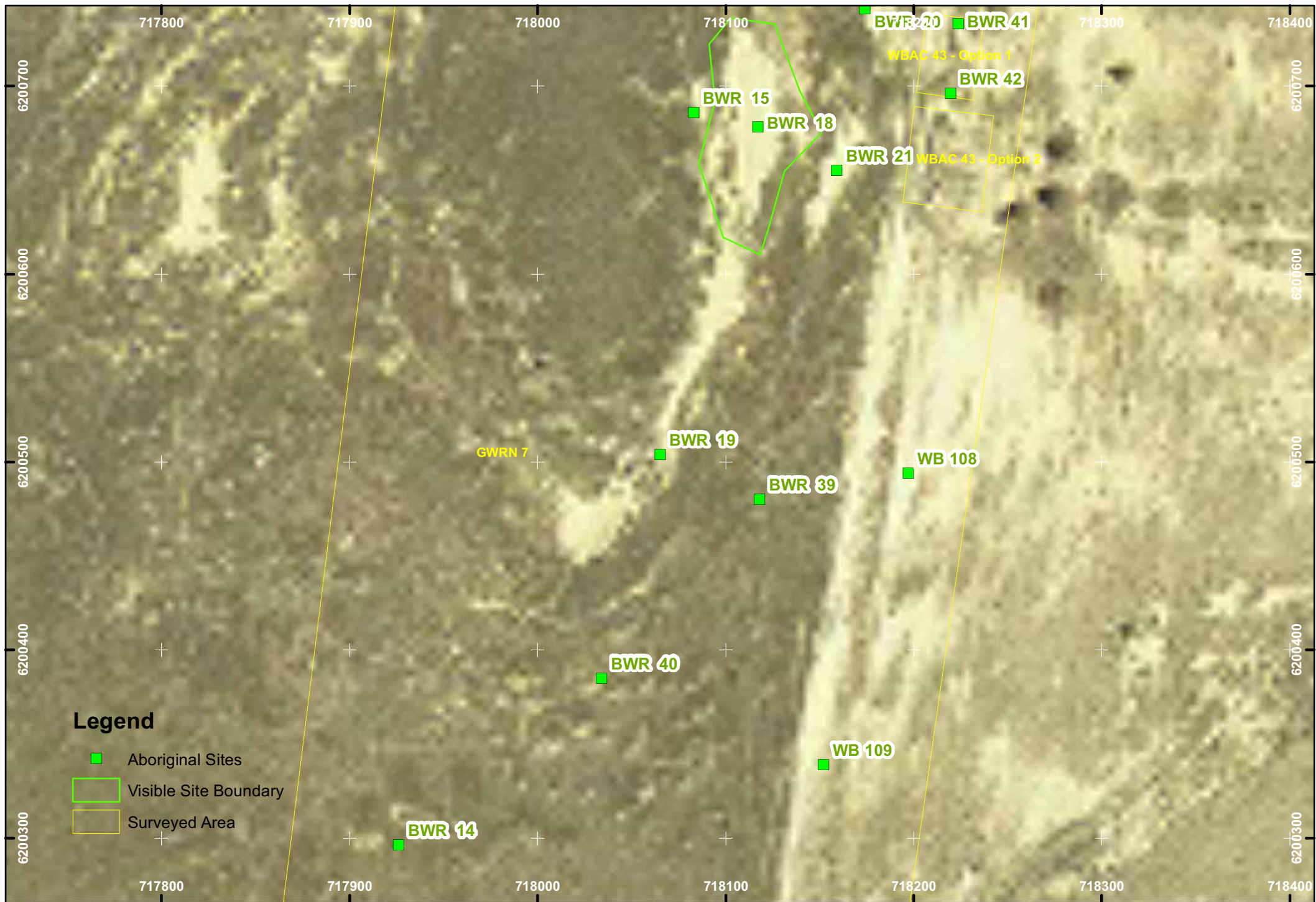


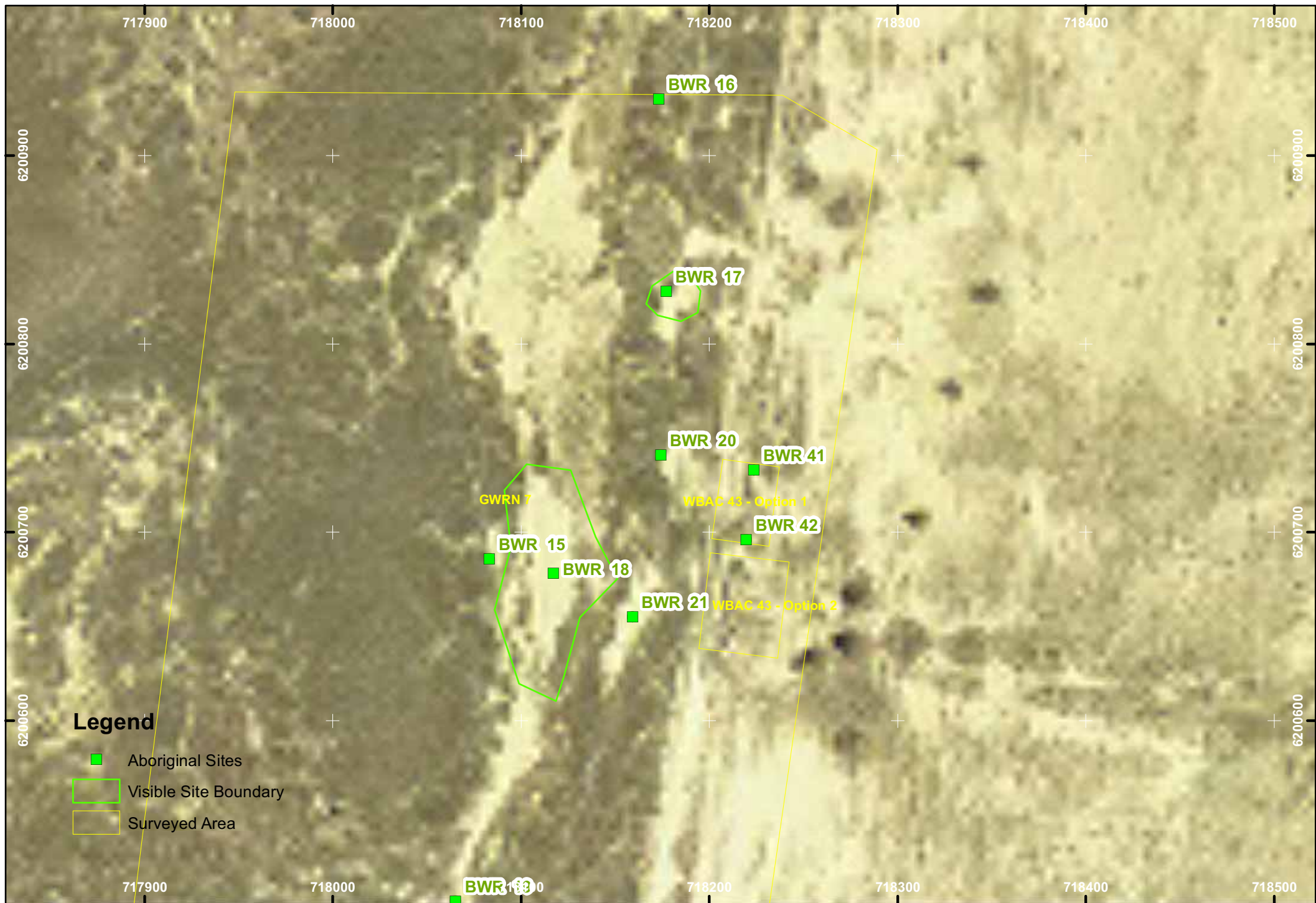


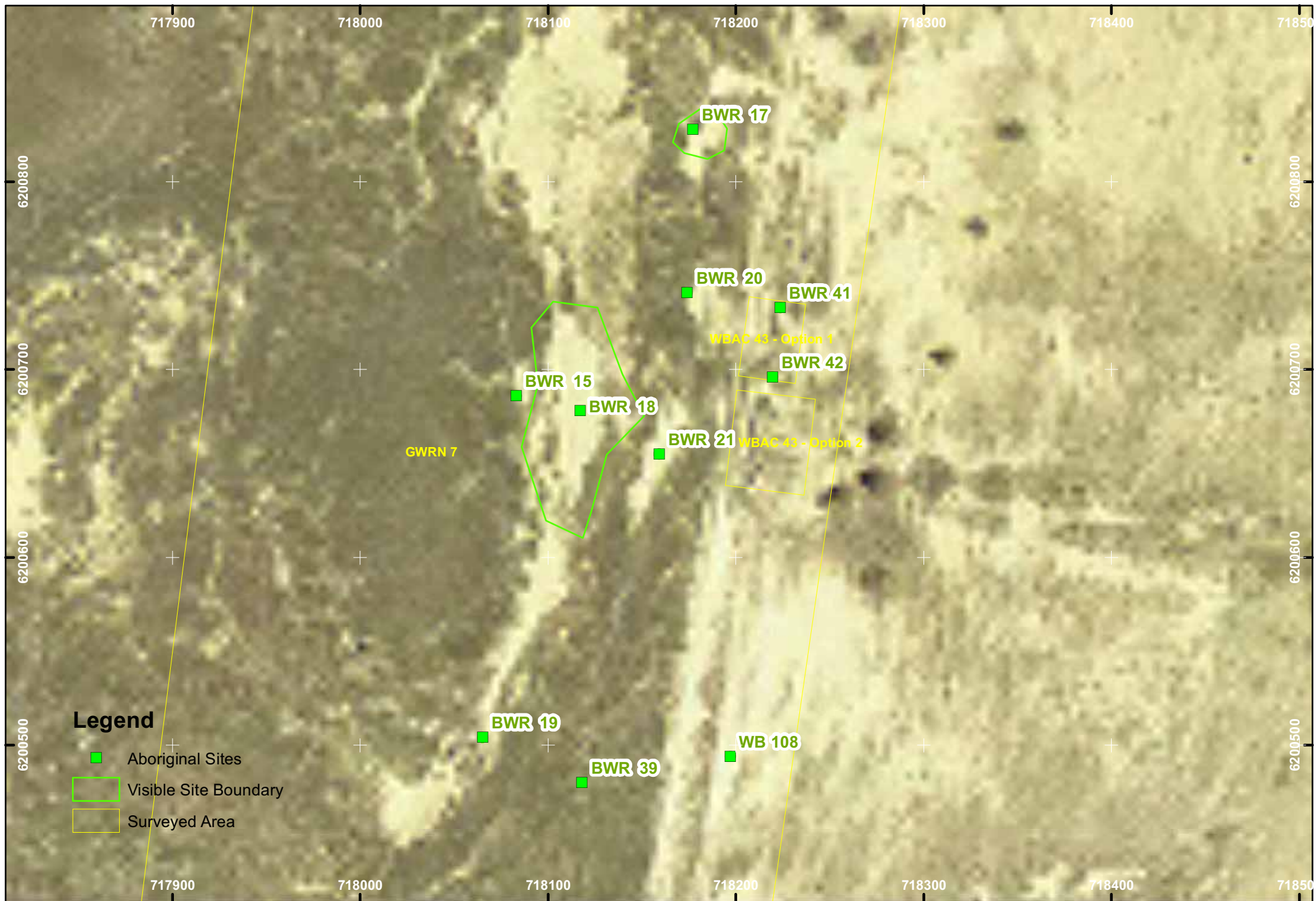


Legend

- Aboriginal Sites
- Visible Site Boundary
- Surveyed Area













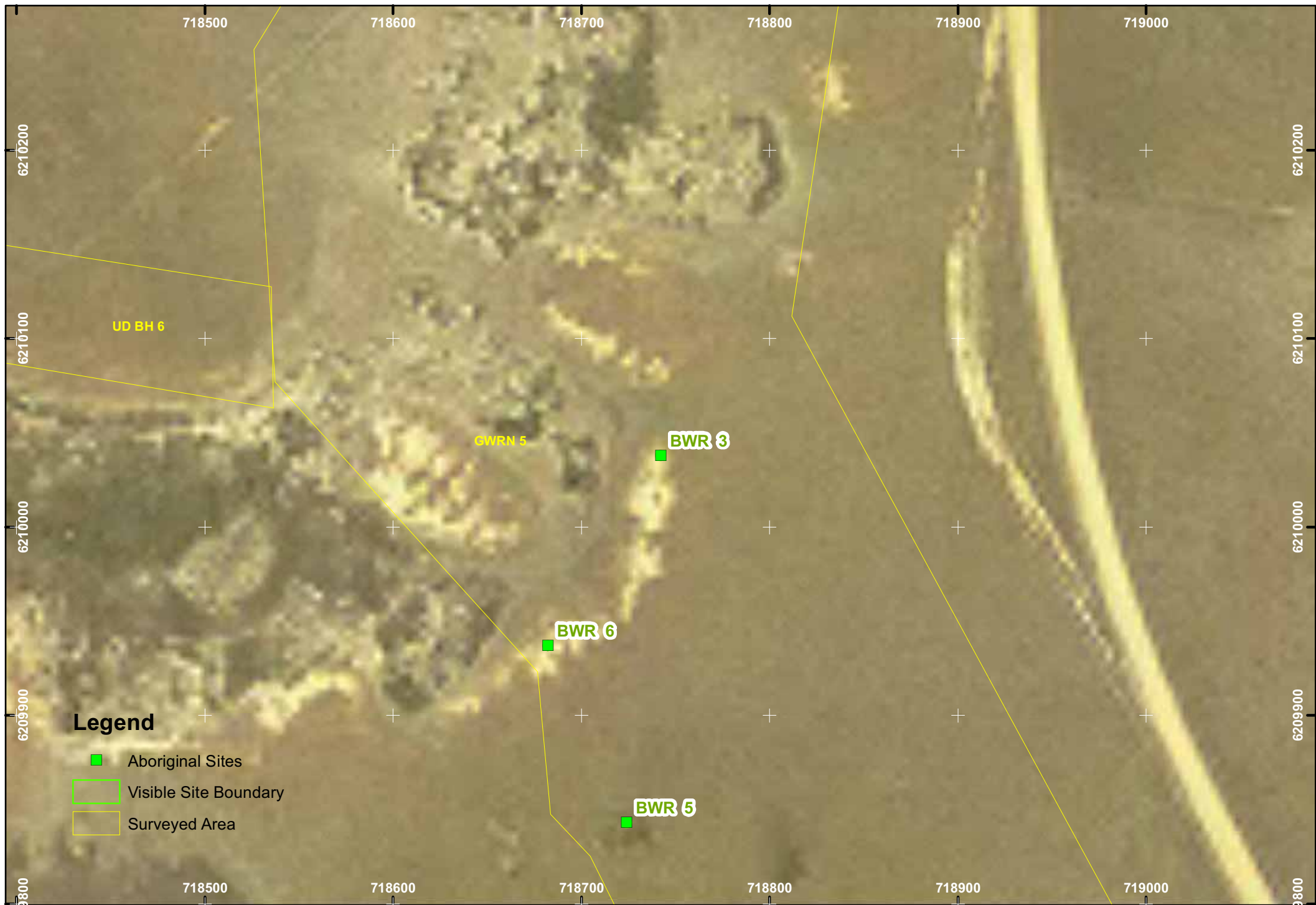


















Legend

- Aboriginal Sites
- + Visible Site Boundary
- Surveyed Area

IB 5 - AA

GWRN 9

BWR 32

GWRN 8

BWR 31

BWR 30

BH 3

6213800 718900 719000 719100 719200 719300 719400 719500 6213800

6213700 6213700 6213700 6213700 6213700 6213700 6213700 6213700

6213600 6213600 6213600 6213600 6213600 6213600 6213600 6213600

6213500 6213500 6213500 6213500 6213500 6213500 6213500 6213500

6213400 6213400 6213400 6213400 6213400 6213400 6213400 6213400

718900 719000 719100 719200 719300 719400 719500 719500







