NOWA NOWA IRON PROJECT

ATTACHMENT 10 :

5 MILE DEPOSIT AREA: ABORIGINAL CULTURAL HERITAGE MANAGEMENT PLAN INTERIM REPORT

Prepared by Dr. Tim Stone in association
with Earth Systems
for Eastern Iron Limited

September 2013

TABLE OF CONTENTS

ANNEXES

1. INTRODUCTION

Eastern Iron Limited (EIL), via its subsidiary Gippsland Iron Pty Ltd, proposes to mine iron ore from a deposit alongside the Nowa Nowa-Buchan Road, approximately 7 km north of the town of Nowa Nowa in East Gippsland (Figure 1). Accordingly, EIL is preparing a Cultural Heritage Management Plan (CHMP) for the proposed activity to comply with the *Aboriginal Heritage Act 2006* and its *Aboriginal Heritage Regulations 2007* (see Section 2 below). A Notice of Intention to Prepare a CHMP has been submitted to the Office of Aboriginal Affairs Victoria (OAAV) for this project, with a copy also sent to the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC).

Earth Systems Pty. Ltd. on behalf of the Sponsor (EIL) engaged Dr. Tim Stone as Cultural Heritage Advisor for the project. Dr. Stone is a qualified archaeologist and geomorphologist, with 26 years experience in cultural heritage management. Specifically, Dr. Stone has a BA (Hons, completed 1985) and M.Sc (completed 1992) from the Australian National University and a PhD (completed 2006) from the University of Melbourne. His three degrees combined Australian archaeology and geomorphology, with a specialization in radiometric dating for his PhD.

Cornelia de Rochefort who is also a qualified archaeologist was engaged by the Cultural Heritage Advisor to assist with the fieldwork and preparation of the CHMP. Ms de Rochefort has a BA (Hons, completed 2003) and a B.Sc (completed 2004). The degrees majoring in archaeology, botany and soil science were undertaken at La Trobe University and the University of Sydney, with Honours at the University of Sydney combining archaeology and microscopic science. She was awarded the Leeper Soil Prize at La Trobe University in 2002.

The GLaWAC is the relevant Registered Aboriginal Party (RAP) and will evaluate the CHMP when it is completed, with a view to approving it.

Representatives of the GLaWAC were engaged by the Cultural Heritage Advisor to participate in the fieldwork, identify Aboriginal cultural heritage values and assist with consulting the local Aboriginal community (see Section 5.1 below).

This interim report describes the results of the standard assessment (surface survey) component of the CHMP. The final CHMP, including a complex assessment will be completed concurrent with the permitting process for the project.

2. STATUTORY PROTECTION

The *Aboriginal Heritage Act* 2006 and its *Aboriginal Heritage Regulations* 2007 are of particular relevance to the proposed development. A core component of this Act is the preparation of Cultural Heritage Management Plans (CHMPs), which will be required under certain circumstances for high impact activities that require statutory authorisation under the Victorian Planning Provisions. CHMPs must meet prescribed standards and be approved by OAAV before they can be used to support permit applications to local government or other agencies.

The Act also establishes the Aboriginal Heritage Council, which invites Aboriginal community groups with cultural heritage interests in particular parts of the State to become Registered Aboriginal Parties (RAPs). The RAP(s) may elect to evaluate a CHMP in place of OAAV. The RAP for the Nowa Nowa study area is the GLaWAC based in Bairnsdale.

Under regulation 6, a CHMP is required for a proposed activity, if:

> (a) all or part of the activity area for the activity is an area of cultural heritage sensitivity; and
>
> (b) all or part of the activity is a high impact activity.

According to regulation 23(1), any land within 200 m of a waterway (not subject to significant ground disturbance) is an area of cultural heritage sensitivity. Additionally, land (not subject to significant ground disturbance) within 50 metres of a registered cultural heritage place is an area of cultural heritage sensitivity pursuant to regulation 22(1).

The first prerequisite is met by the proposed mining of the 5 Mile Deposit Area because the proposed mine footprint intersects three waterways (Tomato Creek, Gap Creek and Harris Creek) that form areas of cultural heritage sensitivity. The second prerequisite is met because mining is a high impact activity. Accordingly, the CHMP is mandatory.

3. ENVIRONMENTAL SETTING

The proposed activity area is located in the dissected ridges of the East Gippsland coastal hinterland (part of the LCC's [1985] Wairewa block), approximately 300 km east of Melbourne and 20 km from the shoreline of Bass Strait (Figure 1). The Boggy Creek drains the dissected ridges north of Nowa Nowa, including the watershed that contains the proposed activity area. Geologically, the course of the Boggy Creek downstream of Nowa Nowa is controlled by uplifted Late Tertiary sedimentary rocks (Seaspray and Sale Groups). The geology of the upper catchment is complex, although primarily Palaeozoic sedimentary rocks capped by Devonian volcanics. The proposed activity area is mostly composed of Ordovician slate and Devonian rhyodacite, which is part of a shear zone that formed the iron ore (Bell, 1959).

Long-term weathering and erosion produced the landforms that are characteristic of the region today, in particular, the dissected ridges. The soils of the hills and ridgelines are mostly acidic, with red and brown gradational soils on the Ordovician parent material or red-brown/yellow-brown duplex soils, where drier (LCC, 1985).

Currently, the proposed activity area consists of five inter-connected parts plus access roads. Below is a brief description of each part.

Proposed 5 Mile Pit: This is the location of the iron ore deposit, which is on a heavily-logged ridgeline between Tomato Creek and Gap Creek (Plate 1).

Proposed 5 Mile Waste Rock Dump: This straddles the v-shaped valley of the head of Gap Creek. The valley sides are rocky and heavily-logged.

Mine Infrastructure: This follows the crest of a ridgeline that Tomato Track follows, between the proposed mine and the Bruthen-Buchan Road. The ridge crest has been heavily-logged and is timbered with tall regrowth.

Low Grade Ore Stockpile: This is located to the south of the Proposed 5 Mile Waste Rock Dump and east of the Proposed 5 Mile Pit, intersecting Tomato Creek and the existing Nowa Nowa-Buchan Road.

Magazine Storage Facility: This sits on a slope above the junction of Harris Creek and Gap Creeks.

Bypass Road: This is a proposed detour of the Nowa Nowa-Buchan Road around the proposed mine and waste dump, partly utilizing the existing Five Mile Road. The proposed bypass road follows a drainage divide at the head of Tomato and Gap Creek.

Aboriginal occupation sites are highly likely in the lower reaches of Tomato and Gap Creek and Harris Creek, which is a major tributary of the Boggy Creek. These creeks would have been a reliable source of water in most seasons and Aboriginal campsites can be expected on the gentle ridge slopes overlooking them.

Aboriginal quarry sites are also possible because of the complex geology in this part of East Gippsland. Scarred trees are unlikely to be present because these would have been destroyed during clear-felling operations. Similarly, any stone artefact sites would have been heavily impacted by these operations.

Plate 1. Proposed 5 Mile Pit on ridgetop just off Nowa Nowa-Buchan Road.

Plate 2. Valley of Tomato Creek.

4. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Previous archaeological studies of sites in East Gippsland have demonstrated Aboriginal occupation dating back to the height of the last glacial period some 18,000 years ago. The oldest sequence in the region comes from Cloggs Cave near Buchan (Flood, 1980). The deposit in this cave shows intensive Aboriginal occupation of the site from 17,720±840 years Before Present (ANU 1044) to 8,720±230 years BP (ANU 1011). However, later phases indicate only intermittent occupation. The stone assemblages from the earlier phases are dominated by large, steep-edged scrapers and unifacial pebble tools. Later industries comprise geometric microliths, a few Bondi points, bipolar scaled pieces and small low-angled scrapers.

Flood (1980) suggested that Aboriginal occupation of the Southern Uplands was highly seasonal with people wintering in the lower altitudes and only going into the higher mountains in summer to feast on Bogong moths. Flood also thought that the Southern Uplands contained few sites because of a paucity of resources. However, investigations by Chapman (1977) at Lake Jindabyne and Paton and Macfarlane (1988) at Thredbo, for example, have shown that Flood's model is flawed mainly because she underestimated the volume of sites in the region.

On the Victorian side of the border, archaeological surveys undertaken by Hall (1992) and Hunt (1993) show that the regional archaeological record is indeed richer than first imagined. Hall located 124 stone artefact sites in the forests of the Snowy River National Park. However, some 76% of these sites had five or fewer visible artefacts. Hall found that the highest concentrations of artefacts were on gentle slopes adjacent to drainage lines. On ridgelines the density of artefacts was constantly low. Only one rockshelter was recorded by Hall and he commented on the rarity of suitable geological strata. Two trees with scars were also recorded.

Hunt's (1993) survey of four separate forest areas in East Gippsland located 157 Aboriginal archaeological sites including a silcrete quarry south of Buchan. One of the areas he surveyed was the Errinundra Plateau. A total of 32 stone artefact scatters were located in this area with the highest artefact densities occurring along stream flats and on adjoining gentle slopes. The stone artefact assemblages he recorded were dominated by quartz and chert waste flakes with only a few showing signs of backing or retouch. At one site a sandstone anvil was recorded.

4.1 Aboriginal Sites in the Vicinity of Nowa Nowa

Closer to Nowa Nowa, Wood and Lance (1990) assessed the archaeological sensitivity of the proposed Sydney to Melbourne Optic Fibre Cable (OFC) route, where it passed alongside the Bruthen-Nowa Nowa Road and between Nowa Nowa and Mount Nowa Nowa. Clark (2000) subsequently determined that installation had disturbed two Aboriginal sites in a powerline easement at the Stony Creek crossing. The disturbed sites are not in the vicinity of the Nowa Nowa 5 Mile Deposit Area.

McNiven and Russell (1993) located one isolated stone artefact along a proposed OFC route that followed a track leading to Mount Nowa Nowa, ~3 km north of Nowa Nowa. However, this artefact was never registered with AAV (Clark, 2001).

Clark et al. (2000) and Clark (2001) surveyed a proposed road re-alignment of the Bruthen-Nowa Nowa Road west of the Nowa Nowa township locating six isolated stone artefacts (8522-0216 to 0221, VAHR), all within 300 m of creek lines. Subsurface testing in the vicinity of the finds was recommended prior to road works because of poor ground surface visibility.

Clark and Lewis (2001) later assessed a road re-alignment within the Nowa Nowa township. During their survey, one isolated stone artefact (8522-0213, VAHR) and a

zone of archaeological sensitivity were identified. Rather than subsurface testing, Clark and Lewis (2001) recommended monitoring of initial earth works by an archaeologist and Aboriginal community member for artefact finds. Conducting monitoring instead of subsurface testing is an unacceptable practice under the *Aboriginal Heritage Act* 2006.

Murphy (2006) surveyed the proposed Lakes Entrance to Nowa Nowa pipeline route locating two Aboriginal and two historic cultural heritage sites. The two Aboriginal sites are low density stone artefact scatters, both located south of the Nowa Nowa township and highly disturbed. Murphy (2006) concluded that the places most likely to contain high numbers of stone artefacts are within 100m of Stony Creek (also known as Toorloo Arm) and Boggy Creek at Nowa Nowa.

In short, few systematic archaeological studies have been undertaken in the vicinity of Nowa Nowa and as a consequence the archaeological record of this part of East Gippsland is poorly understood. Stone artefact scatters representing Aboriginal campsites appear to be the most common site type.

4.2 Aboriginal Sites in the Vicinity of the 5 Mile Deposit Area

According to the Victorian Aboriginal Heritage Register (VAHR), no Aboriginal sites have been recorded inside the 5 Mile Deposit Area. However, 40 sites have been located within a ~10 km radius of the mine site, most within 200 m of watercourses. Site types include stone artefact scatters, a quarry/raw material source, scarred trees and an Aboriginal historical place. Clark et al. (2000) recorded the majority of these sites during their survey of the Bruthen-Nowa Nowa Road area for VicRoads. Most are located in and around the township of Nowa Nowa.

The closest known Aboriginal sites to the 5 Mile Deposit Area are:

- Surface scatters of fine grained chipped stone flakes, with evidence of a silcrete source area, along Junction Creek track ; and
- Surface scatters of fine grained chipped stone flakes along Lemon Hill Road (Hunt, undated).

These sites are located north of Wairewa, ~3 km east of the 5 Mile Deposit Area.

Figure 1 of Annex A illustrates cultural heritage sites previously recorded in earlier investigations.

5. METHODOLOGY

5.1 Preliminary Aboriginal consultation

On 18 March 2013, Cultural Heritage Advisor (Tim Stone) and GLaWAC Cultural Coordinator (Barry Kenny) held a Project Establishment Meeting at the RAP office in Bairnsdale. The proposed activity, previous Aboriginal site investigations undertaken in the region and the proposed investigation were discussed.

Following the Project Establishment Meeting, the GLaWAC arranged for Cory Simpson, Peter Hood and Nicholas Moffat to participate in the standard assessment. The GLaWAC representatives, Cultural Heritage Advisor and Project Archaeologist surveyed the surface of the proposed activity area from 15-19 April, 2013.

On 3 May 2013, Tim Stone met with Lloyd Hood in Moe to discuss the results of the standard assessment and determine RAP requirements going forward. Barry Kenny had other commitments that day and was unavailable to attend the meeting. In short, the RAP requires a complex assessment as the next stage of investigation.

5.2 Survey strategy

The Cultural Heritage Advisor (Tim Stone), Assistant Archaeologist (Cornelia de Rochefort) and GLaWAC representatives (Corey Simpson, Peter Hood and Nicholas Moffat) surveyed the five inter-connected parts of the proposed activity area plus proposed access roads on foot over a five day period.

The surface survey was designed to achieve two main results. Firstly, to intensively inspect all parts of the proposed activity area for Aboriginal sites such as stone artefact scatters, isolated artefacts and scarred trees. The second main aim of the survey was to investigate local landforms for their Aboriginal site potential, in order to identify particular features that might warrant subsurface testing.

Below is a more detailed account of the survey methods used in each part and the conditions experienced.

Proposed 5 Mile Pit: Survey of this area focused on the clearing in the middle of the area, where ground surface visibility was almost 100 % (Plate 1). Tomato Track and side tracks were also examined for archaeological traces. The team also sampled the lower slopes of the ridge, which were thickly-wooded with regrowth.

Proposed 5 Mile Waste Dump: Ground surface visibility in this survey area was <5 %. The team descended the v-shaped valley of Gap Creek and walked the heavily logged valley sides ~30 m apart. The step was repeated on the opposite side of the creek. Upturned tree stumps and creek banks were closely inspected.

Mine Infrastructure: Compared to other parts of the proposed activity area, the ridge crest followed by Tomato Track is relatively open and the team was able to walk the survey corridor ~30 m apart, beginning on one side of Tomato Track and returning on the other. Nonetheless, ground surface visibility was still very poor (~5 %) among the tall regrowth, with the exception of Tomato Track.

Bypass Road: The team walked the proposed Bypass Road route ~2 m apart. Ground surface visibility was very high (70-100 %) along the existing Five Mile Road and secondary tracks that the proposed route follows.

The team also walked the three proposed access roads that connect the core activity areas, including the crossings of Harris Creek made by the proposed mine access road and the existing Bruthen-Buchan Road. The Harris Creek crossing comprised thick regrowth, although a powerline easement on the east side of the Bruthen-Buchan Road afforded some visibility.

5.3 Recording methods

For this investigation Aboriginal sites were defined as any location or landform where evidence of Aboriginal activity was exposed. When an Aboriginal site was located the following variables were recorded:

Site designation: sites were allocated names according to their geographic location i.e. Harris Creek 1.
Site type: open campsites represented by scatters of stone artefacts were the only site type recorded.
Grid co-ordinates: this information was derived from a hand-held Global Positioning System (GPS). GDA 94 was the grid reference system used in recording sites.
Environmental setting: This describes the sites environmental context including such features as geomorphology, vegetation and local hydrology.
Aspect: direction at which the site faces. Aspect is often thought to be a key determinant of site location.

Site size: refers to the dimensions over which artefacts are visible. A larger site size may be inferred based on a consideration of landscape factors.
Visibility: a measurement of the conditions of ground surface visibility in the survey area. Ground visibility conditions will affect whether sites are detected and whether their full extent has been recorded.
Site contents: This is a description of the artefacts at the site. With stone artefact scatters the features recorded included raw material, artefact type, artefact dimensions, presence of retouch or use wear and any general comments considered relevant.

When surveying along Tomato Track, the team collected artefacts to show other team members and each small assemblage of artefacts collected from the track was photographed. Rather than return the artefacts to their original positions (which was not possible, in any case), the artefacts were placed off the track in positions where they could be found again, once fieldwork is resumed.

6. RESULTS AND DISCUSSION

Two Aboriginal sites were located during the survey (see Figure 2 for location). Both are Aboriginal campsites represented by scatters of stone artefacts located on ridgetops in the vicinity of the confluence of Harris, Tomato and Gap creeks. The location of one site (Harris Creek 1) is cut by the proposed access road from the Bruthen-Buchan Road. Below is a more detailed description of the finds that were made.

No Aboriginal sites were located in those inter-connected parts of the proposed activity area upstream of the creek convergence. The only part with Aboriginal site potential was the proposed Mine Infrastructure corridor, which follows a ridgeline between Tomato and Gap Creek. However, no Aboriginal cultural heritage was located on this landform, despite high ground surface visibility along Tomato Track.

Other parts of the proposed activity area occupy rugged terrain cut only by dry headwater streams. The steep, v-shaped creek valleys proposed for the waste dump and temporary low grade ore stockpile present unlikely Aboriginal site locations. The watershed followed by the proposed Bypass Road is even more remote from potable water.

The proposed 5 Mile Pit area could have been an Aboriginal occupation site because it has a gently sloping ridgetop at its core, with access to ephemeral water in Tomato and

Gap creeks. However, no Aboriginal cultural heritage was located on the ridgetop, where vehicle traffic has denuded the landform (Plate 1).

6.1 Harris Creek 1

Harris Creek 1 is a stone artefact scatter located on a ridge separating Harris Creek from Tomato Creek, above the creek confluence. A total of 18 stone artefacts were identified along a ~100 m long stretch of Tomato Track, which cuts the ridge slopes (Plate 3). Artefact exposures were recorded with a hand-held GPS (GDA 94) at the following three coordinates within this site:

1. 597293 5832146; 2. 597235 5832152; 3. 597218 5832149.

The artefact assemblage recorded on this part of Tomato Track is typical of large, open campsites in the region (Plate 4). Most of the artefacts are waste flakes and flaked pieces <4 cm struck from silcrete (~62 %) and chert (~16 %). Other raw materials present include chalcedony, siltstone and fine-grained volcanics. A silcrete core was the only other artefact type represented in the recorded assemblage.

Plate 3. Artefact exposure on Tomato Track at Harris Creek 1.

Plate 4. Harris Creek 1 finds. Silcrete core (top left), large chalcedony piece (far right).

Tomato Track where the finds were made may simply be a window into a much larger 'place extent' (site). The total size of the site is yet to be determined. Only subsurface testing undertaken as part of a complex assessment can determine the size, extent and contents of the site. Consequently, a formal assessment of its significance and a management strategy for it cannot be formulated at this early stage.

6.2 Tomato Creek 1

Tomato Creek 1 is a stone artefact scatter located on a ridge overlooking the confluence of Harris Creek and Tomato Creek, on the west side of Tomato Creek. A total of 23 stone artefacts were identified along a ~50 m long stretch of Tomato Track, where it departs from the proposed road access and intersects a cleared powerline easement (Plate 5). Artefact exposures were recorded with a hand-held GPS (GDA 94) at:

1. 597051 5832161; 2. 597075 5832147; 3. 597101 5832150.

Plate 6 shows that the artefact assemblage consists of waste flakes and flaked pieces <4 cm struck from silcrete (~82 %) and chert (~18 %). Silcrete appears to be outcropping as low-lying sheet rock at the site, although there is nothing to suggest that this particular outcrop has been used as a raw material source.

Currently, Tomato Creek 1 is not located in the proposed activity area and, in fact, is separated from the proposed access road by the valley of Tomato Creek. If this remains the case upon completion of the mine design, no further investigation of the site will be required. EIL need only ensure that the site is avoided.

If EIL propose any works that might impact the site landform on the west side of Tomato Creek, complex assessment will be required beforehand.

Plate 5. Artefact exposure on Tomato Track at Tomato Creek 1.

Plate 6. Tomato Creek 1 artefact assemblage.

Figure 2 of Annex A illustrates the locations of Cultural Heritage sites recorded in the surface survey.

7. RECOMMENDATIONS

Based on the results of this assessment and consultation with the GLaWAC, it is recommended that:

- The CHMP (no. 12547) underway for the Nowa Nowa 5 Mile Deposit Area should proceed to a complex assessment, as determined by the results of the standard assessment and wishes of the GLaWAC.

- Before proceeding to a complex assessment, EIL should finalize its mine design for the 5 Mile Deposit Area and prepare an activity description for the purposes of the CHMP.

- Complex assessment is required to determine the place extent of Harris Creek 1, assess its Aboriginal and scientific significance and identify culturally-

appropriate impact mitigation measures. At this stage, it is too early to plan for site avoidance because the extent of the Aboriginal place is not yet known. Tomato Creek 1 will not require complex assessment as the site landform (a ridge on the west side of Tomato Creek) is not expected to be directly impacted.

- The GLaWAC should be consulted further about any other landforms in the proposed activity area that should be subject to complex assessment. If GLaWAC request additional subsurface testing, it is likely that this will be limited to the ridgeline proposed for the Mine Infrastructure.

- If, at any stage, works associated with development of the mine are proposed that extend outside the currently proposed inter-connected activity areas, these new work areas should be incorporated into the existing CHMP. The GLaWAC must be consulted about any such variation and the CHMP process (desktop and field investigation) repeated, where required. Alternatively, EIL may elect to undertake additional CHMPs, as appropriate.

- EIL should maintain its dialogue with the GLaWAC and continue to consult it on all matters pertaining to the management of Aboriginal cultural heritage throughout the course of the project. EIL should invite GLaWAC representatives to any relevant meetings/discussions regarding the project.

- EIL should also keep the Cultural Heritage Advisor and Earth Systems Pty. Ltd. appraised of developments with the project.

- A copy of this interim report should be sent to Barry Kenny of the GLaWAC.

REFERENCES

Bell, G. 1959. The iron ore deposits of Nowa Nowa, eastern Gippsland. *Bulletins of the Geological Survey of Victoria*, No. 57. Department of Mines, Melbourne.

Chapman, V. 1977. *The Jindabyne Valley in Southern Uplands prehistory: an archaeological investigation.* Unpublished MA thesis, ANU.

Clark, V., Lane, S. and Stevens, A. 2000. *East Gippsland Omeo Highway Bruthen-Nowa Nowa Road and Princes Highway East archaeological and heritage study*. Report to VicRoads.

Clark, V. 2001. *West of Nowa Nowa upgrade of the intersection of Bruthen–Nowa Nowa Road and Princes Highway East archaeological and cultural heritage study*. Report to VicRoads.

Clark, V. and Lewis, K. 2001. *Nowa Nowa Township: Archaeological and Cultural Heritage Study*. Report to VicRoads.

Flood, J. 1980. *The Moth Hunters.* Australian Institute of Aboriginal Studies.

Hall, R. 1992. *Far East Gippsland archaeological survey.* Report to Aboriginal Affairs Victoria.

Hunt, P. 1993. *Hinterland forests of East Gippsland: An archaeological survey of the East Gippsland Forest Management Area.* A report for the Department of Conservation and Natural Resources, Victoria and the Australian Heritage Commission.

LCC, 1985. East Gippsland area review. Land Conservation Council, Melbourne.

Murphy, A. 2006. *Lakes Entrance to Nowa Nowa Pipeline Route: Cultural Heritage Assessment*. A report to Earth Tech Engineering Pty Ltd on behalf of East Gippsland Water.

McNiven, I. and Russell, LW. 1993. *A predictive archaeological impact assessment of the proposed OFCR between Kyabram and Stanhope, North Central Victoria*. Report to Telecom.

Paton, R. and Macfarlane, I. 1988. *Results of preliminary salvage excavation at Thredbo Valley.* Report to Faraba Pty. Ltd.

Wood, V. and Lance, A. 1990. *Sydney–Melbourne optical fibre route: impact to archaeological sites*. Report to Telecom Australia.

ANNEX A - PLANS

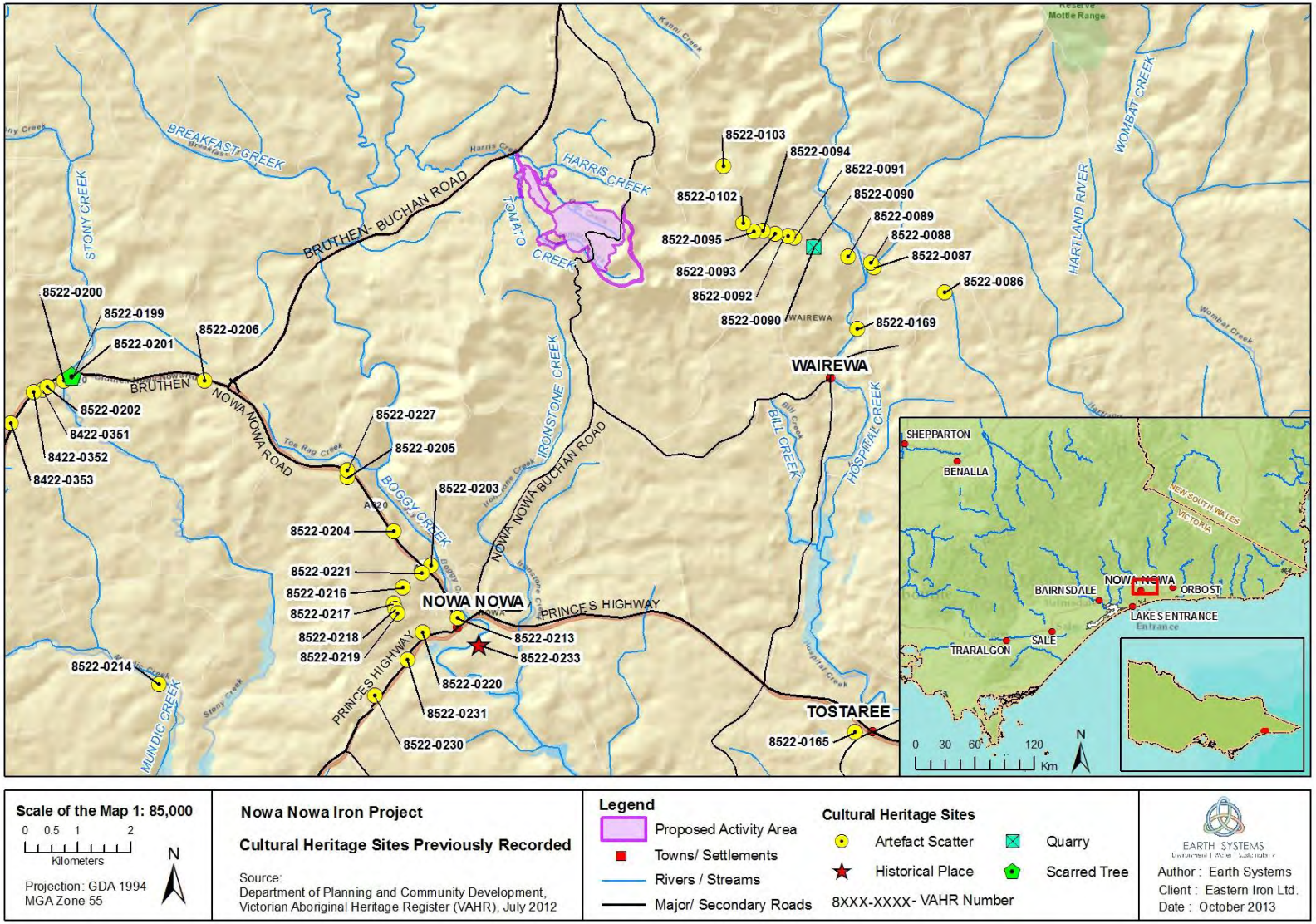

Figure 1 Cultural Heritage Sites Previously Recorded

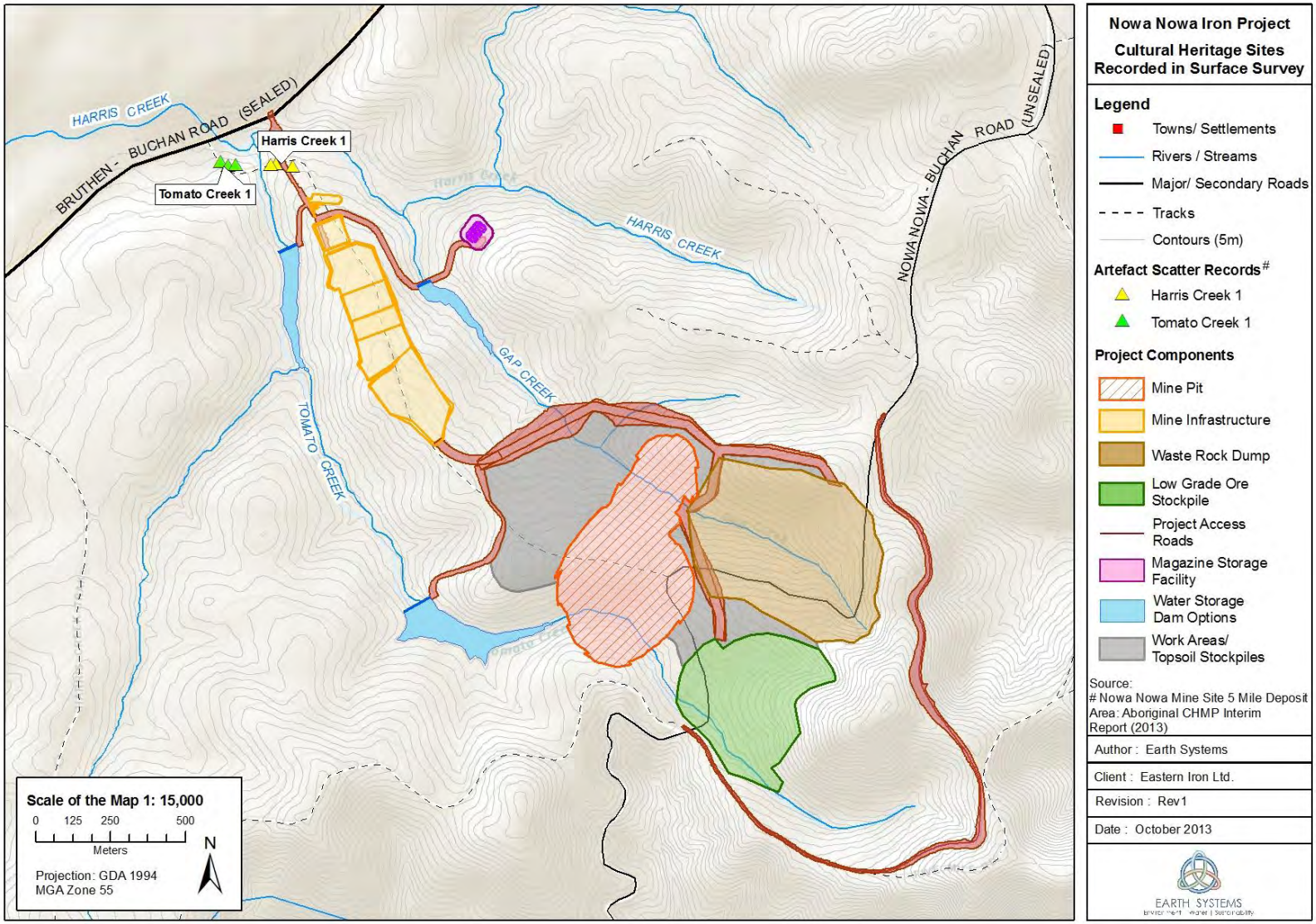

Figure 2 Cultural Heritage Sites Recorded in Surface Survey