



Silverton Wind Farm

Goat Management Plan 2018 - 2021

FINAL REPORT

Prepared for GE Capital

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1 Introduction

1.1 Background

The Silverton Wind Farm is located approximately 5 kilometres north of Silverton and 25 kilometres northwest of Broken Hill in the far west of NSW. The Silverton Wind Farm was approved by the then Minister for Planning in May 2009. The Wind Farm was declared to be a critical infrastructure project under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act), as an energy generating development with the capacity to generate at least 250MW.

Project and Concept Approval was granted in May 2009, pursuant to Part 3A of the EP&A Act. Further modification (Modification 3) was then approved in December 2016 in accordance with Clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000* and the transitional arrangements of the EP&A Act. Approval was granted for the modifications to the project approval (08_022 MOD 3) and concept approval (08_0022MOD2) subject to the conditions set out in the instrument of approval.

Condition 18(c) of the Project Approval requires that prior to the commencement of construction, the Proponent must prepare a Biodiversity Management Plan for the project, which includes a Goat Management Plan for the site. This plan has been developed to satisfy that condition. The Statement of Commitments also includes preparation and implementation of a Goat Management Plan across vegetation community types, with a particular focus on Porcupine Grass Sparse Woodland (PGSW), a locally restricted and threatened plant community characterized by a sparse overstorey of Red Mallee and Gum Coolabah with an understorey dominated by hummock grassland. The Statement of Commitments also states that the Goat Management Plan is to be developed with input from the Department of Planning, (former) Department of Environment and Climate Change, (former) Western Catchment Management Authority, (former) Department of Primary Industries, (former) Broken Hill Rural Lands Protection Board and relevant landholders.

This plan has been developed in consultation with:

- Department of Planning and Environment
- Office of Environment and Heritage
- Western Local Lands Services
- Department of Industry - Land
- Blore and Nigel and Greg Lawrence (relevant land lease holderlease holders)

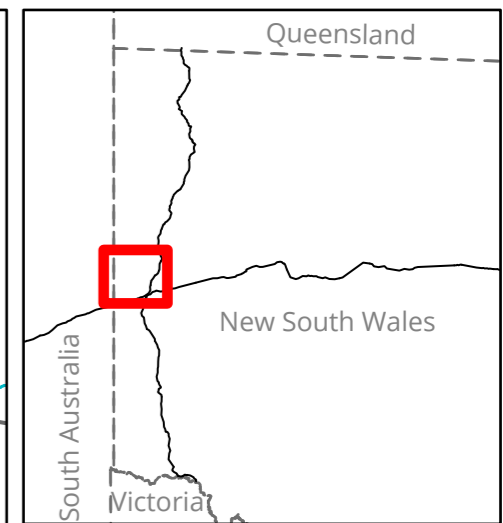
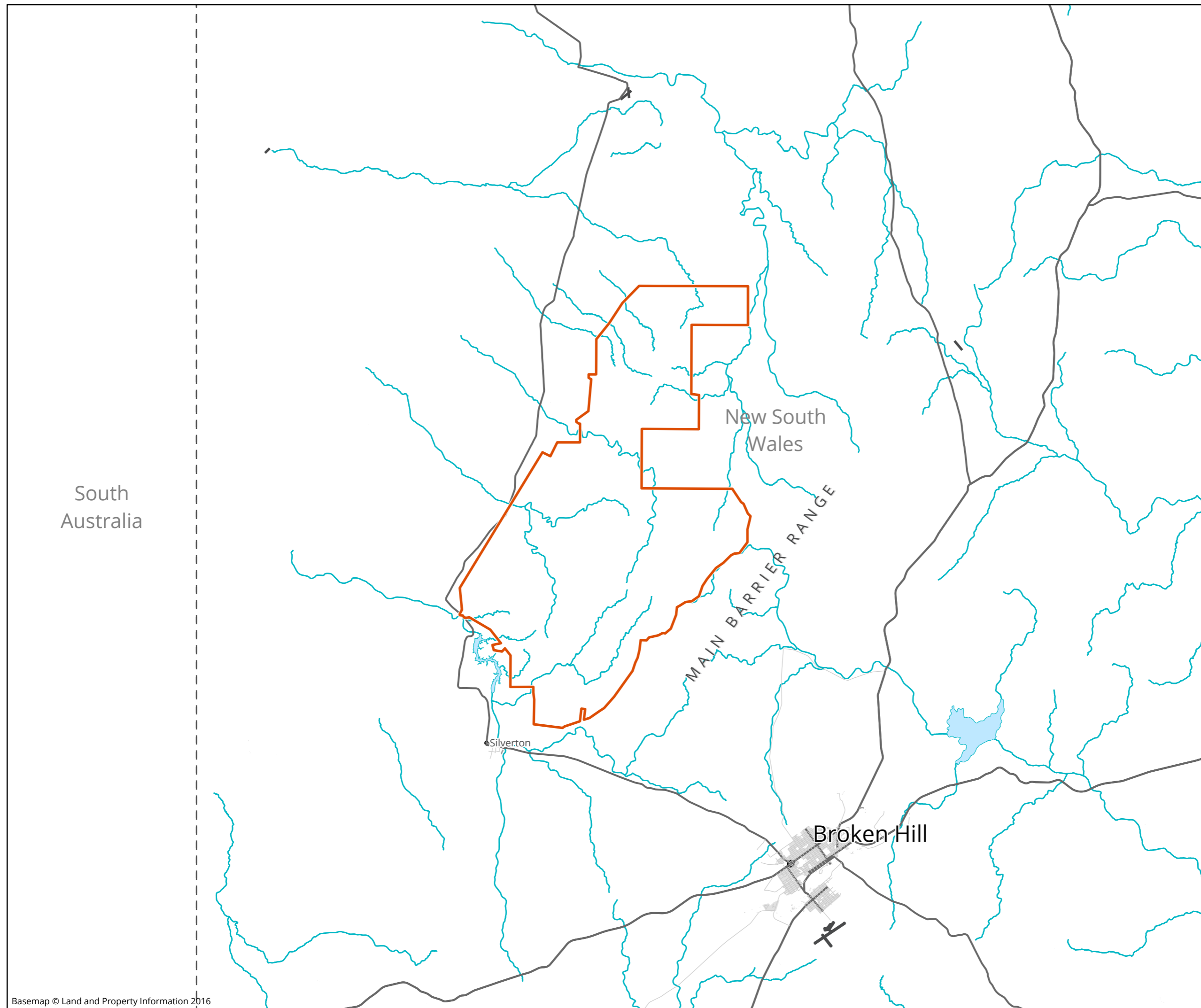
1.2 Purpose

The Goat Management Plan provides an overview of the management of goats across the Silverton Wind Farm. It was developed by a suitably qualified expert (Dr Rachel Clancy, Environmental Planner, Biosis) and provides a description of the grazing pressure and land degradation caused by Feral Goats *Capra hircus*, as well as the impact of Feral Goats on biodiversity. Details are also provided in relation to proposed management methods such as fencing and trapped water points. A management approach is outlined, which includes goat exclusion periods, trapping, and mustering aimed at reducing the grazing pressure on vegetation to improve vegetation extent and health to achieve a net gain in range condition. The management of goats across the Silverton Wind Farm will follow an adaptive management approach. This approach will allow for the collection of baseline data, followed by annual monitoring for three years and a review of the management approach after the initial three-year period to ensure there is a net gain in the

conservation value of this community. Management actions will be revised following each annual monitoring period to continually improve on-ground management and ecological outcomes.

1.3 Relationship to other plans

The specific management actions, monitoring and adaptive management responses in relation to goat management are described in the implementation section of the Biodiversity Adaptive Management Plan (BAMP) (Biosis 2018a). The BAMP incorporates the methods, actions, monitoring and reporting identified for the Biodiversity Management Plan, Goat Management Plan, Porcupine Grass Sparse Woodland Recovery Plan, Barrier Range Dragon Management Plan and Vegetation Management Plan into one cohesive implementation document. This allows for a comprehensive approach to on-ground monitoring and management of biodiversity at the Silverton Wind Farm site. The Goat Management Plan is to be read in conjunction with the BAMP.



Legend


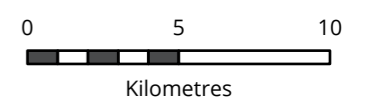
 Study area

Figure 1 - Location of the study area



Scale: 1:1:250,000@ A3
 Coordinate System: GDA 1994 MGA Zone 54



Matter: 26380
 Checked by RW, drawn by: ARL
 Last edited by: alongmire on 04 September 2018
 Location: P:\26300s\26380\Mapping\26380_PGSW_GMP

2 Feral goats

2.1 Goats

Feral Goats *Capra hircus* pose a significant environmental threat and are listed as a key threatening process under the Commonwealth EPBC Act and NSW BC Act. Feral Goats can have substantial impacts on vegetation and habitat structure through overgrazing and trampling, are a major contributor to soil erosion and compaction, degradation of the surface soil cryptogamic crust, and compete with native fauna for resources such as food, water and habitat. The largest populations of Feral Goats in Australia exist in the arid and semi-arid regions where created watering points and predator control have led to more favourable conditions for this species (Parkes *et al.* 1996). Currently, Feral Goats occur throughout the Silverton Wind Farm and broader landscape and have the capacity to reach high densities and cause serious damage if unmanaged.

Feral Goats are generalist herbivores that browse shrub and tree leaves and stems preferentially, but will also consume other plant material including twigs, bark, flowers, fruit and roots, as well as grasses and forbs (Parkes *et al.* 1996; DEWHA 2008; Russell *et al.* 2011). The ability of Feral Goats to feed on low nutrient fibrous vegetation enables them to continue to feed under adverse environmental conditions (DEWHA 2008). Home ranges of Feral Goats centre on water sources and where they are unable to extract enough water from foliage and dew, individuals need to drink every two to three days during summer (Dawson *et al.* 1975 and Fleming 2004 cited in DEWHA 2008). The creation of artificial watering points in arid and semi-arid rangelands of Western NSW has allowed Feral Goats to expand to areas in the landscape that would not have otherwise been possible (Fensham and Fairfax 2008).

During periods of good climatic conditions, harvested goat populations can increase by over 50 per cent annually due to a number of advantageous biological traits. These traits include becoming sexually mature at an early age, extended breeding seasons (two per year), conception during lactation and high rates of twin or triplet births (Parkes *et al.* 1996).

2.2 Key threatening process

Feral goats are listed as a key threatening process in two core acts of Parliament:

- Competition and land degradation by unmanaged goats (Commonwealth EPBC Act).
- Competition and habitat degradation by Feral Goats, *Carpa hircus* Linnaeus 1758 (New South Wales BC Act).

A national threat abatement plan has been prepared by the Commonwealth (DEWHA 2008). Most evidence of unmanaged goat impacts on vegetation is anecdotal or is confounded due to the presence of other grazing animals such as Sheep *Ovis aries*, especially by specialist browse takers such as the African breeds Dorper and Demara, as well as by Kangaroos *Macropus* spp.. Grazing by introduced herbivores can have effects such as:

- A general reduction in vegetation cover.
- An increase in the amount of bare ground, changes in the composition of perennial and annual vegetation through selective grazing of palatable species (Landsberg *et al.* 1997, Ludwig *et al.* 1997 cited in DEWHA 2008).
- Loss of soil nutrients (Sparrow *et al.* 2003 cited in DEWHA 2008).

- Changes in the density and composition of the seed bank (Landsberg et al. 1997, Kinloch and Friedel 2005 cited in DEWHA 2008).
- Decreased seed production (Letnic 2004 cited in DEWHA 2008).
- Increased soil erosion (Wasson and Galloway 1986 cited in DEWHA 2008).
- The disruption of microbiotic soil crusts that play an important role in nutrient cycling (Eldridge and Greene 1994 cited in DEWHA 2008).

2.3 Impacts on biodiversity

The presence of unmanaged goats is incompatible with management for conservation of biodiversity and the maintenance of ecosystem functions such as plant growth and reproduction under favourable seasonal and event-based conditions in low rainfall environments. In reserve areas, the desired management outcome is to reduce unmanaged goat numbers to a level at which they have no significant impact on these values (DEWHA 2008).

2.3.1 Threatened Plant Community – Porcupine Grass Sparse Woodland

Porcupine Grass Sparse Woodland was first described in 2008 following baseline surveys for the Silverton Wind Farm Project (NGH 2008a and NGH 2008b). Characterised by an infrequent canopy of Red Mallee *Eucalyptus socialis* and Gum Coolabah *Eucalyptus intertexta* growing with a hummock grass understorey of Porcupine Grass *Triodia scariosa* (OEH 2010), it is a distinctive plant community with a distribution restricted to the Broken Hill Bioregion. OEH (2017) classify the plant community as critically endangered in New South Wales.

<http://www.environment.nsw.gov.au/threatenedspeciesapp/profileData.aspx?id=20152&cmaName=Broken+Hill+Complexify>

In addition to the direct impacts of clearing posed by the Silverton Wind Farm, grazing and browsing by goats is identified as a significant ongoing threat to the community (NSW SC 2010). There is a lack of apparent recruitment within the community, with no evidence of recent regeneration of tree species, which is attributed to browsing pressure by goats (OEH 2010). Further discussion on the impact of goats on PGSW is provided in the Recovery Plan for the community (Biosis 2018b).

2.3.2 Threatened Fauna

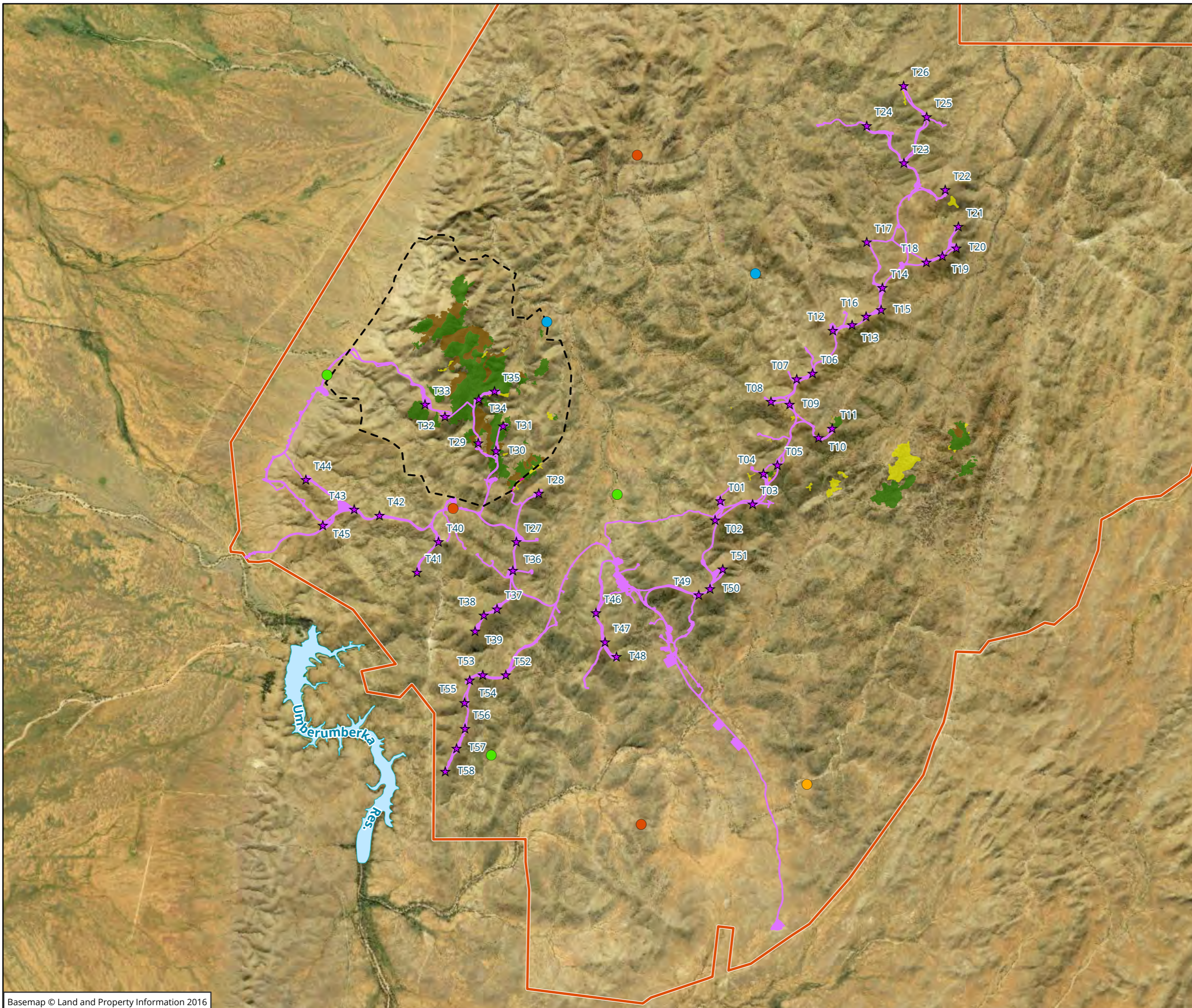
The Barrier Range Dragon *Ctenophorus mirrityana* was recently described as a separate species from the Tawny Rock Dragon *Ctenophorus decresii* (McLean et al 2013), and is currently known from four sites in western New South Wales, including the Silverton Wind Farm (Sass and Swan 2010). The species is associated with rocky habitats such as outcrops, gorges, escarpments, rock spoils and scattered rock aggregates (Sass and Swan 2010; McLean et al. 2013). Grazing pressure and habitat degradation by goats is impacting on habitat for the Barrier Range Dragon at Silverton Wind Farm (NGH Environmental 2008c). Grazing pressure and trampling results in detrimental impacts to vegetation cover and structure, and a resultant reduction in the quality and availability of microhabitat for ground-dwelling fauna, including the Barrier Range Dragon. Goat scats have also been found to fill rock crevices, which is likely to reduce the availability of this key resource for the Barrier Range Dragon (NGH Environmental 2008c). The combined impacts of goat grazing pressure and scats filling rocky crevices is hypothesised as having contributed to a limited and patchy distribution of the Barrier Range Dragon at Silverton Wind Farm (NGH Environmental 2008c). In their listing determination of 'Competition and habitat degradation by Feral Goats' as a Key Threatening Process, the NSW Scientific Committee listed 20 threatened species at risk, including the closely related Tawny Rock Dragon. Two other threatened reptile species known to occur at the Silverton Wind Farm, Mallee Slender Blue-tongue

Lizard *Cyclodomorphus melanops elongatus* and Marble-faced Delma *Delma australis*, are also listed in this determination as being threatened by competition and habitat degradation of Feral Goats.

2.4 Pastoral leases and grazing

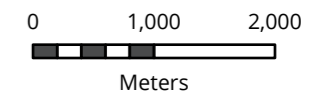
The tenure of the land at the Silverton Wind Farm is Crown Land offered as leasehold under the authority of the *Western Lands Act 1901*. There are four lease holderlease holders associated with the Silverton Wind Farm. The land is currently used for grazing purposes, including Feral Goats. Despite the potential for environmental degradation resulting from Feral Goats, they are considered to be a commercial resource (Parkes et al. 1996; Russell et al. 2011). Pastoralists have identified the value in the sale of Feral Goats as either meat for export or live export (Parkes et al. 1996). Although harvesting Feral Goats by pastoralists has led to a reduction in goat numbers generally, the focus on goat management has now moved to maintaining goats at a level where they remain economically viable. This change in management focus now presents a new set of challenges, as the approach often conflicts with conservation management where eradication or suppression at very low numbers is the goal (Russell et al. 2011). Lease holders at Silverton Wind Farm are currently taking this approach to goat management, where goats have become a commodity and are being managed at levels that may be detrimental to the landscape, particularly to the PGSW Critically Endangered Ecological Community (CEEC) and endangered Barrier Range Dragon located within Area 7 (Figure 2) of the Wind Farm.

A goat fence was erected around the PGSW CEEC by lease holder Blore in May 2014 as part of the Mundi Mundi Conservation Project funded by the Total Grazing Pressure Program, Western Local Land Services (LLS) (Figure 2). The fence was erected to temporarily exclude and manage goats for the purposes of protecting the PGSW CEEC and endangered Barrier Range Dragon. The fence also inhibits goats from seeking refuge in the steep, rocky terrain during mustering events and acts as a wing to guide goats to the 4 kilometre long wing off the Umberumberka Reservoir. Documentation associated with the Mundi Mundi Conservation Project is included in Appendix 1.



- Legend**
- Study area
 - Goat fence
 - Infrastructure
 - Pre-existing road
 - ★ Turbine
- PGSW structural variants**
- Porcupine grass with eucalypts
 - Porcupine grass only
 - Eucalypts only
- Watering point**
- Ground tank
 - Trapped dam
 - Trapped trough
 - Trapping yard

Figure 2 – Infrastructure for goat management



Scale: 1:62,500 @ A3
 Coordinate System: GDA 1994 MGA Zone 54



3 Monitoring and adaptive management

3.1 Grazing pressure

The presence of too many herbivores in any area leads to overgrazing and land degradation. As was mentioned previously, the current impact of goat grazing is not fully understood due to the confounding influence of other herbivores contributing to the total grazing pressure at any site. Moreover, because goats are generalist herbivores their impacts may be greater than other herbivores during periods of drought (DEWHA 2008). The Dry Sheep Equivalent (DSE) for goats ranges from 0.7 DSE for weaners, 0.75 DSE for dry does, 1.2 – 1.9 DSE for pregnant / lactating does, and 2 DSE for bucks. Western LLS rated carrying capacity of the area is approximately 1 DSE per 5 hectares (approximately), which is approximately 0.26 weaner goats per hectare (Silverton Industries 2013, Appendix 1). The total area of the Silverton Wind Farm is approximately 35,000 hectares and the fenced area containing the PGSW is approximately 1,300 hectares. Therefore, the LLS advised carrying capacity of the fenced area that includes the PGSW is approximately 338 weaner goats and the broader Wind Farm site is approximately 9,100 weaner goats.

Numbers of goats and numbers and types of other herbivores (e.g. kangaroos) need to be taken into account, as well as prevailing climatic conditions in determining appropriate stocking rates. It follows that in poor seasons, where palatable species are in short supply, a stocking rate below that considered to be appropriate will be applied and vegetation monitored for evidence of an improvement or deterioration in condition. A major problem exists, however, with monitoring absolute Feral Goat population numbers. The animals are highly mobile but are not dispersed evenly across arid rangelands. Efforts to census Feral Goat populations have to date been impossible to establish (David Morgan *pers comm*). One method of providing relative estimates of Feral Goat populations has been to count scat numbers at designated plot sites. At mine sites west of Pooncarie this has been undertaken routinely in association with mining vegetation rehabilitation and conservation offset monitoring. Reduced scat numbers at designated long-term monitoring sites have been directly correlated with lower numbers of Feral Goats captured during herding and trapping exercises (Sluiter 2015).

In a recent study in the rangelands of north-western NSW, Russell et al. (2011) demonstrated that Feral Goat dispersion and distribution are affected by their proximity to water and goat numbers can be significantly reduced at a local scale by manipulating their access to artificial watering points. In their study, despite no response in living vegetation after a goat exclusion period of 12 months, there was an increase in litter and a decrease in bare ground (Russell et al. 2011). Goats are generalist, browsing herbivores that can feed on low nutrient fibrous vegetation (including litter), allowing them to continue to feed under adverse environmental conditions. Increased litter therefore is the first stage in recovery from goat impacts. Increased litter provides better seed germination conditions than bare ground and improved landscape function (Russell et al. 2011).

3.2 Trapped water points and other water sources

The Silverton Wind Farm area is currently being managed for grazing purposes by four lease holderlease holders. Two lease holderlease holders (including Silverton Industries) have seven trapped watering points within or adjacent to the Wind Farm (Figure 2). The trapped watering points include a permanent spring in a creekline, as well as several troughs and dams. A four kilometre fenced wing off the Umberumberka Reservoir is also used to funnel goats into yards. The trapped watering points are being used to actively manage goat numbers in the area. Currently, when goat numbers are observed to be in excess of 100, they are mustered onto fencing wings using aerial mustering and yarded, or trapped at the watering points.

During cooler months when surface water is available, active mustering is required as trapped water points alone are not sufficient to reduce goat numbers (Silverton Industries 2013, Appendix 1).

3.3 Fencing

When used in strategic locations, fencing can be used to guide / funnel goats during mustering events, exclude goats from watering points, limit / exclude access and contain trapped animals. Goats push through traditional strained wire fencing, which results in an increased effort required for effective containment (Freudenberger and Barber 1999). Goat fences can be expensive to establish and maintain (DEWHA 2008), particularly in the rocky, hilly landscape of the Silverton Wind Farm. Goats tend to test the lower third of the fence, especially the gap between the ground and the bottom wire, so fences need to be constructed to 'goat standards'.

Fences will be constructed using the following materials:

- 8/90/30 Hinged Joint
- steel posts and droppers
- bottom barb wire running with bottom of Hinged Joint 60 millimetres from the ground
- plain wire running with the top of Hinged Joint
- plain wire running 200 millimetres above the top of the Hinged Joint.

Fence strainer stays can provide escape routes, so these will be constructed using round galvanised pipe angle stays, or boxed end assemblies. Floodgates will also be necessary for drainage lines and flood ways. These are to be constructed using 10 millimetre wire rope cable with 1.8 metre chain wire. Lengths of timber are attached vertically to the chainwire, extending from the wire rope to the bottom of the chain wire every 3 metres. A NSW Agriculture fact sheet for goat fencing is included in Appendix 2.

3.4 Management approach

Complete removal of Feral Goats from the broader landscape is well beyond the capacity of techniques and resources currently available (DEWHA 2008). There are a number of management approaches that are currently used for controlling goats. These control methods are discussed briefly below, including their applicability and how they will be implemented at the Silverton Wind Farm site. The primary control methods will be exclusion periods for the PGSW area (utilising the existing goat fence), trapping at existing water points and mustering. Other control methods exist that have not been discussed in detail in this plan (e.g. Judas Goat) as they have not been deemed appropriate at this point, but may need to be included in the revision of the BAMP in three years (Biosis 2018a).

3.4.1 Exclusion periods and trapping

Trapping goats at water points is an effective way to remove goats from the landscape during periods where the availability of alternative water sources is limited. There are currently seven trapped water points within or adjacent to the Silverton Wind Farm (Figure 2). The water points are surrounded by goat proof fencing, incorporating one-way entrances (rocky ramps) that allow access into the water point but prevent the goats from exiting. Goats become accustomed to walking through an open gate adjacent to the watering point to drink and so when the gate is closed, they will readily walk up the rocky ramp and jump into the water point. Animals will be provided with adequate food, water and shelter while in the trap. Trapped wildlife will be released immediately and goats removed to temporary holding paddocks, or to abattoirs for destruction or live sale (DEWHA 2008).

Since the construction of a goat fence around the PGSW CEEC in May 2014 to exclude and manage goats for the purposes of protecting the PGSW CEEC and endangered Barrier Range Dragon, an average of approximately 500 goats have been grazed in the PGSW plot. When goats are grazed in the PGSW, they are harvested approximately every two months. Since 2014, goats have been excluded during the following periods:

- June 2014 to April 2015
- September 2015 to February 2016
- August 2017 to December 2018.

This equates to 33 months out of 55, approximately 60% of the total time since fence construction.

Goats will be excluded from the fenced PGSW area from June to January (inclusive) each year for the next three years, at which time the BAMP will be reviewed to ensure there is a net gain in the conservation value of this community (Biosis 20108a) unless climatic conditions are such that ground cover increases significantly. If there is greater than 40 % ground cover of annual species, the lease holder will allow seed production to occur, and then reserves the right to utilise the vegetation as feed. Goats will be excluded when the cover of these annual species falls to less than 40 %.

If grazing is to be initiated during the exclusion period:

- The lease holder (Silverton Industries) will notify GE operational staff/project ecologist that ground cover is greater than 40 % and seeding of ephemeral species has occurred.
- Photopoint monitoring will be initiated and submitted to the project ecologist on a fortnightly basis to confirm the level of vegetation cover is maintained above 40%.

Further exclusion of goats will be needed if the results of on-going monitoring indicate that the PGSW is not recovering to the desired level, or if the climatic conditions are poor (e.g. low rainfall). On-going mustering will also need to occur in the fenced PGSW area to actively remove any stray goats during the exclusion period.

GE Renewable Energy will monitor the grazing and mustering of goats in PGSW in conjunction with the Lease holder's reporting obligations and as part of the Weekly Monitoring Checklist. GE discussed this issue with the Lease holder and the Lease holder has indicated to GE that he will comply (to the extent possible) with GE requests concerning exclusion periods and mustering. The Lease holder noted during discussions with GE that in accordance with the terms of the Crown Lease, he holds an unequivocal and unrestricted right to graze and muster livestock including goats over the lands.

Should GE determine that the agreed exclusion periods and mustering methods are not being met by the Lease holder or if the review of goat management in 2021 indicates that the reduction of grazing is insufficient to achieve a net gain, GE will request The Crown (DI Lands) and DPE provide clarification whether the Project Approval (08_022 MOD 3) or The Crown lease conditions should take precedence.

3.4.2 Mustering

Mustering of goats at the Silverton Wind Farm site usually involves a combination of aerial and ground mustering. Aerial mustering using helicopters or gyrocopters is required due to the steep, rocky terrain, in combination with motorbikes and dogs. Prior to the construction of the goat exclusion fence, goats would seek refuge in the steep terrain of the PGSW area. Gyrocopters could not safely access the area due to the presence of strong updrafts. Lower goat densities can now be achieved by combining mustering and trapping.

The presence of the goat exclusion fence around the PGSW area means that the area can be closed off and goats cannot seek refuge from the mustering event. During the goat exclusion period, on-going ground

mustering will need to occur in the fenced PGSW area to actively remove any stray goats. At low densities however (less than one goat per square kilometre), it is recognised that mustering alone becomes uneconomical (Henzell 1984 cited in DEWHA 2008).

If the results of on-going monitoring indicate that the PGSW is not recovering to the desired level, and goats are still present inside the exclusion zone, contingency control methods will need to be implemented. This is discussed further in Section 3.4.3 and 3.4.4 (below).

3.4.3 Judas goat

The Judas goat technique involves exploiting the sociability of goats. A radio or global positioning system (GPS) collar is attached to a goat, the goat is released in the expectation that it will join up with other goats and is tracked along with the herd it has joined. Judas goats are generally used where population density is low and herds are small or hard to find, or to locate survivors of other control campaigns (Parkes et al. 1996) and to monitor areas thought to be free of goats (Taylor and Katahira 1988). The Threat Abatement Plan for goats in Tasmania (developed by the Tasmanian Parks and Wildlife Service) advocates this technique, as unmanaged goats in Tasmania occur in small isolated groups in terrain that is difficult to access (Gaffney and Atkinson 1995). However, this technique is expensive because it requires specialised equipment and skilled staff, and is warranted only in areas where goat densities need to be extremely low, or where total eradication of goats is a feasible option. While this approach has not been deemed appropriate at this point, Judas goat will be considered further in the revision of the BAMP through the adaptive management approach.

3.4.4 Financial considerations

The established exclusion fencing allows very cost effective management of goats with the PGSW area. Therefore, even if the market is such that the goats are sold for pet food, there is sufficient financial return to the lease holder to continue removing goats from the area.

However, in the unlikely event that the price for goats drops significantly there may be no incentive for lease holderlease holders across the Silverton Wind Farm site to actively control the Feral Goats. If this occurs, the lease holderlease holder will identify this financial trigger point and notify GE operational staff that trapping and mustering activities will cease and an alternative arrangement will be negotiated with GE. More intensive management will also be considered if goat numbers are too low to undertake active mustering inside the PGSW exclusion period, but monitoring suggests that goats are still active inside the exclusion area.

3.5 Adaptive management

The management of goats across the Silverton Wind Farm will follow an adaptive management approach. This approach will allow for the collection of baseline data, followed by annual monitoring for three years. Management actions will be revised following each annual monitoring period to continually improve on-ground management and ecological outcomes. A detailed review in consultation with OEH after the initial three year period will ensure the management approach is appropriate to achieve a net gain in the conservation value of PGSW. This cycle of 'do, monitor, evaluate and respond' is the foundation of adaptive management and is widely applied to terrestrial and aquatic ecosystem management (Kingsford et al. 2011).

Adaptive management relates to maintenance and improvement of vegetation extent and health to achieve a net gain in condition by the management of grazing pressure from goat populations and impacts on episodic recruitment events and vegetation health. Adaptive management follows a MERI cycle – Monitoring, Evaluation, Reporting, and Improvement. The MERI framework is discussed in the BAMP (Biosis 2018a) and will be further developed with the site manager.

4 Summary of management actions

The primary goat management actions will include exclusion periods for the PGSW area (utilising the existing goat fence), trapping at existing water points (in PGSW and greater Wind Farm area) and mustering. The existing exclusion fencing makes management of goats highly cost effective. In the unlikely event that the primary methods fail or become unviable, the lease holders will notify GE and alternative control options will be negotiated.

Monitoring will begin with baseline data collection (Spring 2018) followed by a program of management actions, on-going annual monitoring and adaptive management responses. Baseline and on-going monitoring data collection will include goat scat counts within the PGSW fenced area and estimates of goat populations from lease holderlease holders within the Silverton Wind Farm site. Confirmation of GPS locations of the goat exclusion fence and all trapped watering points will also be undertaken during the baseline monitoring. Vegetation condition in relation to grazing pressure from goats will also be monitored; details are provided in the BAMP (Biosis 2018a). The following table provides a summary of the proposed goat management actions for the Silverton Wind Farm site including the area containing PGSW, as well as the corresponding monitoring actions and responses to be implemented as a result of the monitoring outcomes.

A summary of performance criteria/tasks, responsibilities and timing are provided in Table 1. Many of these actions are duplicated in the Vegetation Management Plan (Biosis 2018c) and PGSW RP (Biosis 2018b). All performance criteria are compiled in the BAMP (Biosis 2018a).

Table 1 Management actions, monitoring and responses for goat management

Management action	Monitoring	Response	Responsibility
1.2 Mapping of existing goat management infrastructure	Position of existing goat control fencing and associated infrastructure to control access to water and facilitate mustering will be accurately mapped.	Shapefile prepared and submitted to GE and OEH/DPE.	Project Ecologist or GE operational staff.
1.3 Estimate Feral Goat populations	Collection of landholder population estimates	All four landholders contacted to gather baseline information about goat populations and management Records from landowner discussions to be documented.	Project Ecologist or GE operational staff.
1.4 Baseline vegetation monitoring	Establishment of 20 permanent plots to monitor PGSW vegetation condition and grazing pressure.	Vegetation monitoring quadrats established and baseline survey completed in spring 2018 Preparation of annual monitoring report.	GE/ Project Ecologist.
2.21 Monitor fencing and work with General Purpose lease holder to maintain fencing to	Fence lines will be inspected quarterly and documented via inspection checklist.	Inspection checklists submitted. Document completion of fencing.	Fence lines will be inspected quarterly and documented via inspection checklist. Repairs will be made

Management action	Monitoring	Response	Responsibility
exclude Feral Goats	Work with lease holder to ensure fences will be maintained through agreement with the lease holder.		within 2 weeks.
2.2.2 Implement any required additional fencing to exclude Feral Goats	Additional fencing implemented for areas of sensitive vegetation as required where restoration measures implemented under the VMP are impeded.	New fences will be implemented as required. Fence lines will be inspected quarterly and documented via inspection checklist.	GE operational staff / fencing contractor.
2.4 Goats excluded in PGSW area	Surveillance monitoring of enclosure at monthly intervals. Inspection report submitted.	No Feral Goats within the exclusion fencing from June to January unless cover of ephemeral flora species is greater than 40% <ul style="list-style-type: none"> Goat fenced closed All goats removed via trapped watering points Active mustering as required <p>If there is greater than 40 % ground cover of annual species, the lease holder will allow seed production to occur, and then reserves the right to utilise the vegetation as feed. Goats will again be excluded when the cover of these annual species falls to less than 40%.</p> <p>If monitoring shows signs of grazing pressure during exclusion period – initiate active on ground mustering to eliminate goats within PGSW area.</p>	Project Ecologist (monitoring) lease holder Blore (goat exclusion and mustering) GE Operational Staff.
2.5.1 Ensure reduced stocking of Feral Goats	Surveillance monitoring of enclosure at monthly intervals. Inspection report submitted.	Achieved maximum stocking rate of approximately 0.26 weaner goats per hectare (Section 3.1 pg 10) <ul style="list-style-type: none"> Active trapping at trapped watering points Initiate mustering when observed goat numbers exceed 100. 	Lease holder Blore (goat exclusion and mustering) and GE operational staff.
2.5.2 Ensure reduced stocking of Feral Goats	Surveillance monitoring of enclosure at monthly intervals. Inspection report	Feral Goat control managed by GE contract staff if lease holder Blore ceases management.	GE contract staff / GE operational staff.

Management action	Monitoring	Response	Responsibility
	submitted.		
2.5.3 Clarity on lease precedence	Clarification provided by The Crown (DI Lands) and DPE.	If adequate management of Feral Goats cannot be achieved through negotiation, GE will request The Crown (DI Lands) and DPE provide clarification whether the Project Approval (08_022 MOD 3) or The Crown lease conditions should take precedence.	GE.
2.6 Feral Goat population monitoring	Collection of lease holderlease holder population estimates.	All four lease holderlease holders contacted to gather baseline information about goat abundance and harvesting activities. Records from landowner discussions to be submitted to GE and OEH/DPE.	Project Ecologist or GE operational staff.
2.7 Feral Goat population monitoring	Scat counts in subplots during vegetation monitoring program.	Decrease in goat scat abundance Documented in annual vegetation monitoring report submitted to GE and OEH/DPE.	Project Ecologist.
2.26 Review of BAMP	Comprehensive review of BAMP and supporting management plans.	Review all monitoring data and assess the response of biodiversity values to modified site management. Update management recommendations as appropriate in consultation with OEH to ensure there is a net gain in the conservation value of PGSW, Reviewed BAMP and supporting plans submitted to OEH.	GE/ Project Ecologist.

Note: These are a subset of required actions for the operational phase of the wind farm.

All actions are collated in Appendix 3 of the BAMP.

Annual and on-going results of the monitoring, responses and management actions will be included in the reporting framework described in the BAMP (Biosis 2018a). If following the initial three year monitoring period there is no improvement of vegetation extent and health, and a net gain in condition is not achieved by the management of grazing pressure from goat populations, total exclusion of goats from the PGSW will be considered.

5 References

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- NGH Environmental 2008c. *Proposed development of Stage 1b & 1c, Silverton Wind Farm, western NSW Status and distribution of the Tawny Rock Dragon and their habitat*. Report to Silverton Wind Farm Pty. Ltd. Author Sass S. NGH Environmental, Bega, NSW.
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6 Appendices

396/07

Department of Land & Water Conservation
RECEIVED
30 MAR 2007

Groundcover Program Application – Due 30th March 2007

Make sure you have read and understood the guidelines before starting this application.

Q1 Contact / Business Details

__/1

Name	John Richard Blore
Property Name	Belmont Station
Mailing Address	Belmont Station Via Broken Hill, NSW, 2880
Telephone	(08) 80885310
Fax	As Above
Mobile	0428885310
Email	jablore@hande.net .au
ABN	48 412 421 066 17 495 619 726
Trading Name	The Trustee for J & A Blore Trust BLORE PASTORAL CO.
GST Registered	Yes

Q2 Project Title. (less than ten words)

__/1

Mundi Mundi Range Goat Management Program

Q3 Western CMA office that assisted you with the application

WCMA Office	BROKEN HILL
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Q4 For projects involving boundary fences please state the neighbours letters that are attached. (see page 8 of the guidelines)

__/1

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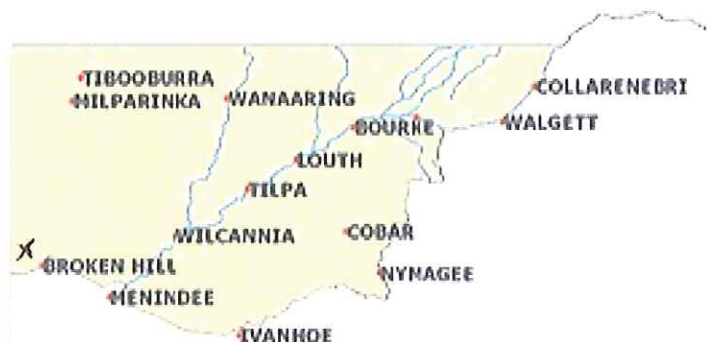
Q5 If the project falls within the NAP region identified in the guidelines, pages 2 & 3, indicate which area.

__/1

- Condamine – Balonne - Maranoa
- Macquarie – Castlereagh
- Darling Riverine Plain (NAP extension area)

Q6 Property Location: Mark the location of the property which the project will occur on with an X.

__/1



Q7 Background: For what other Western CMA projects have you received funding?

Mesquite spraying and removing (WCMA / Defeating the weeds menace)

Contour furrowing and ponding – through Soil Conservation

Q8 Strategy / Priority: How does this project relate to your property's past, present and future management and why is this project a priority? _____/10

In the early, and mid 1900's the area around Brinkworth Well (which concerns West Brinkworth, East Brinkworth and Bore paddocks) was the only permanent watering point in dry times for many tens of thousands of acres of grazing country on the old Mundi Mundi lease. During these dry times the perennial salt bush and blue bush, as well as native grasses and mulga suffered severe damage from over-grazing. Being only a short distance from the Mundi Mundi homestead much of the mulga was harvested for building and fencing. To such an extent that on some old maps the area is deemed to be a mulga protection zone. (An early conservation attempt.)

In more recent years the area has been over-grazed by large mobs of feral goats which strip all pasture as well as young mulga. Since coming to Belmont in 1981 my father has, (despite replacing 80% of internal fences and improving water supplies) only ran sheep in these hills for about 5 of those years. This is because large mobs of migrating goats made managing the available pasture too difficult. For example; if ewes started to lamb with about 6 months feed supply ahead of them, goats moving in could reduce this pasture to 2 months feed in a short time. In the 80's and 90's when goat prices were low it was not unusual to see mobs of up to 1000 goats, and sometimes culling was used as a method of control.

The area around Umberumberka Reservoir (concerning West Brinkworth, South Wilangee Road, T-Junction, Blue Anchor and Four Mile paddocks) attracts large numbers of feral goats which water on the sometimes four kilometre long reservoir. Our boundary with the Reservoir Reserve is almost impossible to make and maintain goat proof due to the rough terrain it follows.

Over the last 15 years an average of about 1500 goats a year have been removed from the property by independent goat hunters. This has not affected the average population as the methods focus on taking the large mobs, preferably billies, and the infrastructure used is minimal and temporary.

In the last five years a large percentage of mulga and perennial bush has died due to moisture stress from the drought. Drought avoiding shrubs and grasses (annuals) have not been able to mature to seed because of excessive goat numbers which cannot be de-stocked like domestic stock. I have noticed a clear weakening in soil structure over this time, due to a prolonged shortage of groundcover.

The Western Lands rated carrying capacity of the project area is approximately 1500 DSE, I estimate that at present the goat population would be approximately 2000 adults excluding kids.

At present, even without grazing by domestic stock, goat populations coupled with dry seasonal conditions are damaging native shrubs, grasses and young trees. In order to avoid irreparable damage I believe that it is a priority to reduce goat populations through the implementation of traps on all watering points. The four traps I propose to construct cover all available watering points in the project area. Their design and method of use is based upon

my observations of the natural movement of goats from their preferred feeding and breeding grounds into and out of watering points. The use of long wings allows the trapping of watering points that cover a large area (such as Umberumberka Reservoir and Dense Camp Creek) and also allow for herding and yarding of goats at times when they are not watering, such as after rain or during winter months.

By greatly reducing goat numbers over an ongoing period and de-stocking the area of domestic stock, groundcover and young trees (mulga and bullock bush) will have a chance to regenerate.

Once low goat numbers can be maintained and ground cover has begun to regenerate, domestic stock maybe introduced back into the area in a rotational management system depending on seasonal conditions. The hills paddocks can be used to spell the plains paddocks in a self- sufficient property management strategy rather than resorting to going on agistment, or selling core breeding stock to maintain sufficient groundcover.

Q9 Infrastructure: In point form please detail the works that will be carried out as a result of this project. Trap yard and fence designs must be drawn. ___/10

- Fence section 1 = 16km of internal existing fencing along the western and southern sides of Happy Valley paddock (see map) will require dismantling **OR**
- 4.4km x 2" poly pipe with cement trough and 5000g tank

Blue Anchor Trough Trap

Trap around existing trough.

- 12m x 18m x 9m x 18m reinforcing mesh enclosure 1.2m high with Top and belly rail of 25mm pipe (3.2mm wall), plus 7m long forcing yards of same materials joining onto a loading ramp. Trap enclosure narrows at force yard end. (66.6m of mesh total, 133m of 25mm pipe).
- 2 x goats trap ramps 2m x 1m x 2m entrance V; mesh, top rail and belly railed, lined with 0.47mm corrugated iron and built up into a ramp with surrounding large rocks and stone. Please refer to diagram.
- 1 x 2.4m long loading ramp with 1.2m high sides (home made), checker plate floor with 7 x 25mm pipe side rails. Please refer to diagram.
- 6mm wall posts approx every 2.3m – 40 posts total @ 2m long, 800mm in ground.
- 2 x 3.6m gates, 1 next to each trap ramp.
- 1 x 3m gate trap yard → 1st force yard.
- 1 x 1.8m gate 1st force → 2nd force yard.
- 1 x 1m gate 2nd force → loading ramp.

Ineligible Works

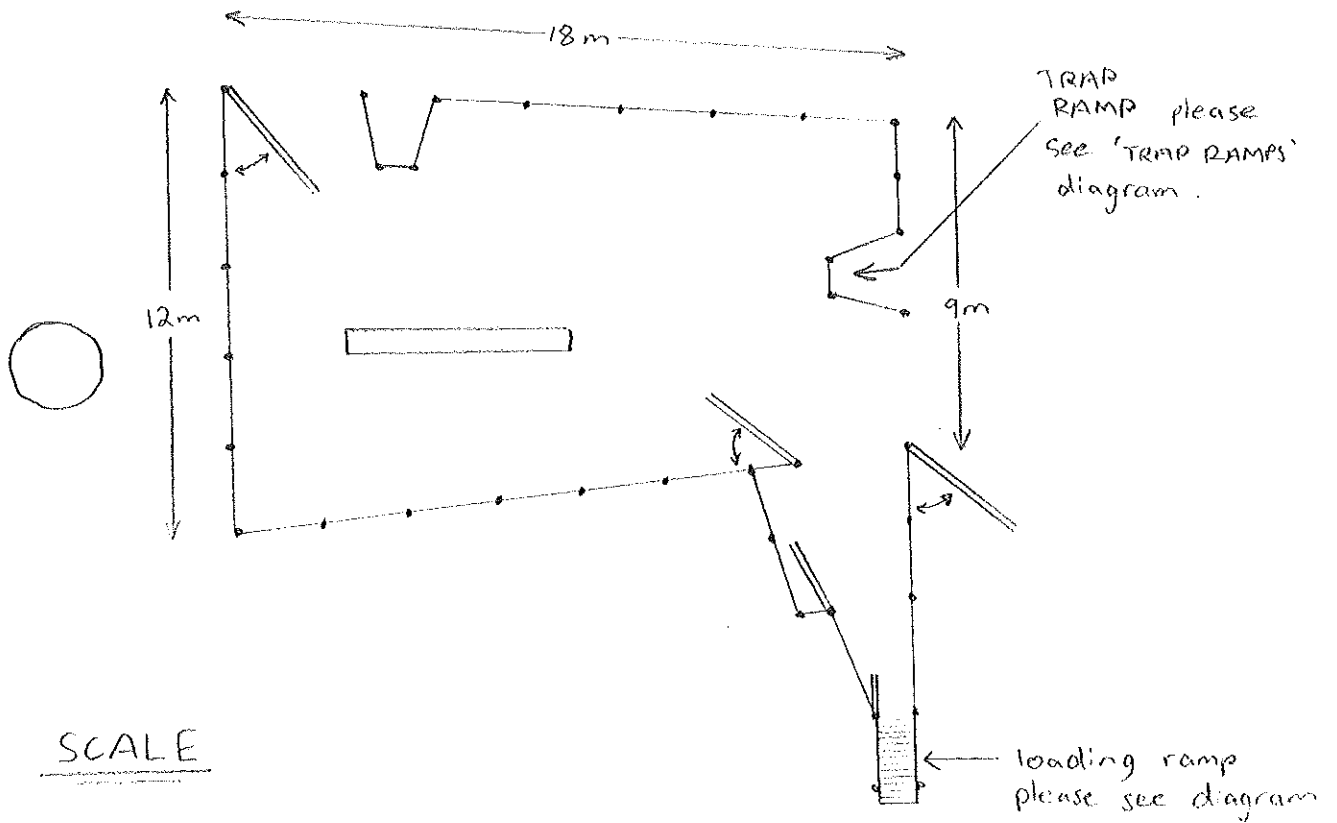
- 6m x 2m cement apron around trough.
- Protective rail and posts along trough.

Wilangee Road Trough Trap

Same as above (Blue Anchor Trap).

- Installation of new 2000 gallon poly tank.
- Trough with 6m x 2m cement apron.
- 1.2km of 1.5inch poly pipe.

BLUE ANCHOR TROUGH TRAP



SCALE

1cm = 2m

KEY

- 1.2m high weldmesh fence with top rail and belly rail
- ==== gate
- ▭ trough
- ply tank
- steel post (6mm wall)
cemented in ground 800mm

Dense Camp Creek Trap

This trap is not a fully enclosed watering point trap as it covers a distance approximately 1.2km long and involves having flood gates across the creeks. If it was fully enclosed there would be too many points of failure to maintain. However as a partially enclosed trap less pressure will be applied on the infrastructure making it easier to maintain and more cost efficient whilst still being an effective trap.

New yard to be built at 'Redbanks' soak. Please refer to map a1

- 3 force yards at the end of the soak to a loading ramp.
- 36m of F718 reinforcing mesh 1.2m high.
- 70m of 25mm pipe for top railing and belly rail.
- 22 x 2m posts (6mm wall).
- 4 x gates 1m, 1.8m 2.4m and 3.6m.

A 300m wing of 7/90/30 stocktite hinge joint extends south from the entrance of the yard to join up with shear cliffs on a bend in the creek. These cliffs will act as an extension of the wing.

- 5 end assemblies (10 posts, 10m pipe) and a 3.6m gate are needed in the wing. Please refer to map b (Red banks), 75 x 165cm star post required 1 every 4 m, 900m plain wire, 60m tie wire.

A flood gate extends north across the creek from the yard entrance to join up with a trap ramp on the northern side of the creek.

- Flood gate made from 20m of 1200mm high chicken wire netting suspended from 8mm wire rope attached to 2 independent strainer posts (6mm wall pipe, 100mm diameter)
- Trap ramp abuts shear cliffs on northern side of creek, and is constructed with 4 x 100mm steel posts, 3m mesh and 3m of 0.47mm corrugated iron. Large rocks and smaller stone are stacked against the iron to make a natural looking ramp.
- Six sheep panels already on site are used to make the cliffs completely goat proof.

Goats must walk over a trap ramp or around and into a large wing to enter the creek and drink on the soak. Once the goats are down drinking on the soak I enter the creek behind the goats and run them along the cliffs and up into the Redbanks yard.

From Redbanks yard a 1360m 7/90/30 stocktite fence follows northern edge of creek to the new yard at Brinkworth. Please refer to map a.

- 200 star droppers → 8m apart and 4m apart in high pressure areas
- 14 end assemblies (28 posts, 28m pipe)
- 4080m plain wire
- 160m tie wire
- 90m netting for flood gates(in-kind cost, material already owned)
- 90m x 8mm wire rope (material already owned)

This fence includes 2 trap ramps which act also as end assemblies on deviations in the fence

- 10m mesh
- 10m of 25mm pipe
- 10m corrugated iron

New yard at Brinkworth Soak

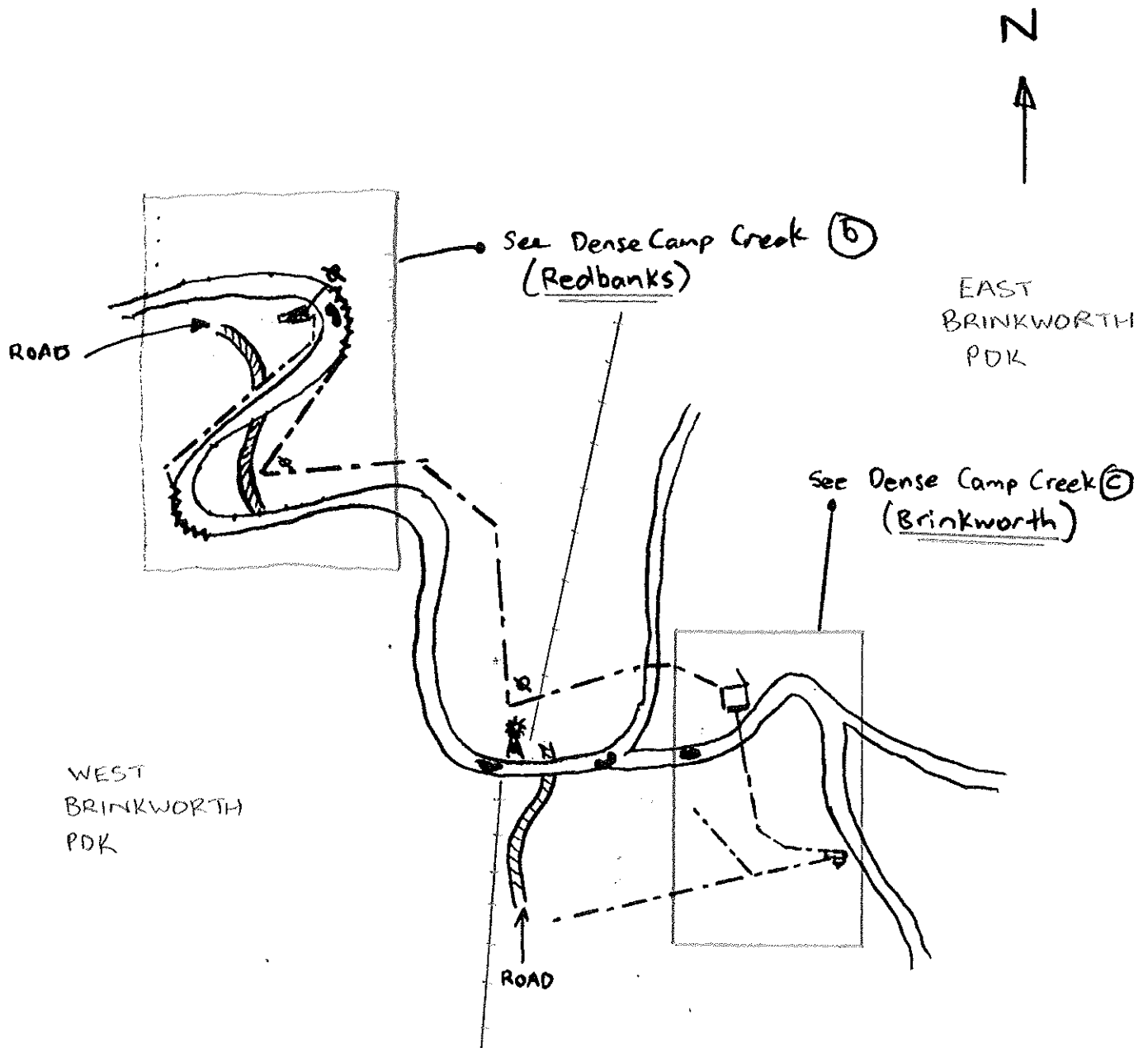
3 Force yards leading to a loading ramp.

- 30m of F718 mesh 1.2m high
- 60m of 3.2mm wall pipe with 25mm NB
- 17 x 2m long posts (6mm wall)
- 1 x 3.6m gate
- 1 x 2.4m gate
- 2 x 1m gates
- 400m 7/90/30 stocktite wings onto Brinkworth yard
- 100 x 165cm galstar posts (4m apart for high pressure)
- 40 x 180cm galstar posts
- 1200m plain wire
- 4 end assemblies (8 x posts and 8m pipe)
- 80m tie wire

This trap works the same way as Redbanks. I come in behind mobs of watering goats and run them along the wings into the trap yard.

'DENSE CAMP' CREEK TRAP

map a




WEST
BRINKWORTH
PDK


EAST
BRINKWORTH
PDK

240 m


Scale

KEY:

 - windmill


 - permanent or semi-permanent water in creek.

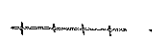
 - hingejoint fence.

 - shear cliffs




 - Road

 - Dense Camp Creek

 - trap ramp.

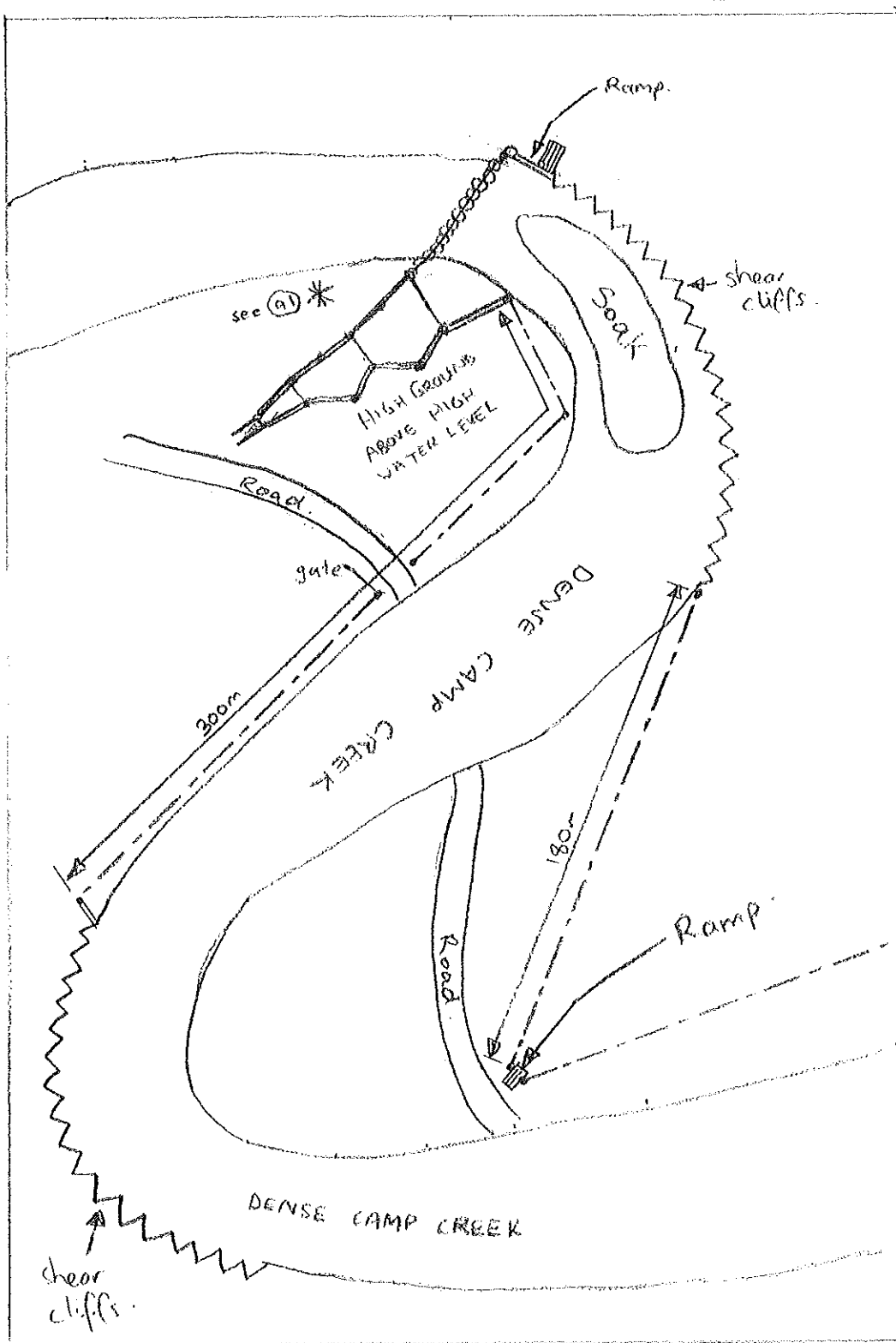
 - existing plain wire fence

KEY

-  Flood Gate
-  hingejoint fence
-  weldmesh fence

* Detail see page (a) 1

DENSE CAMP CREEK TRAP (b) (Redbanks)

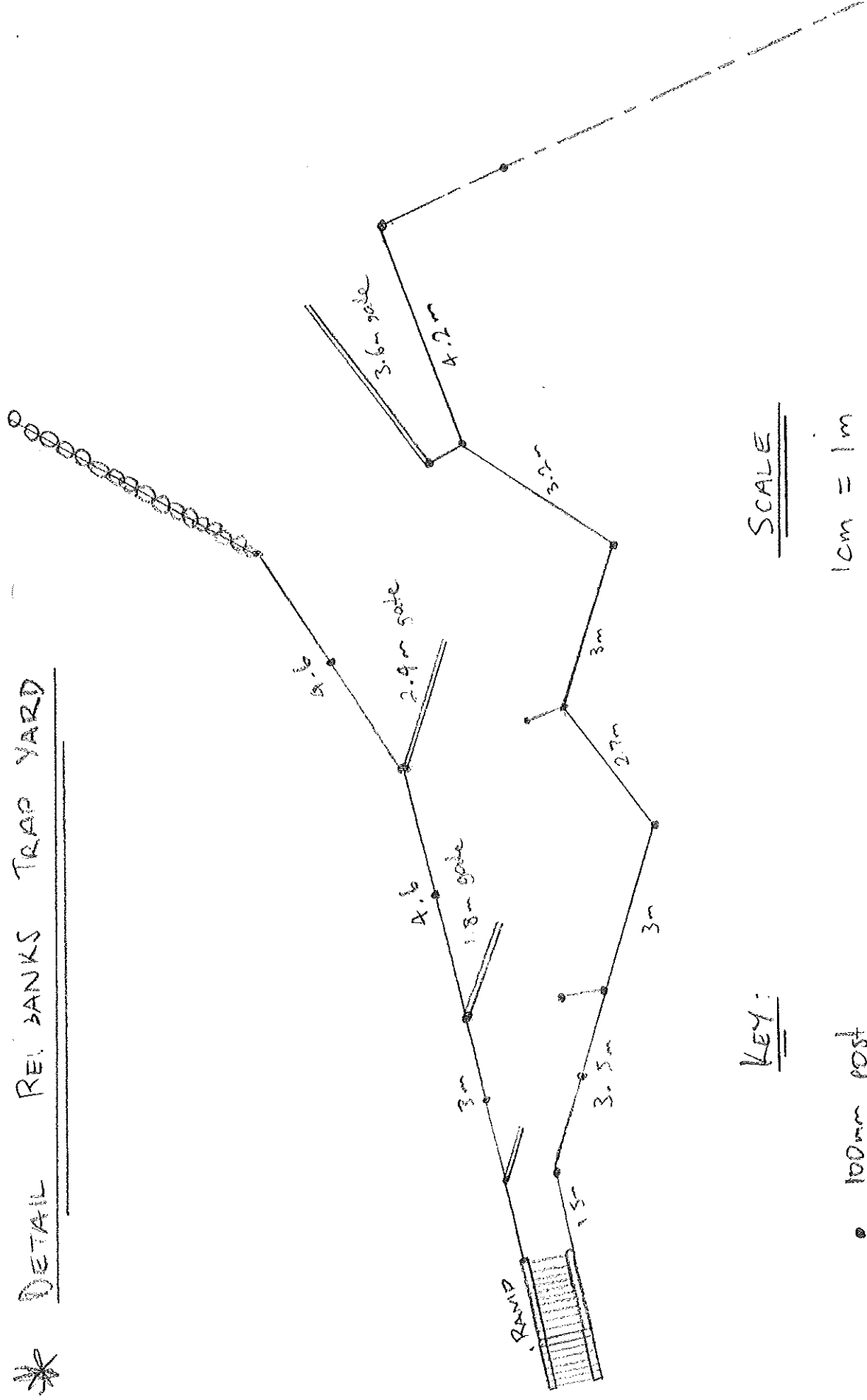


100m

North

91

DETAIL REI BANKS TRAP YARD



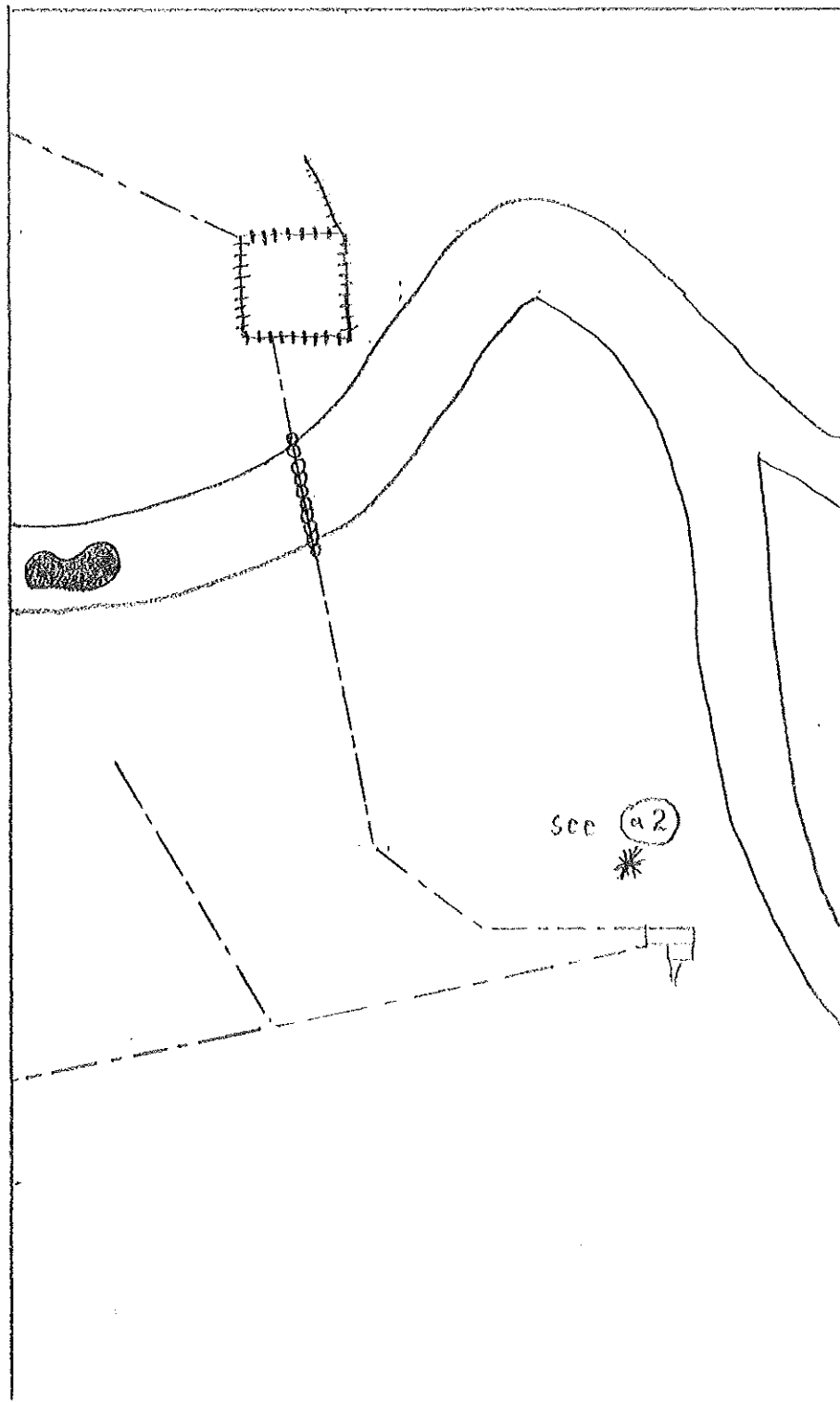
KEY:

- 100mm post
- weldmesh fence
- == gate
- ooooo flood gate
- hinge joint fence

SCALE

1cm = 1m

DENSE CAMP CREEK (C) (Brinkworth)



60m
scale

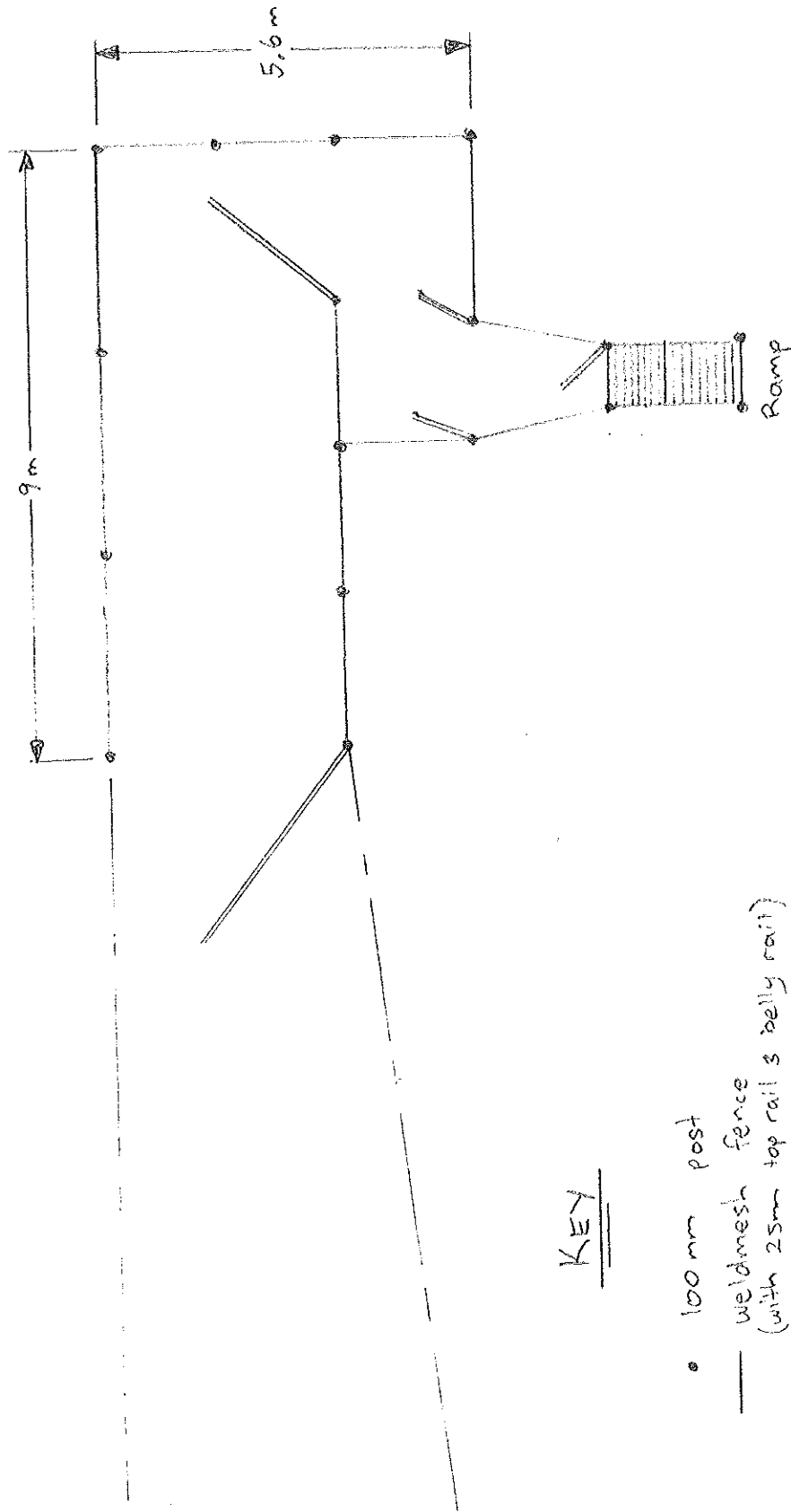
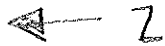
* Detail see
map (a2)

KEY:

- +++++ Existing Yard.
- - - - New CMA stockpile fence
- oooooo Floodgate (CMA)
- Water in Creek.

(a2)

* DETAIL BRINKWORTH TRAP YARD



KEY

- 100 mm post
- weldmesh fence (with 25mm top rail & belly rail)
- == Gate
- hingejoint fence

SCALE

1cm = 1m

T-Junction Yard

Consists of 4 force yards leading to a loading ramp.

- 40m of F718 mesh, 1200mm high
- 80m of 25mm NB pipe (3.2mm wall)
- 22 x posts 2m long 100mm diameter, 6mm wall
- 3 x 3m gates
- 1 x 3.6m gate
- 2 x 1.2m gates
- 1 x 1m gate

A 4km hinge joint wing extends south from the yard across the main passageway for goats exiting Umberumberka Reservoir after watering. When disturbed the goats prefer to run NE toward the largest, roughest hills including Mt. Umberumberka. This wing utilises the natural tendencies of the goats, such as running up and along large ridges.

- 1.8km of 7/90/30 stocktite attached to existing plain wire fence
- 120 galvstar posts, (165cm), required (1 every 15m) to be under minimum CMA requirement at 1 post every 7.5m
- 100m tie wire
- 2.2km 7/90/30 stocktite fence
- 275 galvstar posts, 165cm, 1 every 8m
- 6.6km tyeasy plain wire
- 220m tie wire
- 8 end assemblies (16 posts, 16m pipe)
- 5 strainer posts

A 1.2km wing extends west from the yard.

- 1.2km 7/90/30 stocktite
- 150 galvstar posts 165cm and 60 galvstar post 180cm. (1 every 8m and 1 every 4m in high pressure area)
- 160m tie wire
- 3.6km tyeasy plain wire
- 7 end assemblies (14 posts, 14m pipe)

The last 500m of wings leading to the yard is a bugle shape, this follows a rocky ridge which will partially conaseal the western wing from the goats view until they reach the narrow part of the bugle where they can easily be blocked and yarded.

There are 5 loading ramps in total over the whole project requiring 225m of pipe and 5 sheets of 2.4m x 1.2m checker plate.

30 galstar posts are allocated for pegging down through gullies, and for small flood gates.

(for closer view see 'T-Junction' rd map)

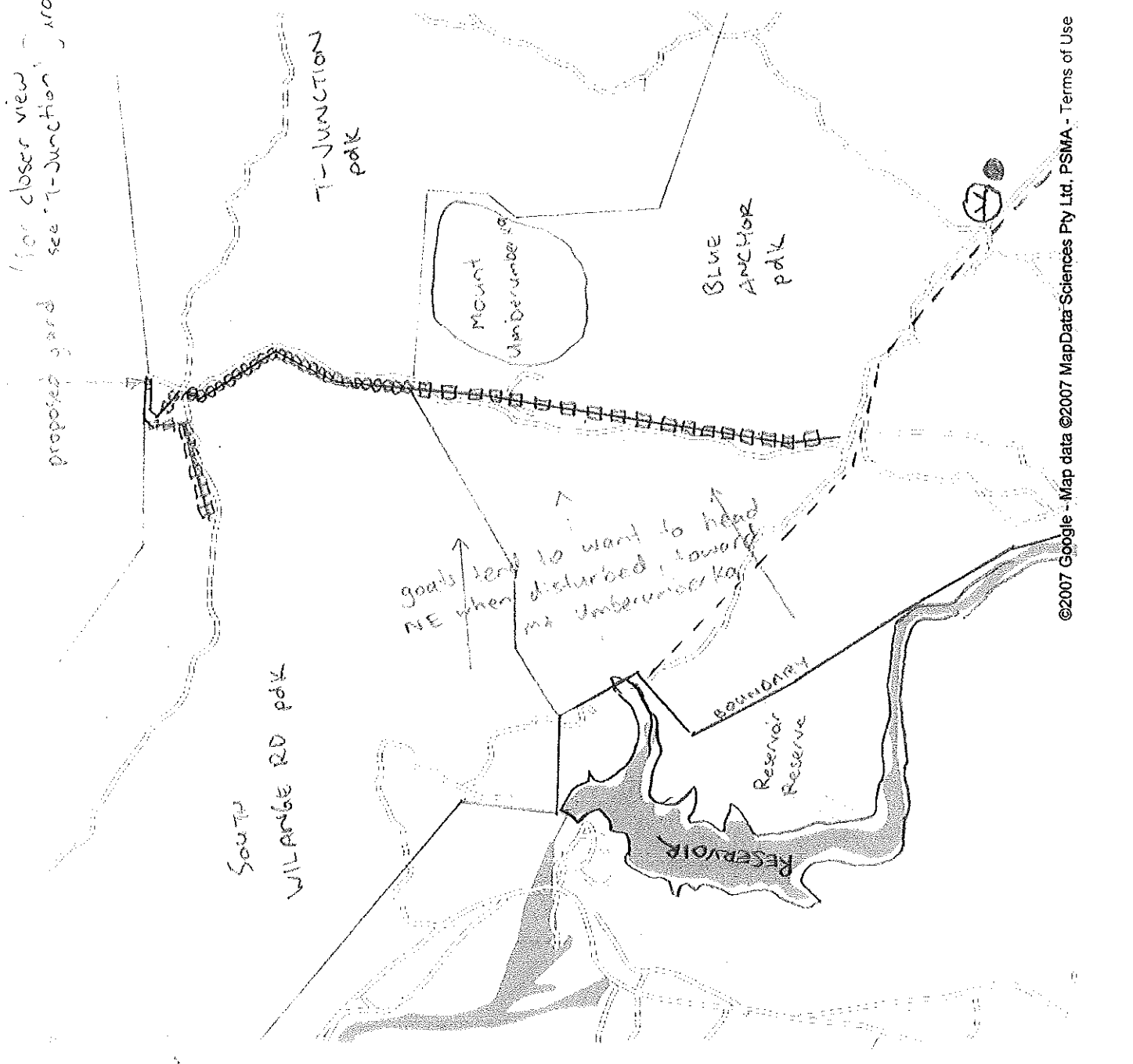


SCALE



KEY

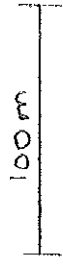
- proposed TGP hingejoint fence
- proposed hingejoint attached to existing S wire fence
- existing pin wire fence plus top barbs
- 18 inch pipeline from Umberumberka to Broken Hill
- proposed trap around existing trough
- poly tank (existing)
- Road







T-JUNCTION TRAP



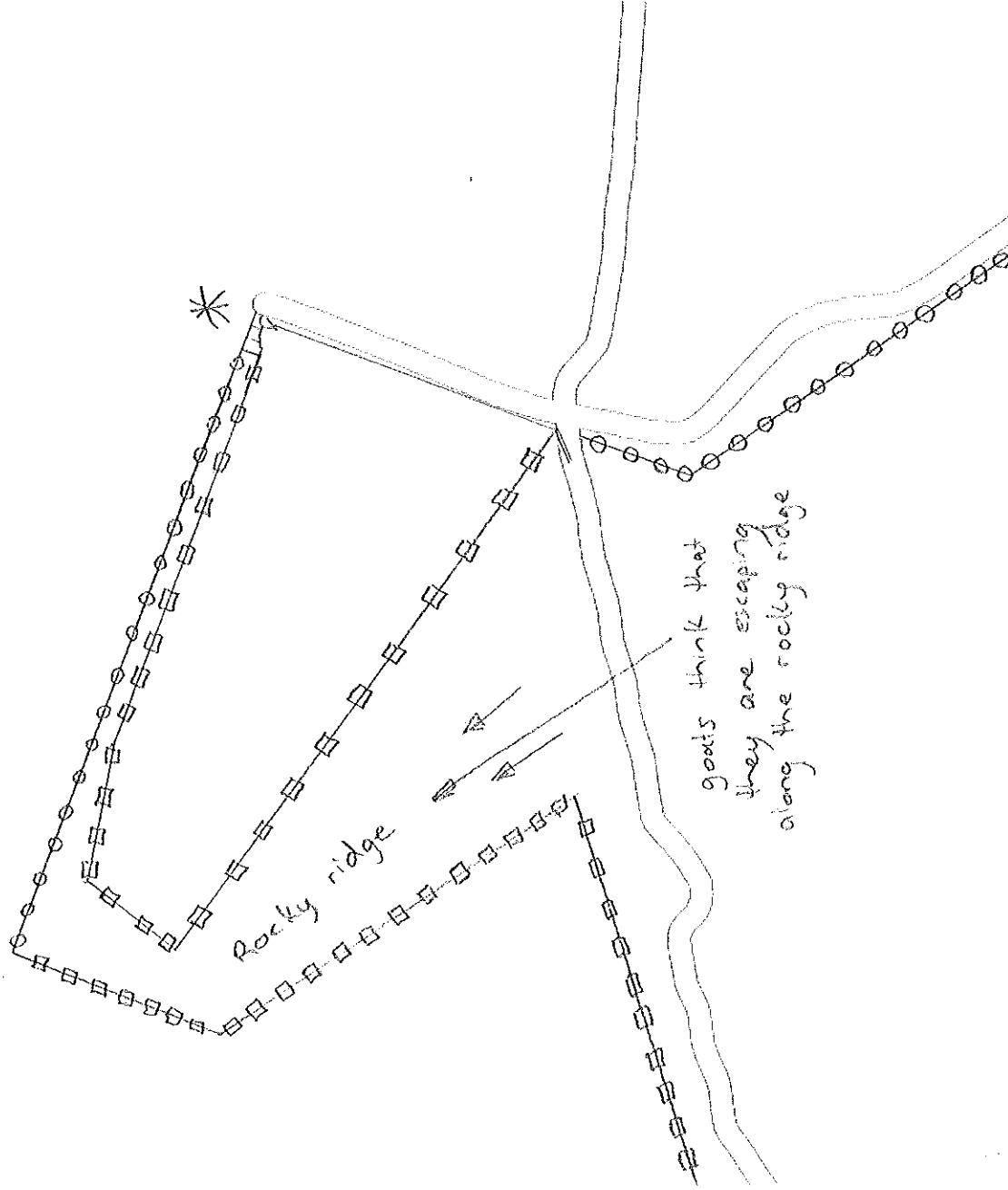
SCALE



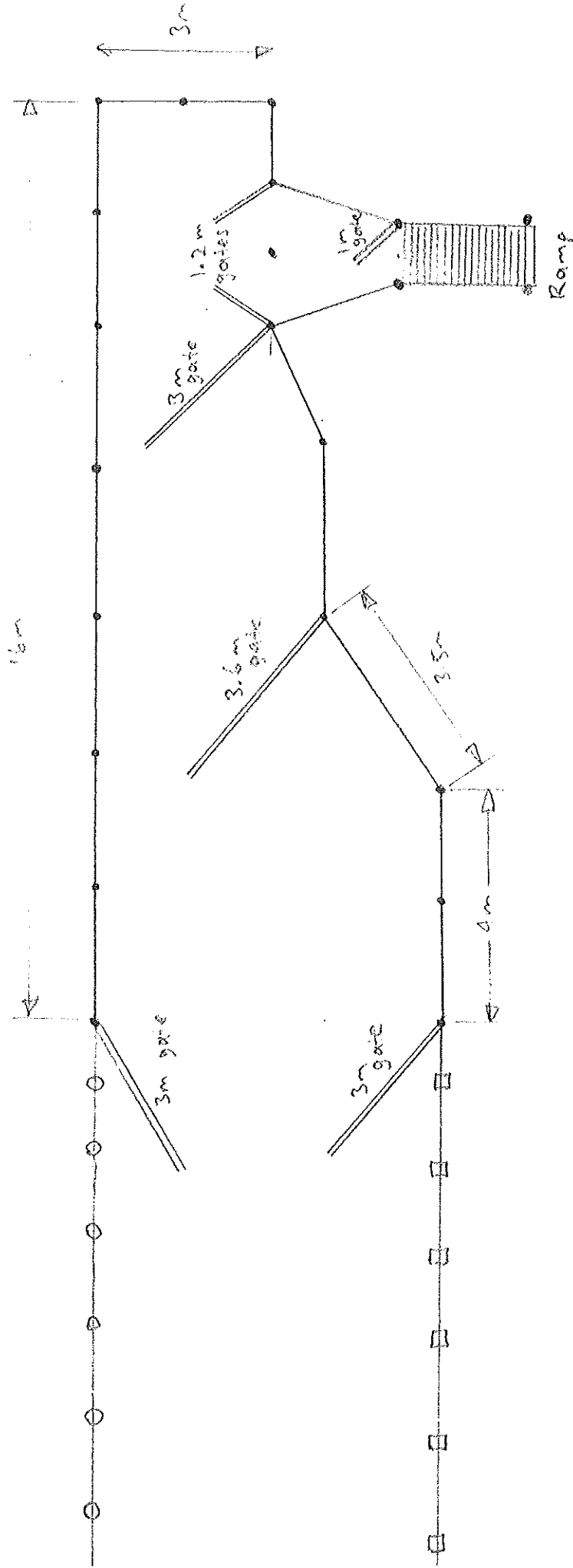
KEY

-  proposed TAP hingejoint fence
-  proposed hingejoint attached to existing plain wire fence
-  existing plain wire fence with top bars.
-  Road

* Detail - see for zoomed in view of yard



T-JUNCTION YARD DETAIL



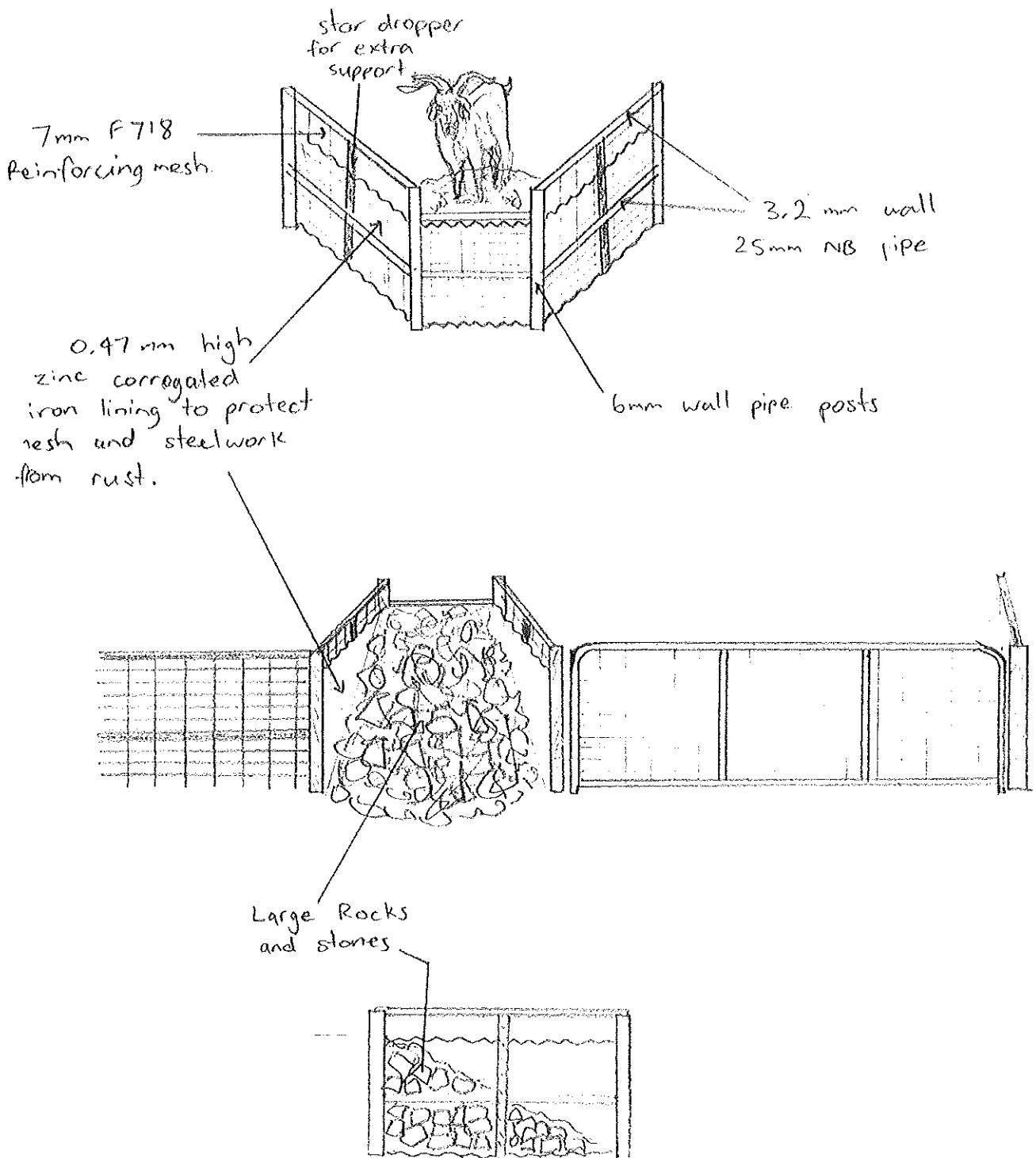
KEY

- 100mm post
- weldmesh fence
- ≡≡≡ gate
- hingejoint attached to existing plain wire fence.
- new hingejoint fence

SCALE

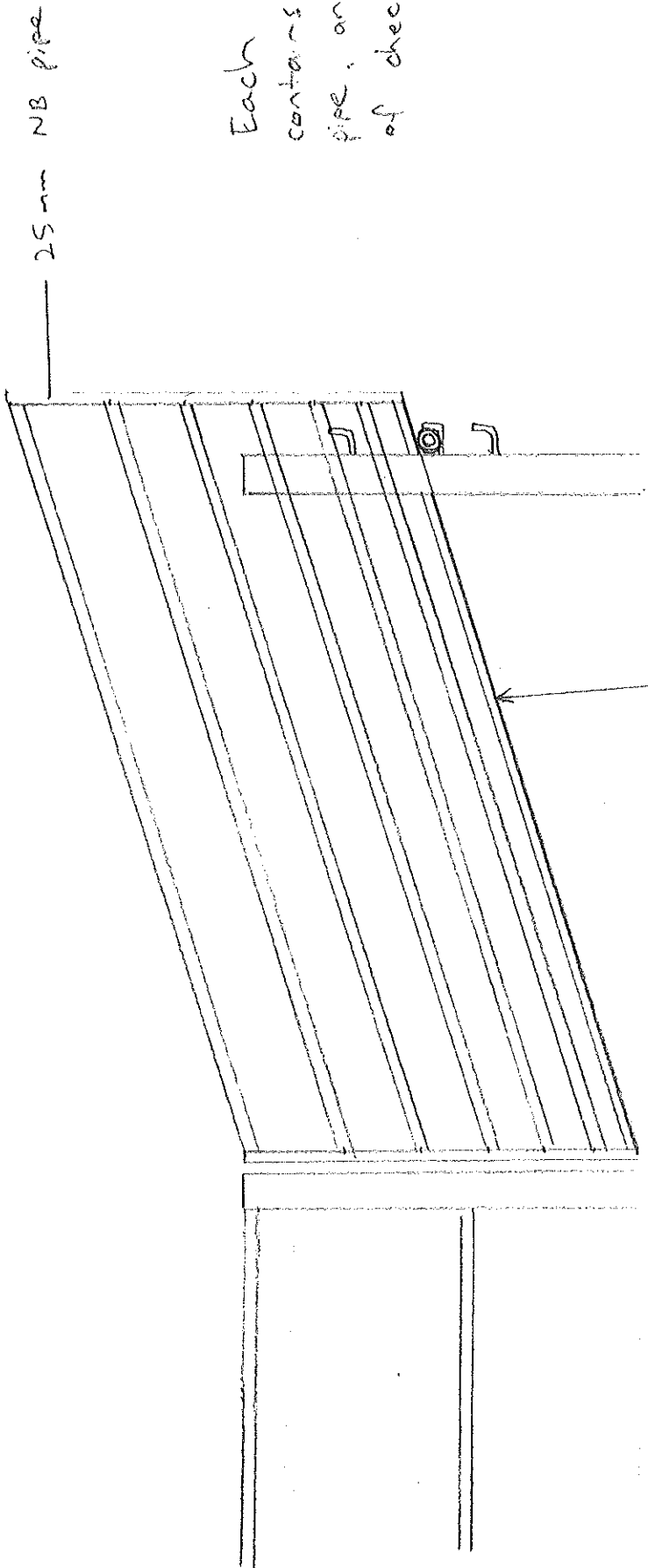
1cm = 1m

TRAP RAMPS



The ramps are designed to allow goats to easily find the trap entrance and also to prevent the goats from barking or being spooked. They are very familiar with walking up stone rises, rather than a steel or wooden ramp.

LOADING RAMP



Each Ramp contains 45 m of pipe, and 2.4 x 1m of checker plate

SCALE

1 cm = 20 cm

Q10a Property Plan/Map – see page 13 for details.










_ / 15

Name of property: BELMONT

Area of property: 48489 Ha

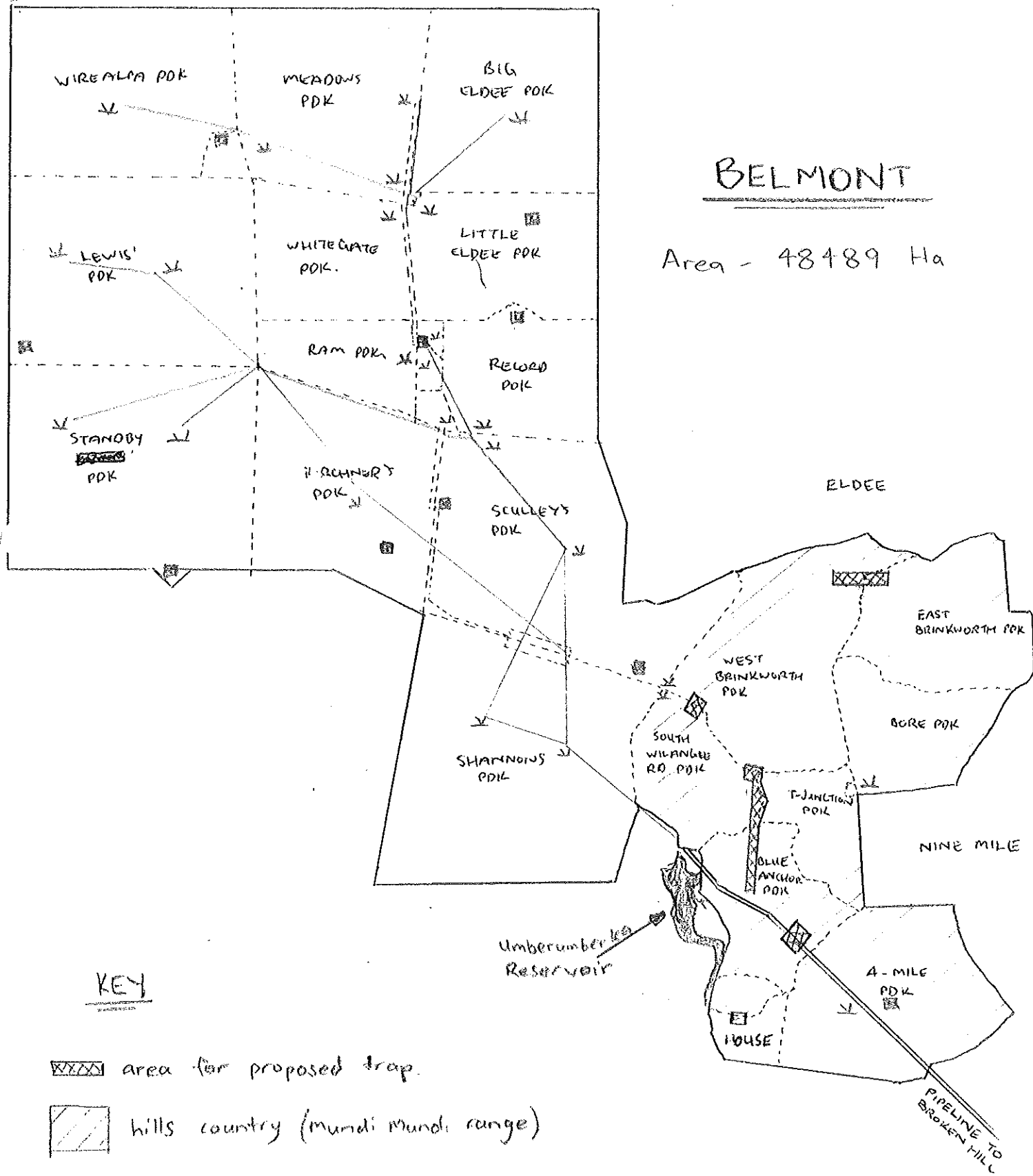
Please see attached diagram

Existing Infrastructure

-  plain wire fence
-  hingejoint fence
-  electric fence
-  ground tank
-  trapped ground tank
-  trough
-  poly tank
-  polypipe line
-  pump/bore
- other

Proposed TGP Infrastructure


-  plain wire fence
-  hingejoint fence
-  electric fence
-  ground tank
-  trapped ground tank
-  trough
-  poly tank
-  polypipe line
-  pump/bore
- other





BELMONT


Area - 48489 Ha


KEY


 area for proposed trap.


 hills country (mundi mundi range)

 plain wire fence

 plains country

 poly pipe existing

 dam

 existing trough

Q10b Project/Site Map










 / 15

Name of property: BELMONT HILLS

Area of property: 11,118 Ha

Please see Attached map.

Existing Infrastructure

-  plain wire fence
-  hingejoint fence
-  electric fence
-  ground tank
-  trapped ground tank
-  trough
-  poly tank
-  polypipe line
-  pump/bore
- other

Proposed TGP Infrastructure

-  plain wire fence
-  hingejoint fence
-  electric fence
-  ground tank
-  trapped ground tank
-  trough
-  poly tank
-  polypipe line
-  pump/bore
- other

BELMONT HILLS
COUNTRY.

Area - 11,118 Ha

KEY

▨ - proposed CMA traps

⊙ - proposed trap or trough

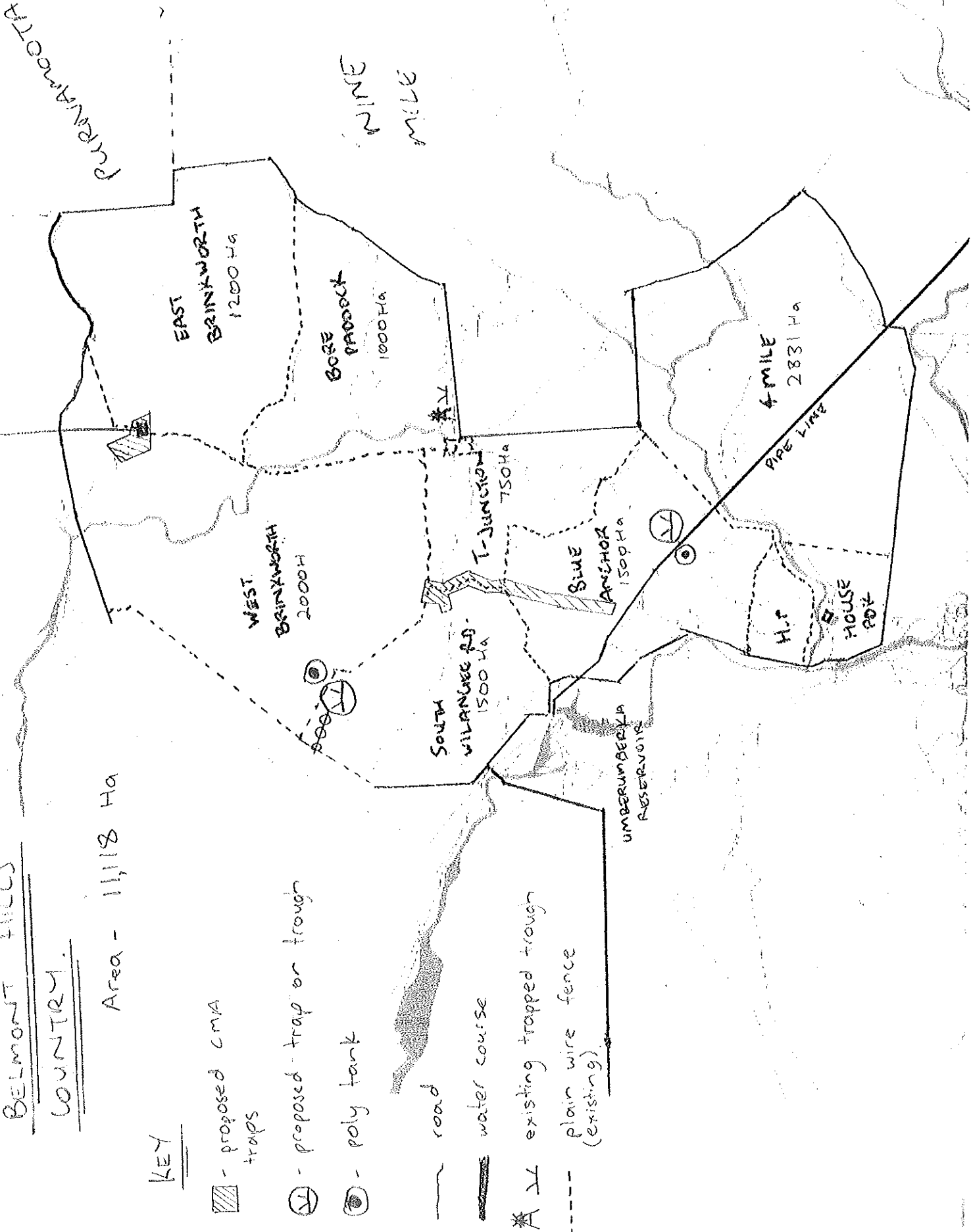
⊙ - poly tank

— road

▬ water course

* ∨ existing trapped trough

--- plain wire fence (existing)



Total cost divided by 3 (1:2 cost sharing)
 Is applicant contribution greater (Yes/No)
(If no, cost sharing is too low)

Q12 Management: In your own words, please provide specific details on what grazing management practices will be used in conjunction with the infrastructure and what on-ground improvements can be expected (in particular groundcover). ___/20

Following is an example answer from previous rounds that was not adequate: "The trap yard will reduce Total Grazing Pressure, to avoid erosion and improve native grasses hence improving biodiversity and achieving sustainability".

Grazing Management Practices

IMMEDIATE TO SHORT TERM MANAGEMENT:

Involves

- 1) An extreme reduction in the total number of goats grazing and watering by trapping them and removing them from property.
- 2) Keeping the management area de-stocked of domestic stock by maintaining the existing plain wire fences.
- 3) Controlling kangaroo numbers by culling in accordance with the Department of Environment and Conservation.
- 4) Maintaining and monitoring CMA funded infrastructure.

MEDIUM TERM MANAGEMENT:

- 1) Assess the effectiveness of infrastructure strategy on maintaining low goat population and the effect this has had on groundcover, strategy may need to be adjusted, for example; increase number of watering points and traps to combat goats grazing on Belmont and watering on neighbouring properties, or work with neighbours to tackle evasive mobs.
- 2) Adjust strategy where necessary to achieve an increased ground cover outcome. i.e. A trap may need to be used to completely close down a watering point for a period of time.
- 3) Maintain infrastructure.

LONG TERM MANAGEMENT:

- 1) Once pasture and young tree populations have reached an adequate level to sustain grazing as well as soil composition and seed base, domestic stock may be introduced into the area.

- 2) Use a rotational system of grazing while still controlling migrating feral goats as well as rabbits through ripping and kangaroos through professional harvesting.
- 3) Hills paddocks can be used to spell plains paddocks and therefore help regenerate areas outside the specific project area.
- 4) Maintain, monitor and report on infrastructure.

EXPECTED ON GROUND IMPROVEMENTS

- 1) Regeneration of young mulga and bullock bush populations.
 - Mulga holds the soil together on the steep hills, as well as catching top soil floating in the air. It also breaks the wind and steadies the speed of hard rain on the area it shelters. The best and thickest feed grows under the protection of a mulga tree.
 - Bullock bush helps hold creek banks and the softer, flatter country together as well as sheltering other ground covers.

- 2)
 - When in a de-stocked phase, using a rotational grazing system is expected to give annual plants a better chance at running through a full life cycle and then producing seed as well as developing a hardier root structure to combat erosion. It also will give perennial seedlings a chance to become established and mature.
 - When in a stocked phase the RGS will help spread seed of palatable feed and manure will return nutrients to the soil.

- 3)
 - Increase in groundcover will improve the state of erosion along water courses by holding the ground together. It will also act as a filter for water runoff, therefore will improve water quality.

SUMMARY

Increase in:

- seed base
- top soil accumulation and retention
- mulga colony climate systems (areas of less sunlight, lower temperature, higher moisture, higher top soil accumulation and higher nutrients)
- saltbush and bluebush germination and maturity
- copperburr coverage
- water quality

Q13 Public Benefit: What public benefit will be achieved through undertaking this project?
 (Please refer to page 8 of the guidelines) _____/9

PUBLIC BENEFIT

Protection of mulga:

In the last five years of drought large areas of mulga trees have died due to moisture stress. Apart from consuming large amounts of carbon dioxide, the native trees provide an environment for other plant life, bird life and insects to survive in. The regeneration of native shrubs, grasses and trees is essential to maintaining the general health of the environment and all forms of life that depend on that environment including people.

It is in everyone's interest that farming and grazing practices do not infringe on the long term sustainability of environmental health. It is a priority that the existing degradation of groundcover and subsequent soil erosion be addressed now. As lease holders and care takers of this land it is our responsibility to try and prevent any change to the natural state of the land. Furthermore it is our goal, through the implementation and management of this infrastructure, to improve the land from its current state for further generations to come. Alleviation of heavy grazing pressure in conjunction with de-stocking of domestic stock, or rotational grazing, is in the public's best interest.

WATER QUALITY

South Wilangee Road, T-Junction, Blue Anchor and the Four Mile paddocks are in the catchment of Umberumberka Reservoir which supplies household water for Broken Hill. Ground cover acts to hold soil structures together but also acts as a filter for water running off of the country. Over grazing by feral goats can increase silt flow into the reservoir and reduce water purity. This project aims to keep the top soil on the hills rather than washing down the creeks. Due to the extremely rugged terrain it is very difficult to maintain a goat proof fence around the reservoir which is used as a watering point for feral goats. The goats can sometimes become bogged and die on the waters edge and also contaminate the waters edge with urine and droppings. Increasing trapped watering points near the reservoir and trapping goats that attempt to water on the reservoir help to reduce contamination of the water.

The infrastructure to be erected with funding assistance is to be made up of high quality materials with a long life-span.

For example;

- 7mm reinforcing mesh yards instead of 4-5mm sheep yard mesh
- 6mm wall strainer posts
- galstar posts
- high galv hinge joint

I have chosen to do this because project longevity equals project cost effectiveness. Up to 50% of the total cost of the project is made up of labour and ground works. The cost of which does not change whether using materials with the ability to last 10 years or 60 years. The longer this management program and the infrastructure it uses is effective, the greater the benefit to the public through increases in eco-system health and water quality.

The total area of Belmont Station is 48,490 hectares (121,225 acres). The project area that will directly benefit from this program is 11,118 hectares (27,795 acres) however the rest of the Station's groundcover will indirectly benefit for future generations through the opportunity to spell paddocks in a rotational grazing system.

The knowledge and experience gained in the management and protection of the project can be used by the public to compare and refine best management practices of semi-arid range lands. I understand that my input into the WCMA's public communication may help to educate and inform the public through media releases and newsletter articles.

Q14. Project Risk Management Table (Please refer to page 10 in the guidelines):
 Attach additional paper if more than five risks are identified.

_ / 10

<i>Risk Identified</i>	<i>Likelihood</i>	<i>Consequence</i>	<i>Risk Rating</i>	<i>Actions required to manage risk</i>
1. Damage to wings and yards on traps, holes made under and through by goats and kangaroos trying to water.	Almost certain	Moderate	High	<input type="checkbox"/> Holes in the wings and yards can be repaired through regular maintenance and monitoring of the infrastructure. <input type="checkbox"/> Maintain culling of kangaroos in accordance with DEC.
2. Damage to flood gates associated with trap through heavy rain.	Likely	Major	High	<input type="checkbox"/> Have flood gates separate from the yard and fence infrastructure so that large flooding creeks damage flood gates only. <input type="checkbox"/> Have flood gates tied up when trapping is not in process. <input type="checkbox"/> Tie flood gates in a raised position when thunderstorms are forecast.
3. Extended wet periods allowing the goats to avoid watering at the trap sites.	Possible	Moderate	Medium	<input type="checkbox"/> Use the wings associated with the traps to muster goats onto, rather than waiting for the goats to come into water.
4. Force yards and gates damaged when hit by goats under pressure.	Almost certain	Minor	Medium	<input type="checkbox"/> Regular repair and maintain yards and gates to prolong the lifespan of the infrastructure. <input type="checkbox"/> Use higher quality materials than CMA standards to reduce the probability and extent of damage.
5. Increased grazing pressure due to new watering point.	Almost certain	Major	High	<input type="checkbox"/> Control grazing pressure using trap. <input type="checkbox"/> De-stock area of domestic stock. <input type="checkbox"/> Control kangaroos through culling in accordance with DEC.
6. Goats may graze on Belmont, but travel to a neighbouring property to water.	Likely	Major	High	<input type="checkbox"/> Muster the goats onto the wings associated with the traps to rather than waiting for them to water. <input type="checkbox"/> Consult with neighbours about working together to tackle elusive and cunning mobs of goats.
7. New water point has not relieved grazing pressure on old existing watering point.	Likely	Major	High	<input type="checkbox"/> Shut down old watering point to recover. <input type="checkbox"/> Revise and improve pest control methods.

Q15. Proposed timeline for the project
Projects must be completed within six months

_ / 10

Activity	Completion Date
Blue Anchor trough Trap	20/07/2007
4km wing to T-junction yard	10/08/2007
Redbanks yard and wing	30/08/2007
Wing from Redbanks to Brinkworth yard	30/09/2007
Brinkworth yard and wing	20/10/2007
T-Junction yard and wing	20/11/2007
Wilangee Road tank, pipeline, apron and trough	27/11/2007
Wilangee Road trap yard	14/12/2007

Q16 APPLICATION DECLARATION

I PHILLIP BLORE of BELMONT STATION declare:
 (PRINT NAME) (PROPERTY/LANDCARE GROUP/ORGANISATION)

That the information provided in this application is complete and correct. I have read and understood the guidelines concerning this application.

Is this declaration being signed on behalf of a group? YES NO

Signed:  Date: 30/3

Q17 Are you willing to allow the Western CMA to use your project for media promotion, case studies, further research, field days etc. if asked?

(please note – specific permission from you will be sought before any action is taken)

- Yes
- No
- Will think about it



Clients Name

P. Blore

No. 154485

Address

Belmont

Branch

B'Hill

Attn John Postcode

Date

26/3/07

Phone No.

80884790.

Fax

Number	Description	P/Unit (\$)	GST	Total
6	12' Gate.	e 90.00	54.00	594.00
6	10' Gate.	e 82.00	49.20	541.20
2	6' Gate.	e 70.00	14.00	154.00
1	8' Gate.	e 75.00	7.50	82.50
4	3' Gate.	e 59.00	23.60	259.60
2	4' Gate	e 62.00	12.40	136.40
22	Gate fitting packs	e 20.00	44.00	484.00
750	165um black Star Post	e 3.90	292.50	3217.50
750	165um galstar post.	e 4.85	363.75	4001.25
100	180um Star post. black	e 4.80	48.00	528.00
12	Tyeasy wire 1500m	e 140.00	168.00	1848.00
30	7/90/30 Hinge joint 200m	e 186.50	559.50	6154.50
30	7/90/30 StockHte 200m	e 195.00	585.00	6435.00
30	7/90/30 Griplock 200m	e 220.00	660.00	7260.00

This is a quotation, not a contract and is for materials listed. All materials to be charged for on the quantity actually supplied at prices ruling at time of delivery. This list has been prepared as a service, but no responsibility can be accepted for any omissions-unders or overs. These will be charged for as extra or deducted as the case may be.

Prices quoted included Freight

Branch Stocks.

Prices quoted are current but will be those prices ruling at date of delivery, note that GST will be added as applicable at the time of invoicing.

\$ Total inc GST

ORDER

Clients Signature

For Elders Limited

FROM

B. A. R. & H. D. SYMONDS Pty. Ltd. trading as

SYMONDS STEEL

A.C.N. 272 913 395

173 HARRIS ST., BROKEN HILL 2880

Ph: (08) 8088 1322 Fax: (08) 8088 1464

QUOTATION

16198

TO

J. Blore
Bremont Jnr

22.3.06

We have pleasure in submitting the following Quotation for your consideration:-

To Supply Only;

18 x F718 MESH	2772.00
80 x 25 NO BUSH PIPE	2460.00
2 x 2100 x 1200 x 2.1 C/PAGE	175.00
20 x 1 meter x 2 INC. IRON	192.00
60 x 100 NO BUSH PIPE	8545.00

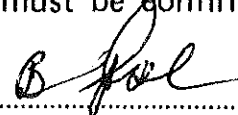
TOTAL GST

\$14,144.00

Price includes the GST

This Quotation is firm for 30 days only, after which time it must be confirmed.

Signed



SOLID CONSTRUCTION

PO Box 6040
BROKEN HILL NSW 2880

ABN 68 533 029 114

Phone / Fax 08 8087 7820

Mobile 0428 858 063

NAME: BLORE PASTORAL
ADDRESS: BELMONT STATION

DESCRIPTION	UNIT PRICE (GST EXCLUDED)	TOTAL GST EXCLUSIVE	GST	TOTAL GST INCLUSIVE
440M x 2 7/8 inch NB pipe (6mm wall)	\$14.00	\$6160.00	\$616.00	\$6776.00
22 x sheets F718 mesh	\$125.00	\$2750.00	\$275.00	\$3025.00
780m x 25mm NB pipe (3.2mm wall)	\$3.50	\$2730.00	\$273.00	\$3003.00
5 x sheets checkerplate 1.2m x 2.4m (2.1mm thick)	\$80.00	\$400.00	\$40.00	\$440.00
40 x sheets of 1m long corrugated iron(0.47mm)	\$9.00	\$360.00	\$36.00	\$396.00
850 x 165cm Galvstar posts	\$4.50	\$3825.00	\$382.50	\$4207.50
100 x 180cm Galvstar posts	\$5.20	\$520.00	\$52.00	\$572.00
11 x rolls Tyeasy wire	\$138.00	\$1518.00	\$151.80	\$1669.80
37 x rolls 7/90/30 stocktite	\$190.00	\$7030.00	\$703.00	\$7733.00
1 x 2.5mm Tie wire	\$114.50	\$114.50	\$11.45	\$125.95
Gates				
9 x 3.6m	\$88.00	\$792.00	\$79.20	\$871.20
5 x 3m	\$77.00	\$385.00	\$38.50	\$423.50
2 x 2.4m	\$75.00	\$150.00	\$15.00	\$165.00
3 x 1.8m	\$70.00	\$210.00	\$21.00	\$231.00
7 x 1m	\$55.00	\$385.00	\$38.50	\$423.50
2 x 1.2m	\$60.00	\$120.00	\$12.00	\$132.00
28 x gate hinges and latches	\$16.50	\$462.00	\$46.20	\$508.20

(Please Note: All quote valid for 30 days only)

LANDMARK

an AWB company

Phone 08 8087 2371

BROKEN HILL

Fax 08 80881254

QUOTE NO. - 293A

DATE - 29/03/07

NAME: BLORE PASTORAL
ADDRESS : BELMONT STATION

We have pleasure in - Submitting the following quotation
 Confirming your order for

QUANTITY	SPECIFICATIONS	UNIT PRICE (GST EXCL)	TOTAL GST EXCLUSIVE	GST	TOTAL GST INCLUSIVE
60 X 6.50M	100NB MED BLK PIPE PE	123.20	7392.00	739.20	8131.20
77 X 6.5M	25NB BLK PIPE PE	24.05	1851.90	185.19	2037.09
4 X 2.1MM	FLOOR PLATE 1.2M X 2.4M	76.50	306.00	30.60	336.60
18 X 2.4M X 6M	RL718 MESH	95.75	1723.50	172.35	1895.85
FREIGHT TO BROKEN HILL		330.00	330.00	33.00	363.00
TOTAL					

PRICING BASIS ~~EX CAPITAL CITY~~
 EX BRANCH
~~DELIVERED~~

TERMS OF PAYMENT

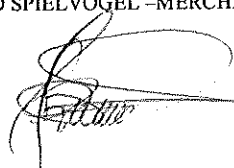
DELIVERY INSTRUCTIONS:
 ATTACHMENTS:

CONDITIONS OF SALE/QUOTATION

- Prices quoted are subject to acceptance within 7 days and availability of product quoted
- Price variation subject to manufacturers price ruling at date of delivery
- Return of specially ordered goods will not be accepted
- Advertising material, photographs or illustrations provided represent generally, the goods offered but are not binding in detail
- Delivery time quoted is not guaranteed and is subject to extension to cover delay caused by strike, lockouts, fire, transport failure or any event beyond our control

ORDERED AND SIGNED BY

DAVID SPIELVOGEL -MERCHANDISE SALESPERSON



LANDMARK

an AWB company

Phone 08 8087 2371

BROKEN HILL

Fax 08 80881254

QUOTE NO. - 293C

DATE - 29/03/07

NAME: BLORE PASTORAL
ADDRESS : BELMONT STATION

We have pleasure in - Submitting the following quotation
 Confirming your order for

QUANTITY	SPECIFICATIONS	UNIT PRICE (GST EXCL)	TOTAL GST EXCLUSIVE	GST	TOTAL GST INCLUSIVE
6 X	3.6M BUDGET GATE	94.90	569.40	56.94	626.34
6 X	3.0M BUDGET GATE	82.50	495.00	49.50	544.50
1 X	2.4M BUDGET GATE	75.50	75.50	7.55	83.05
8 X	1.0M BUDGET GATE	61.30	490.40	49.04	539.44
22 X	25MM GATE GUDGEONS	6.65	146.30	14.63	160.93
22 X	25MM GATE SADDLES	1.50	33.00	3.30	36.30
22 X	CHAIN LATCHES	9.00	198.00	19.80	217.80
TOTAL					

PRICING BASIS ~~EX CAPITAL CITY~~
 EX BRANCH
~~DELIVERED~~

TERMS OF PAYMENT

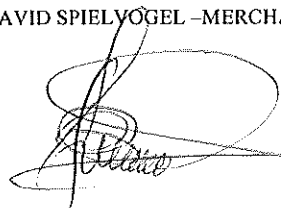
DELIVERY INSTRUCTIONS:
 ATTACHMENTS:

CONDITIONS OF SALE/QUOTATION

- Prices quoted are subject to acceptance within 7 days and availability of product quoted
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- Delivery time quoted is not guaranteed and is subject to extension to cover delay caused by strike, lockouts, fire, transport failure or any event beyond our control

ORDERED AND SIGNED BY

DAVID SPIELVOGEL - MERCHANDISE SALESPERSON



**Pre-Inspection Report (must be completed by a Western CMA officer prior to submission)
For Projects Over \$20,000 Western CMA Contribution**

1. GPS points: If possible, provide GPS points for existing infrastructure and/or proposed infrastructure. If access is a problem, GPS points need not be supplied.

description of existing/proposed infrastructure	GPS point
1. Blue Anchor tank trough and 1,000 gallon poly tank	S 31 ⁰ 50.045 & E 141 ⁰ 14.706
2. Existing fence – four plain and one barb, steel droppers 15m apart	Start: S 31 ⁰ 48.345 & E 141 ⁰ 41.149 End: S 31 ⁰ 47.575 & E 141 ⁰ 14.136
3. Proposed Brinkworth trap site – easterly corner	S 31 ⁰ 44.734 & E 141 ⁰ 16.193
4. Proposed Red Banks trap site – on a soak	S 31 ⁰ 44.367 & E 141 ⁰ 15.741
5. Willangee Road tank – site for proposed trap yard and water point 1.2km East at foot of the Mundi Mundi Ranges	S 31 ⁰ 46.413 & E 141 ⁰ 12.188

2. Existing Infrastructure: What is the current condition of the infrastructure? What is the cost sharing arrangement? (see page 8 of the Groundcover Management Guidelines)

- The trough at Blue Anchor does not have an apron but this will be addressed as part of the project with rails put up to stop stock jumping over and an apron built on the low side.
- The existing fence will have an extra dropper put in between the ones 15m apart – making them 7.5m apart.

The cost sharing arrangement is correct.

3. Is the proposed project a logical and strategic project for the property?

The components of this project have obviously been well thought out. Proposed trap yards are being located in areas that dictate stock movements due to factors such as wind direction, known migratory routes, water, habitats and geography. In effect – the goats will literally trap themselves.

On inspection, goats sited would have easily been 1,000. The destruction they have caused to bush and trees (such as chewing up into the branches and climbing) is obvious, while ground cover around water holes and soaks has been eaten well back. As there are no sheep in the paddock, the intentions of this project to drastically reduce and control goat numbers will definitely have an immediate impact on ground cover regeneration.

4. Is this pre-inspection report based on prior knowledge or an on-ground inspection of the proposed area?

On-ground inspection

Pre-Inspection Report completed by:

Katrina Hannigan
Western CMA officer

Katrina Hannigan
Signature

28/3/2007
Date

W2589

0057/2002/1P
RECEIVED KIPP
30/4/08

Groundcover Program Application – Due 30th April 2008

Make sure you have read and understood the guidelines before starting this application.

Q1 Contact / Business Details

Name	<u>John Richard blore</u>
Property Name	<u>Belmont Station</u>
Mailing Address	<u>Belmont Station Via Broken Hill, NSW, 2880</u>
Western Lands Lease number Lot, DP	1139 709 14256
Telephone	<u>(08) 80885310</u>
Fax	<u>As Above</u>
Mobile	<u>0428885310</u>
Email	<u>jablore@bigpond.com</u>
ABN	<u>17495619726</u>
Trading Name	<u>Blore Pastoral Co</u>
GST Registered	<u>Yes</u>

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Q2 Project Title. (less than ten words)

<u>Mundi Mundi Range and Belmont Plains Conservation Program</u>
--

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Q3 Western CMA office and staff that assisted you with the application

WCMA Office	<u>Broken Hill</u>
WCMA staff member	

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Q4 Natural Resource Management outputs proposed by the project.

Area of native vegetation protected by TGP fencing	<u>2500</u>	ha
Km length of TGP fencing	<u>24</u>	km
Number of additional stock watering points installed	<u>0</u>	
Number of trapyards installed	<u>3</u>	
Area of pest animals controlled	<u>6331</u>	ha
Type of pest animals controlled	<u>Goats</u>	
Area of pest plants controlled	<u>0</u>	ha

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Q5 For projects involving boundary fences please list the neighbour's letters that are attached. (see page 9 of the guidelines)

Q6 Background: For what other Western CMA projects have you received funding?

Mundi Mundi Range Goat Management Program
Mesquite sprayings and removing (WCMA/Defeating the weeds menace)
Contour furrowing and ponding – through Soil Conservation

Q7 Strategy / Priority: How does this project relate to your property's past, present and future management and why is this project a priority? 10%

This project is two stages of an overall grand cover and soil management program; 1. The Mundi Mundi Range Goat Management program (stage 2) and 2. The Belmont Plains Conservation Program (stage 1).

The Mundi Mundi Range Goat Management program (stage 2) is the final stage in an on-going program aimed at reducing the total population of feral goats grazing in the Belmont Hills. The Stage 1 of this program has already succeeded in removing an average years worth of goats (1500) in its first four months of operation. Stage 2 focuses on the Bore paddock and the 4-mile paddock which is the catchment area for Lake's Grave creek, one of the main creeks supplying Umberumberka Reservoir. (One of Broken Hill's water supplies).

All seven paddocks in the Belmont Hills are currently de-stocked due to drought conditions; however the 4-mile and Bore paddocks continue to be over-grazed by feral goats. The goats strip all pasture as well as young mulga and bullock bush which is important for holding together the hill's soil structure. In the last five years a large percentage of perennial bush has died due to moisture stress from the drought. The bush that is remaining has very low levels of foliage and is being threatened by over-grazing. In order to avoid irreparable damage I believe that it is a priority to reduce goat populations through the implementation of traps on the remaining untrapped watering points. The three traps I propose to construct cover all available watering points in the 4-mile and Bore paddocks (including leaks on the Umberumberka pipeline). Their designs and method of use is based upon my observations of the natural movement of goats from their preferred feeding and breeding grounds into and out of watering points. The use of long wings in the '4-mile Goat Yard' trap allows for trapping of goats off of a number of different watering points as well as allowing for yarding of goats at times when they

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- Q5 Property Location: Mark the location of the property which the project will occur on with an X. _/1¶
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- Cma boundary map needed¶
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- Deleted: foliage

are not watering.

By Greatly reducing goat numbers over an ongoing period and de-stocking the area of domestic stock, groundcover and trees will have a chance to regenerate.

Once low goat numbers can be maintained, and there have been sufficient rain periods to regenerate ground covers, domestic stock may be introduced into the area in a rotational management system. The hills paddocks can be used to spell the plains paddocks and vice-versa.

The Belmont Plains Conservation Program (stage 1) is the first stage in a new program aimed at combating the gradual reduction of timberland in the northern part of the Belmont plains. Over the last ten years seasonal conditions have caused this timberland to gradually recede. In normal years as the older timber dies off, (either by reaching the end of its life cycle or due to stress from low sub-soil moisture) it is replaced by new seedlings or suckers. However, over the last ten years these seedlings and suckers have been aggressively grazed by feral goats and kangaroos, substantially stunting growth or killing the plant. This has led to erosion of the soil structure by both wind and heavy rain.

I propose to fence the Southern most section of this timberland with a TGP fence to allow for a greater level of control of grazing pressure during critical stages of regeneration of timbered areas.

The Southern, Eastern and Western areas of the proposed TGP paddock are areas where the open red clay plains (bush country) meet the softer red, sandy country which is held together and protected by stands of mulga, black oak, bullock bush and purple-wood wattle, as well as some areas of blue bush. These stands of timber stop the sandy soil from blowing away and act to pool water onto open flats which grow copper burrs, various grasses and herbage, as well as perennial salt bush.

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The 'Purple-wood Wattle' (*Acacia Carneorum*) is a threatened species in NSW and its conservation status in both NSW and nationally is 'Vulnerable'. Once common around the Broken Hill area, it is now considered rare. This species is known to occur in only one conservation reserve, Kinchega National Park, where it is represented by fewer than 1000 individuals. Purple-wood Wattle reproduces in two ways; by setting seed and by suckering clones. This species rarely sets seed therefore its main mode of reproduction is by suckering, making it an excellent sand binder. Purple-wood Wattle is a long-lived perennial, and carbon dating of fine plants from Kinchega National Park indicated ages of between 120 and 330 years old. The DECC threatened species website lists one of the major threats to the Purple-wood Wattle as being kangaroos and goats, which strip the stems of phyllodes (wattle leaves), often killing the plant.

There are two substantial colonies of Purple-wood Wattle in the proposed TGP paddock. Both contain approximately 60 plants, with one stand on the Western side of 'White Gate' paddock and the other on the Northern side of the 'Ram' paddock.

There is evidence of plant deaths in both colonies, in the proposed TGP area. The aim of this TGP is to stop the recession of the timber communities in White Gate and Ram paddocks. I cannot stop die back from occurring due to life cycles of drought, but a TGP paddock would allow for stricter controls on the grazing pressure applied to the paddocks while the timber is regenerating.

In the short term, even without extensive regeneration of timbered areas, a tighter control of TGP on groundcovers such as grasses and shrubs would allow for maintenance of soil and root structures preventing further erosion.

At present, four of the twelve Belmont plains paddocks are in a de-stocked phase. A TGP fence around White Gate and Ram paddocks would allow for complete de-stocking of the area if groundcovers reached a critical stage. It would also allow for maximum benefit to domestic stock from rotational grazing when ground covers are plentiful, reducing competition from pest animals and kangaroos.

Q8 Infrastructure: In point form please detail the works that will be carried out as a result of this project. Trap yard and fence designs must be drawn. 10%

- Fence section 1 = 16km of internal existing fencing along the western and southern sides of Happy Valley paddock (see map) will require dismantling OR
- 4.4km x 2" poly pipe with cement trough and 5000g tank

BORE PADDOCK TRAP

Trap around existing trough

- 18m x 24m reinforcing mesh enclosure 13m high with top and belly rail of 25mm pipe (32mm wall), plus 12m long forcing yards of same materials joining onto a loading ramp (80m of mesh total, 160m of 25mm pipe).
- 34 posts approximately 3m apart (75mm diameter with 6mm thick walls @ 2m long and 800mm in ground).
- 2 x goat trap ramps 3m x 1m x 3m in V shape; mesh, top rail and belly rail, lined with 0.47mm corrugated iron and built up into a ramp with surrounding large rocks and stone. Please refer to diagram.
- 1 x 2.4m long loading ramp with 1.2m high sides (home made), checker plate floor (1.2m x 2.4m) with 7 side rails (25mm pipe). Please refer to diagram.
- 70m x 100m hinge joint enclosure extending from the corner of the mesh enclosure. Constructed with 350m of 8/90/30 hinge joint with bottom and top barb and two plain wires in between 60 x 165cm star pickets required 1 every 6m, 700m of HT 1.8mm barb and 700m HT

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Area of native vegetation protected by TGP fencing ... [1]

plain wire 2.5mm, 60m of tie wire 2.5mm. There are 8 end assemblies (16 posts, 24m of 50mm pipe).

NOTE – This hinge joint enclosure is an evolution from trap designs in STAGE 1 of the Mundi Mundi Range Goat Management Program. It has been adapted to 2 similar traps around troughs in STAGE 1 and makes allowances for particular cunning mobs of goats. E.g. when a mob of say, twenty goats come along and jump into the trap, they have a drink and then walk around trying to find a way out of the trap. When the next mob of say, 30 goats come along they see the concerned behaviour of the 1st mob and become suspicious. Sometimes I might arrive at a trap and have one mob inside the trap and one mob outside. By adding the enclosure, the first mob may have a drink and then wander out into the enclosure and lie under a tree and thus not arouse the suspicions of the next mob. This addition has been extremely effective.

I do not believe the hinge joint enclosure should be directly around the trough for two reasons:

1. When the trap is not set the hinge joint enclosure is shut closed which allows the groundcover to regenerate and eliminates soil disturbance through the general use of the watering point.
2. If stock had to enter the hinge joint enclosure in order to water it provides added pressure on the fence from stock (especially kangaroos and wallaroos) trying to find their way in and out of the enclosure, leading to damage to the fence and a reduced fence lifespan. When the trap is set the gate is open from the mesh enclosure into the hinge joint enclosure.

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There are 10 gates

- ☞ 3 x 3.6m gates around hinge joint enclosure
- ☞ 3 x 3.6m gates around mesh yard
- ☞ 1 x 3.6m gate trap yard → 1st force yard
- ☞ 1 x 2.4m gate 1st force → 2nd force
- ☞ 1 x 1.8m gate 2nd → 3rd force
- ☞ 1 x 0.75m gate 3rd force → loading ramp

WHITE ROCK TRAP

A 150m x 150m hinge joint enclosure around White Rock Dam with a funnelled race in the Northwest corner leading to a weld mesh yard.

The yard consists of 2 holding yards and 2 force yards leading to a loading ramp.

- ☞ 55m of F718 reinforcing mesh 12m high
- ☞ 110m 25mm pipe (32mm wall) for top and belly rail
- ☞ 26 posts (75mm diameter, 6mm wall, 2m long)
- ☞ 6 gates (2 x 3m, 1 x 2.4m, 2 x 1.4m, 1 x 0.75m)
- ☞ 6 gate packs

The hinge joint enclosure is constructed of 8/90/30 hinge joint with a top and bottom barb and 2 HT plain wires.

- ☞ 700m 8/90/30 hinge joint
- ☞ 150 star pickets (165cm, 5m apart plus peg downs)
- ☞ 10 end assemblies (20 posts, 30m of 50mm pipe)
- ☞ 1.4km H/T 1.8mm barb
- ☞ 1.4km H/T 2.5mm plain wire
- ☞ 150m tie wire 2.5mm
- ☞ 4 x 3.6m gates and gate packs
- ☞ 1 x 3m goat trap gates
- ☞ 2 x trap ramps (8 posts, 12m mesh, 24m inch pipe, 12 sheets of 1.2m corrugated iron)

THE 4-MILE GOAT YARD

The 4-Mile Paddock contains a series of hills and ridge lines which are separated from the main Mundi Mundi Range of hills by 'Lakes Grave' creek and the low lying valley it flows through. There are several watering points in the 4-Mile paddock that are utilised by feral goats, these include;

- ☞ The 4-Mile dam
- ☞ The 4-Mile trough
- ☞ Numerous leaks along the Umberumberka Reservoir to Broken Hill pipeline and spur pipeline to Silverton.

This series of wings and yard aim to trap goats watering on any of the above mentioned waters.

The wing requires;

- ⌘ 1.3km of 8/90/30 Hinge joint
- ⌘ 250 galstar posts (165cm) – 1 every 6m plus 35 for peg downs
- ⌘ 9 end assemblies
- ⌘ 1500 maspro staples
- ⌘ 2.6km barb
- ⌘ 2.6km H/T plain wire
- ⌘ 250m tie wire (2.5mm)

The yard requires;

- ⌘ 85m (7sheets) F718 reinforcing mesh
- ⌘ 170m down grade 25mm diameter pipe (3.2mm wall)
- ⌘ 40 posts (75mm diameter 6mm wall)
- ⌘ Gates → 1 x 3.6m
→ 3 x 3m
→ 1 x 2.4m
→ 2 x 1.8m
- ⌘ 10 gate packs

The goats that graze in the 4 – mile paddock feel safest and more at home in the bigger, rougher hills of the Mundi Mundi range. There is only one ridgeline which extends almost to these rougher hills and it is broken by a steep gorge which the 'Lakes Grave' creek runs through.

When disturbed in the 4- mile paddock, the goats naturally head for these rougher hills and must run along this ridgeline to avoid transversing the flatter, more open valley either side.

This trap involves starting two wings down on the flatter ground, one either side of the ridgeline, funnelling them into a race which extends down to a yard on the flatter valley country. The goats must be mustered on motorbikes; however they can be guided from a large distance away as they will eagerly follow the rougher hill ridgelines, believing they are getting away. Once the goats are travelling along one of the wings they will not be able to see the other side wing closing in on them because of the ridge top being in the way. By the time the goats can see both wings they will have entered into the funnel and I have only a minimal distance to cover in order to block their escape. Through my experience using traps from stage 1 of the Mundi Mundi Range Goat Management Program, I found that the goats are much more willing to enter and run down a long race than they are willing to run straight into a yard. Once they have entered the race it is much easier to block their escape and yard them.

Due to the numerous watering points in the 4-mile and the sporadic nature of pipeline leaks, this style of trap is much more cost effective and efficient than traps on individual waters.

BELMONT PLAINS CONSERVATION PROGRAM STAGE 1

TGP Fence around 'White gate' and 'Ram' Paddocks. The total distance around the proposed fence line is 20.5 km.

SECTION 1

The Northern, Western and Southern fence lines as well as 1.2km of the eastern fence are to be constructed from completely new materials. They are to be running parallel to, but 50m away from, the existing plain wire fence. This will create regeneration laneways around these three sides of the proposed TGP paddock and allow for the regeneration of perennial shrubs and grasses as well as the accumulation of seed stocks.

Required materials

Northern Fence

- ☞ 4.4km 8/90/30 hinge joint
- ☞ 630 galstar posts (7m apart)
- ☞ 8.8km H/T barb 1.57mm
- ☞ 8.8km H/T plain wire 2.5mm
- ☞ 630m tie wire 2.5mm
- ☞ 3800 maspro staples
- ☞ 4 end assemblies
- ☞ 3 gates 3.6m

Western Fence

- ☞ 4.7km 8/90/30 hinge joint
- ☞ 680 galstar pickets
- ☞ 9.4km H/T barb
- ☞ 9.4km H/T plain wire (2.5mm)
- ☞ 680m tie wire
- ☞ 4100 maspro staples
- ☞ 6 x end assemblies
- ☞ 4 x 3.6m gates

Southern Fence

- ☞ 4.3km 8/90/30
- ☞ 650 star pickets
- ☞ 8.6km H/T barb
- ☞ 8.6km H/T plain wire (2.5mm)
- ☞ 650m tie wire 2.5mm
- ☞ 3900 maspro staples
- ☞ 4 x end assemblies
- ☞ 3gates (3.6m)

1400m of new fence along 'Night Paddock' section of Eastern Fence to create new section of regeneration lane way.

- ☞ 1400m 8/90/30 hinge joint
- ☞ 200 x star pickets (165cm)
- ☞ 2.8km H/T barb

- ⌘ 2.8km H/T plain
- ⌘ 200m tie wire
- ⌘ 1200 maspro staples
- ⌘ 2 x end assemblies
- ⌘ 2 x gates (3.6m)

SECTION 2

The Eastern side as well as 720m of the Western side of the TOP paddock is to be constructed by attaching 8/90/30 hinge joint to the existing plain wire fence. This existing fence is already one side of an existing regeneration laneway. It will require one extra star picket every 15m. The existing fence consists of 2 barbs and 3 plain wires. The belly barb will be dropped down to the bottom wire of the hinge joint to provide extra strength and prevent kangaroos from digging holes underneath the fence. The 720 meters attached to the existing fence on the Southern part of the Western fence follows an existing regeneration paddock so a new lane way is not needed.

Required Materials

Eastern Fence

- ⌘ 600m of 8/90/30 attached to 'Jordy's Paddock' fence
- ⌘ 40 star pickets (165cm)
- ⌘ 80m
- ⌘ Tie wire
- ⌘ 480 maspro staples

- 5.4 ⌘ ~~2.5~~ 5.4km of 8/90/30 hinge joint attached to existing regeneration lane way fence
- ⌘ 300 star pickets
 - ⌘ 600m tie wire
 - ⌘ 3600 maspro staples

720 meters attached to existing fence on Southern part of Western fence

- ⌘ 720m 8/90/30 hinge joint
- ⌘ 50 star pickets (1 every 15m)
- ⌘ 600 maspro staples
- ⌘ 100m tie wire
- ⌘ 1 end assembly

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Q9a Trap yard design (please refer to page 9 of the guidelines) 10%

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PLEASE SEE ATTACHED DIAGRAMS

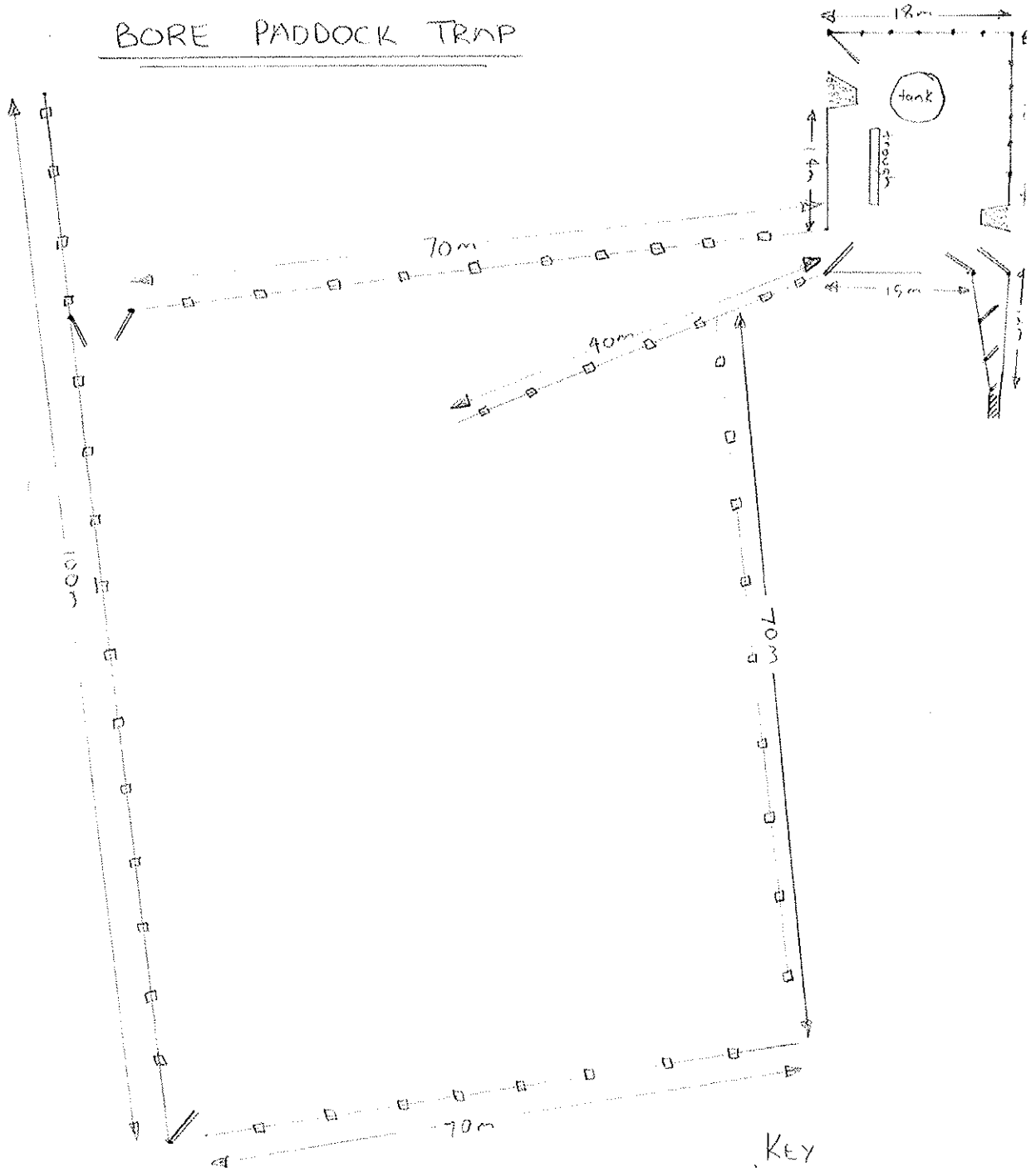
Q9b Fence Panel design, (include more than 1 design if required (please refer to page 9 of the guidelines)

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PLEASE SEE ATTACHED DIAGRAMS

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BORE PADDOCK TRAP



SCALE

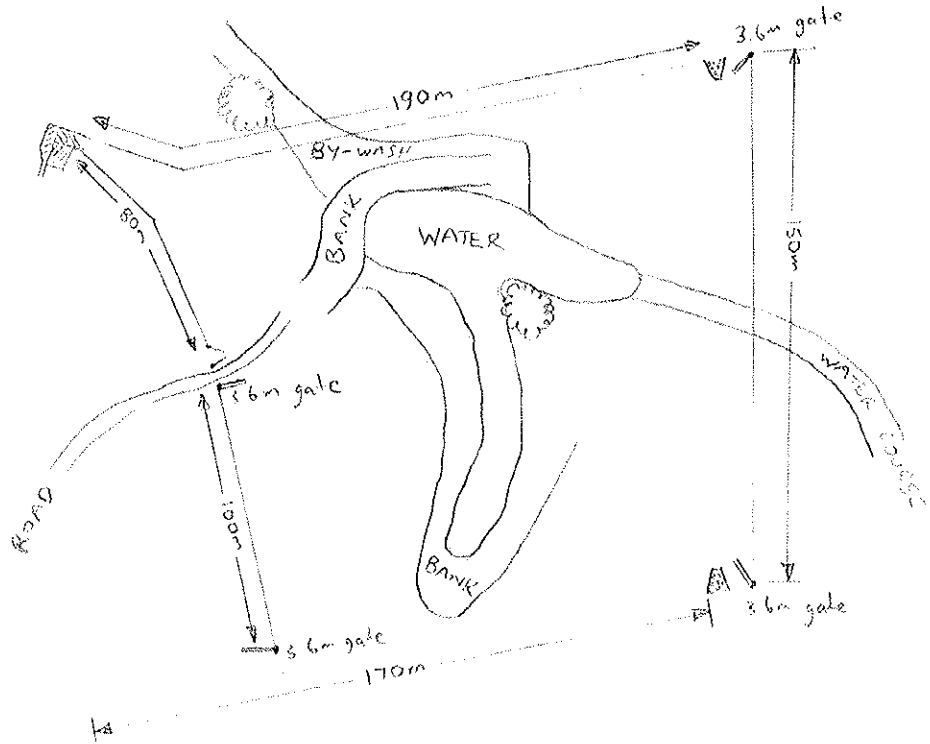
1 : 500

KEY

- 1.3 m HIGH VELOMESH FENCE WITH TOP AND BOTTOM RAIL
- □ □ LINGERJOINT FENCE
- GATE
- ▴ TRAP RAMP
- ▨ LOADING RAMP

WHITE ROCK TRAP







PLEASE SEE
DETAIL NEXT
PAGE.



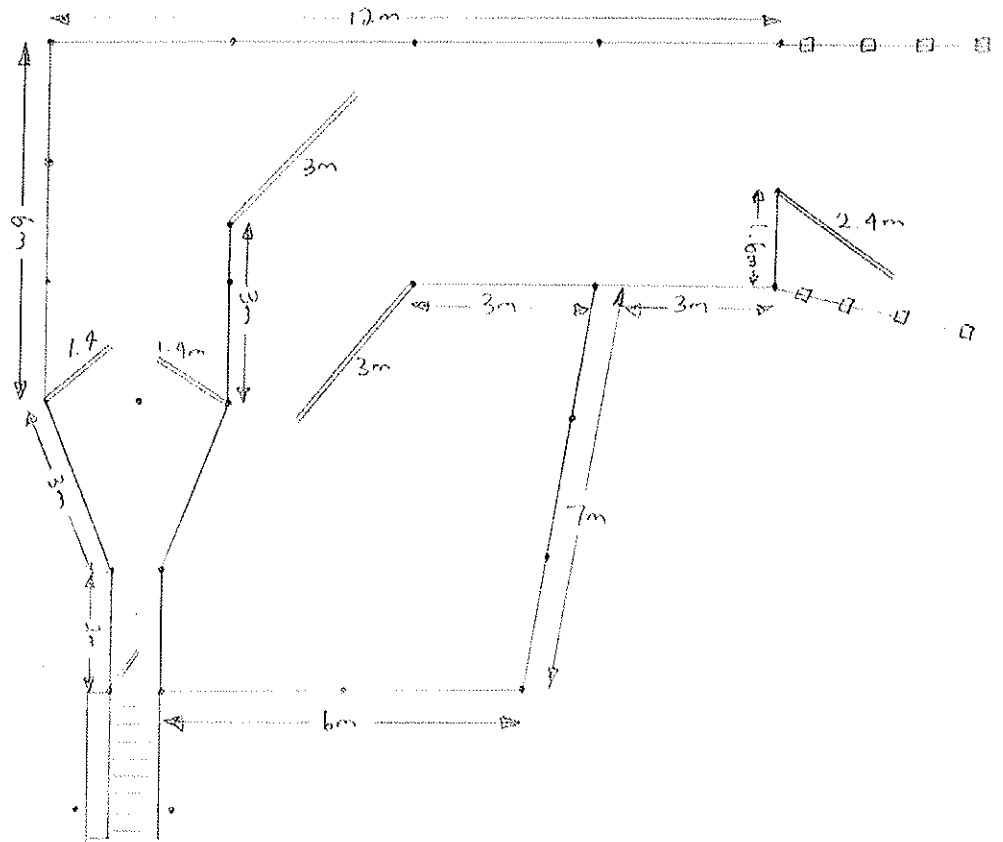
SCALE

1 : 1500

KEY

-  Hingejoint fence
-  gate
-  Trap Gate
-  Trap Ramp
-  Tree
-  Weldmesh yard

DETAIL OF
WHITE ROCK YARD



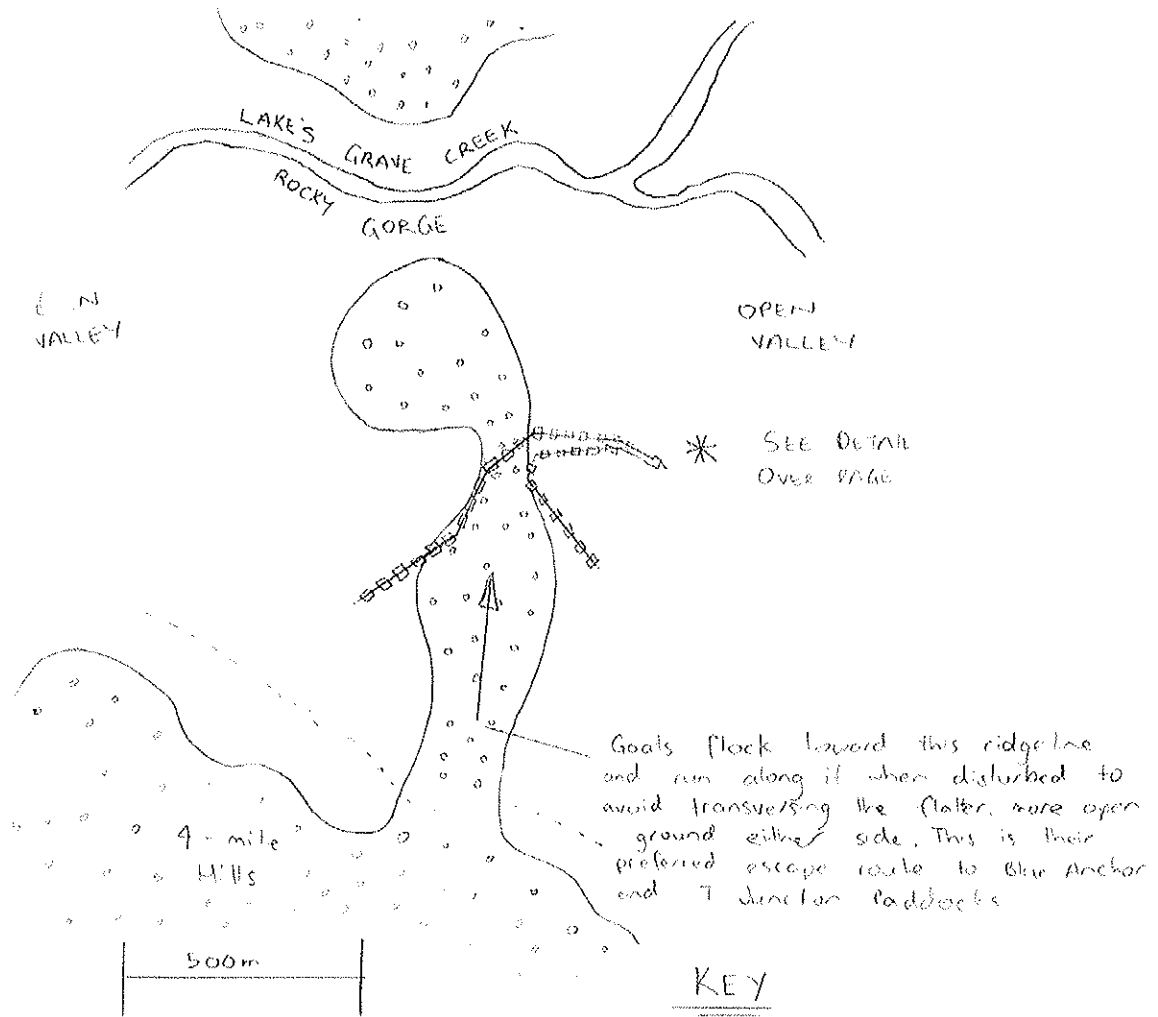
SCALE

1cm = 1m
1 : 100

KEY

- 75mm Post (6mm wall)
- weld mesh fence (1mm mesh)
1.3m high with Top rail
and belly rail
- ▣▣▣ Hinge joint wings
- ==== gate
- ▭ Loading Ramp

4-MILE GOAT YARD



SCALE

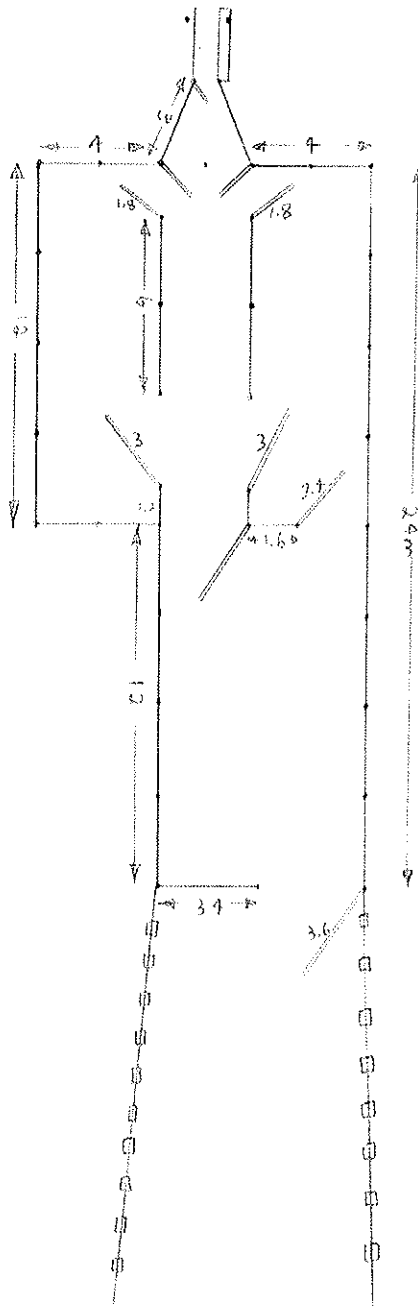
1 : 12 500

1cm = 125 m

- Access Track
- o o o o - Rocky Ridge of hills
- ▣▣▣▣ - Proposed Hingejoint wings

DETAIL OF

4-MILE GOAT YARD



SCALE

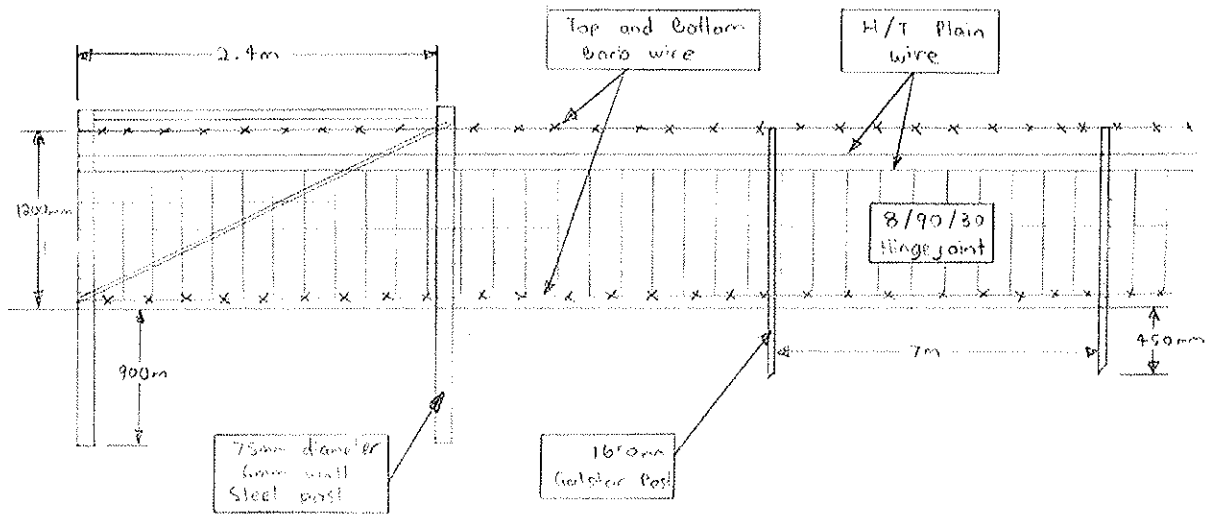
1cm = 2m

1 : 200

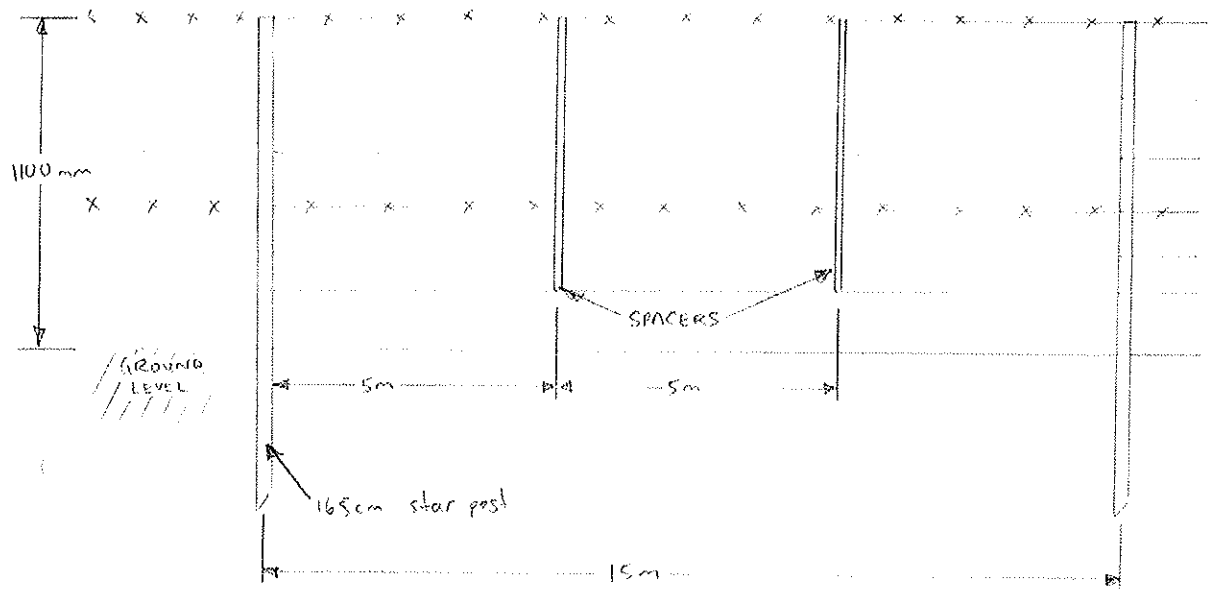
KEY

- 75mm Post
- welded fence
1.3m high with Top & Belly Rail
- — — hinge post wings
- — — gate
- — — loading ramp

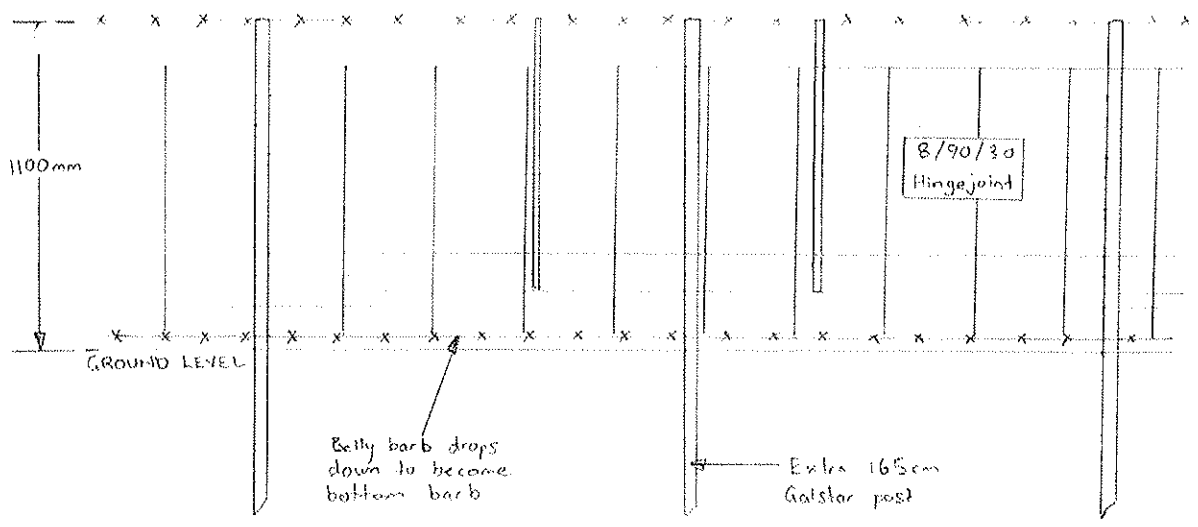
FENCE PANEL DESIGN



EXISTING PLAIN WIRE FENCE



EXISTING PLAIN WIRE FENCE WITH HINGE JOINT ATTACHED



Q10a Property Plan/Map – see page 13 for details.

10%

Please use the Legend supplied

Name of property: Belmont Station

Area of property: 48489

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PLEASE SEE ATTACHED DIAGRAMS

Existing Infrastructure

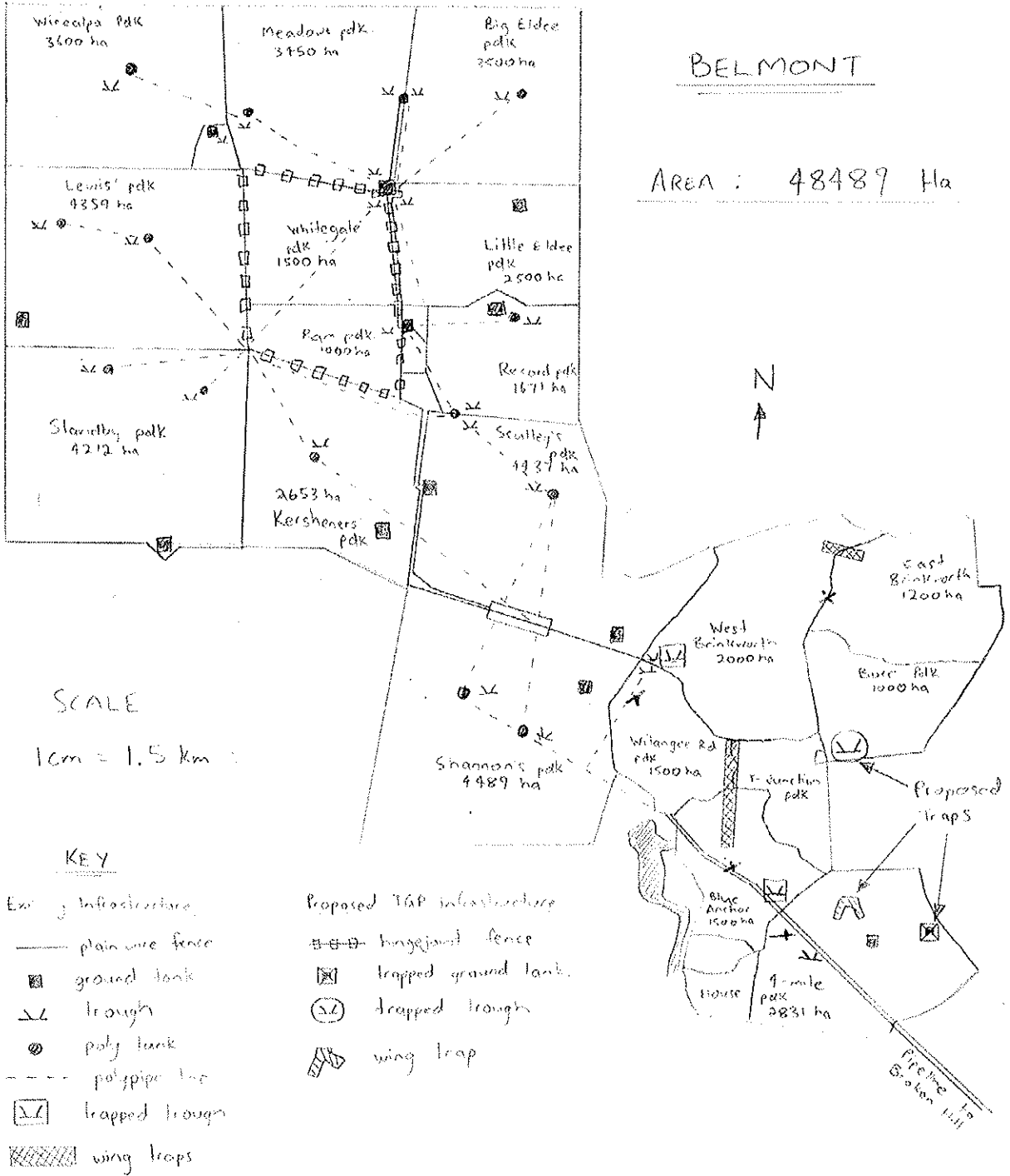
- plain wire fence
- ×××× hingejoint fence
- /—/— electric fence
- ground tank
- ⊠ trapped ground tank
- ∩ trough
- poly tank
- - - polypipe line
- X pump/bore
- other

Proposed TGP Infrastructure

- + + + plain wire fence
- ⊞⊞⊞ hingejoint fence
- /—/— electric fence
- ground tank
- ⊠ trapped ground tank
- ∩ trough
- poly tank
- ⊞⊞⊞ polypipe line
- ⊗ pump/bore
- other

BELMONT

AREA : 48489 Ha



Q10b Project/Site Map
Please use the Legend supplied

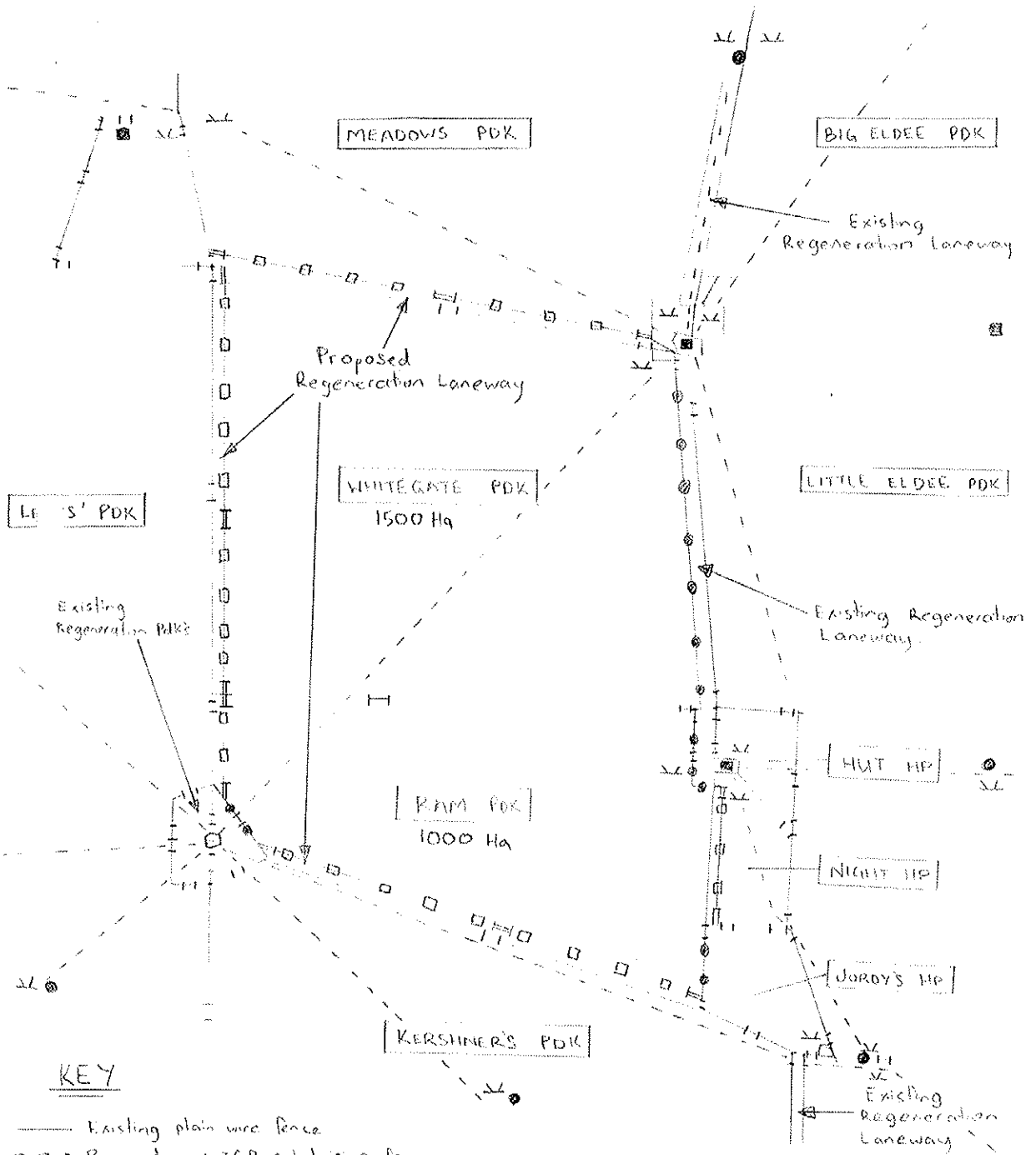
Name of property: Belmont

Area of property: 48489

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PLEASE SEE ATTACHED MAP

Existing Infrastructure	Proposed TGP Infrastructure
— plain wire fence	+ + + plain wire fence
-x-x-x hingejoint fence	⊞ ⊞ ⊞ hingejoint fence
/// electric fence	△ △ △ electric fence
■ ground tank	■ ground tank
⊞ trapped ground tank	⊞ trapped ground tank
∩ trough	∩ trough
● poly tank	● poly tank
- - - polypipe line	⊕ ⊕ ⊕ polypipe line
X pump/boro	⊗ pump/boro
other	other



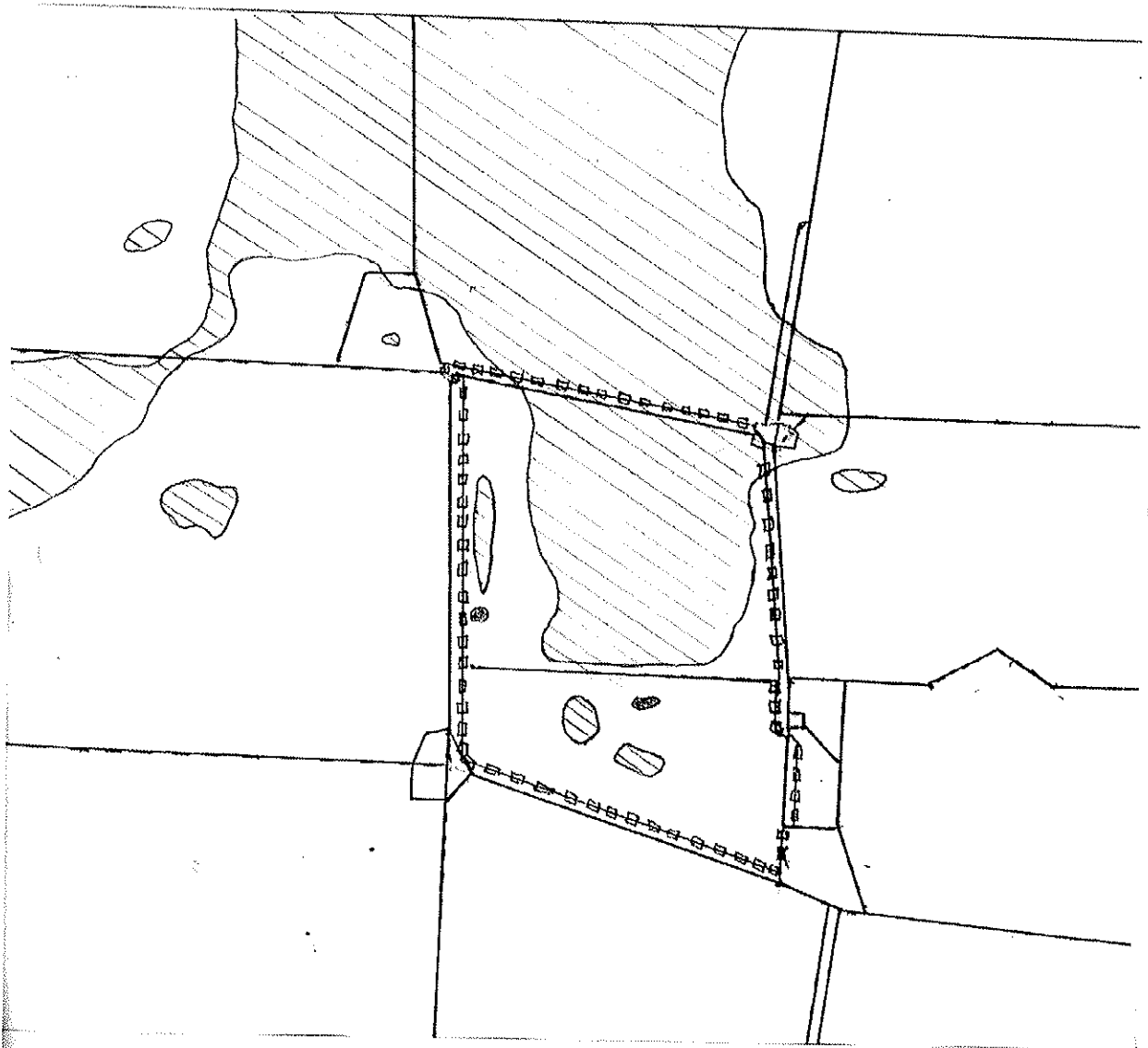
KEY

- Existing plain wire fence
- Proposed new T&P subdivision fence
- ◆-◆-◆ Proposed Hingejoint attached to existing plainwire fence
- ≡ Gate in new T&P fence
- ⊥ Existing Gate
- Existing Dam
- △ Existing Trough
- Existing Poly Tank
- - - Existing polyper fence

SCALE

1 : 46000
 1 km = 2.2 cm





INTERFACE OF VEGETATION TYPES ON
BELMONT PLAINS

KEY

- Existing Plain wire fence
- - - Proposed T&P fence
- Salt bush and Blue bush grass lands (red clay and alluvial flood plains)

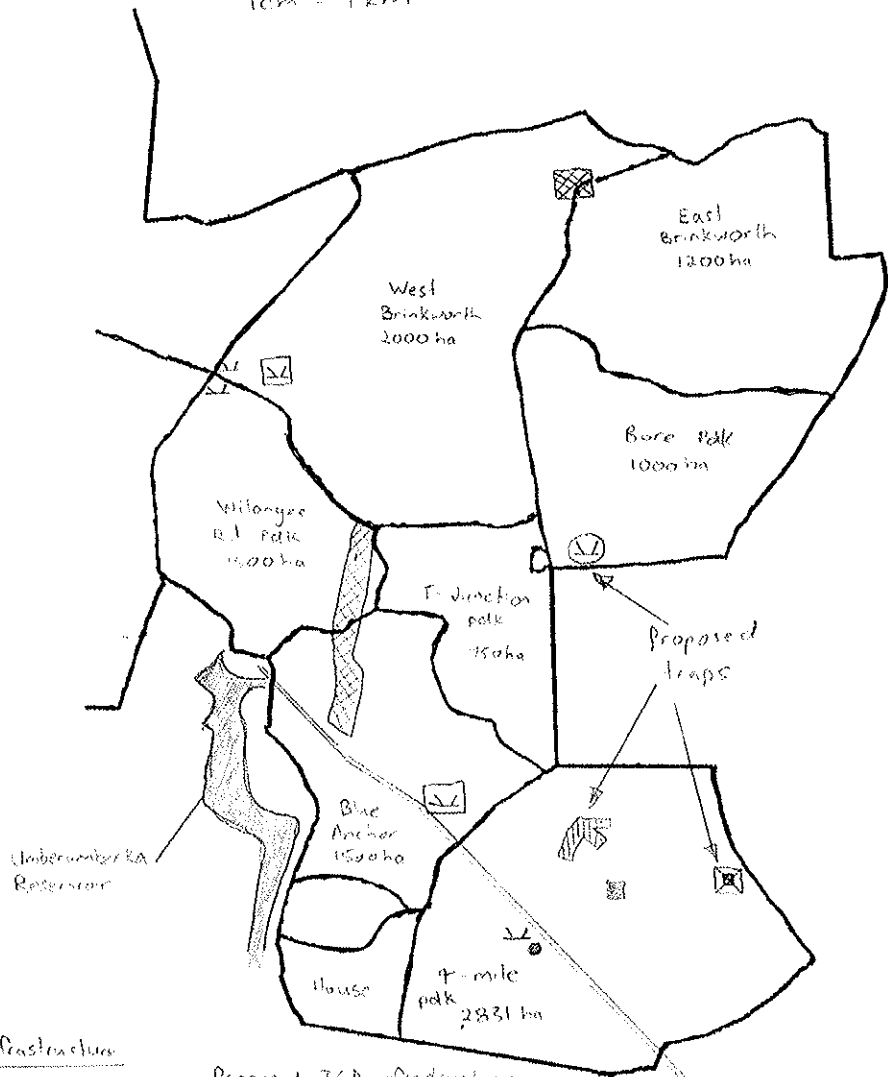
- ▨ Timberland & Pulga grasslands, Black oak stands, Bullock bush communities (Red sandy duplex soils)
- Purple-wood Wattle colony. (Threatened Species)

BELMONT HILLS (MUNDI MUNDI RANGES)

AREA - 11 118 ha

SCALE

1cm = 1km



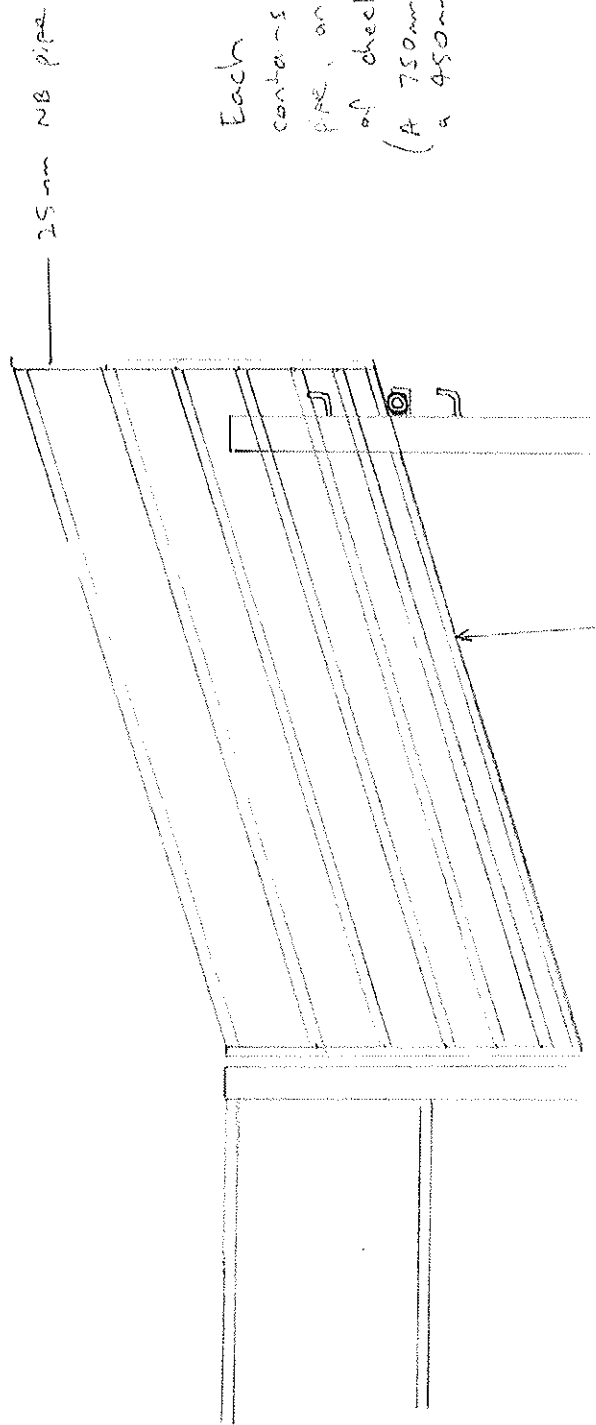
KEY

- Existing Infrastructure
- plain wire fence
 - ▣ ground tank
 - ∩ trough
 - ∩∩ trapped trough
 - poly tank
 - ▨ wing traps

- Proposed T&P infrastructure
- ▣ trapped ground tank
 - ∩∩ trapped trough
 - ▨ wing trap

Pipe line to
Bore Pdk

LOADING RAMP

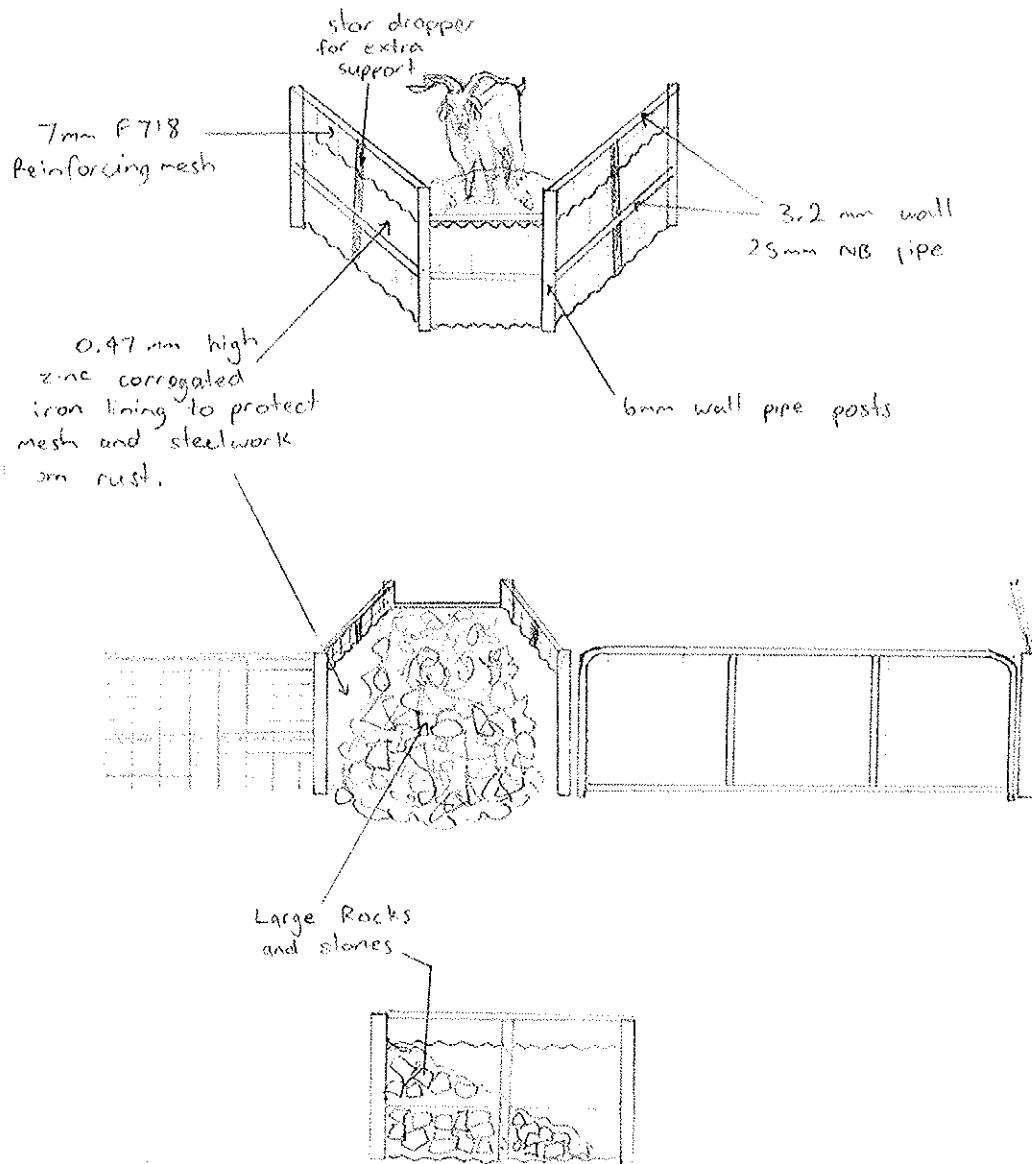


Each Ramp
contains 45 m of
pipe, and 24 x 1.2 m
of checker plate
(A 750mm wide ramp and
a 450mm wide walkway)

SCALE

1 cm = 20 cm

TRAP RAMPS



The ramps are designed to allow goats to easily find the trap entrance and also to prevent the goats from barking or being spooked. They are very familiar with walking up stone rises, rather than a steel or wooden ramp.

Description of Items	number	item	Costs	cost	ineligible	Applicant	wcma	total
				per		Input	Input	App #
Clearing and Preparation								
Clearing and grading	20	110				2200		2200
Materials								
2 7/8 inch NB - 6mm wall posts 10m lengths	8	65					520 350	520
Gates various sizes 3.6m	12	95					1140	1140
Hinge and latches	12	19.25					231	231
165cm Galvstar post	2900	5.12					14848	14848
Waratah Tyeasy plain wire	21	155					3255	3255
8/90/30 hinge joint	103	193					19879	19879
Bags of cement	20	4.50					190	190
1000 ring fasteners	18	10					180	180
1.57mm H/T barb wire	62	60					3720	3720
Goat trap double	1							
2 3/8 inch NB pipe 10m length - 17 end assembly rails	3	60					180	180
LABOUR								
contract 19.8 km new	600	25				15000		15000
Attach 6.7 hinge joint to existing.	200	25				5000		5000
1 cur								
Erect 2.3 km of wings @ 25.00ph								
Erect 3 yards								
Building 3 loading ramps								
Monitoring project for 10years								
						22200	44143	66343
Total cost divided by 3 (1:2 cost sharing)								22114
Is applicant contribution greater (Yes/No)								YES
(If no, cost sharing is too low)								

Q12 Management: In your own words, please provide specific details on what grazing management practices will be used in conjunction with the infrastructure and what on-ground improvements can be expected (In particular groundcover). 20%

Following is an example answer from previous rounds that was not adequate: "The trap yard will reduce Total Grazing Pressure, to avoid erosion and improve native grasses hence improving biodiversity and achieving sustainability".

Grazing Management Practices

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IMMEDIATE TO SHORT TERM MANAGEMENT:

Involves

- 1) An extreme reduction in the total number of goats grazing and watering by trapping them and removing them from property.
- 2) Keeping the goat trap area de-stocked of domestic stock by maintaining the existing plain wire fences.
- 3) Monitor domestic stock levels in TGP paddock to ensure adequate levels of ground cover and young timber growth.
- 4) Controlling kangaroo numbers by culling in accordance with the Department of Environment and Conservation.
- 5) Maintaining and monitoring CMA funded infrastructure.

MEDIUM TERM MANAGEMENT:

- 1) Assess the effectiveness of infrastructure strategy on maintaining low goat population and the effect this has had on groundcover, strategy may need to be adjusted, for example; increase number of watering points and traps to combat goats grazing on Belmont and watering on neighbouring properties, or work with neighbours to tackle evasive mobs.
- 2) Adjust strategy where necessary to achieve an increased ground cover outcome. i.e. A trap may need to be used to completely close down a watering point for a period of time.
- 3) Maintain infrastructure.
- 4) Assess levels of timber growth, especially Purple-wood Wattle. If rabbits are effecting growth of suckers, rabbit proof enclosure may need to be constructed around wattle colonies.

LONG TERM MANAGEMENT:

- 1) Use a rotational system of grazing while still controlling migrating feral goats as well as rabbits through ripping and kangaroos through professional harvesting.
- 2) Hills paddocks can be used to spell plains paddocks and therefore help regenerate areas outside the specific project area.
- 3) Maintain, monitor and report on infrastructure.

EXPECTED ON GROUND IMPROVEMENTS

- 1) Regeneration of young mulga, bullock bush, black oak and purple-wood wattle populations.

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- ☞ Mulga holds the soil together on the steep hills, as well as catching top soil floating in the air. It also breaks the wind and steadies the speed of hard rain on the area it shelters.
- ☞ Bullock bush helps hold creek banks and the softer, flatter country together as well as sheltering other ground covers.
- ☞ Black oaks form boundaries around shallow flooded areas in the sandy country holding the ground together preventing erosion from water.

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- 2)
- ☞ When in a de-stocked phase, using a rotational grazing system is expected to give annual plants a better chance at running through a full life cycle and then producing seed as well as developing a hardier root structure to combat erosion. It also will give perennial seedlings a chance to become established and mature.
 - ☞ When in a stocked phase the RGS will help spread seed of palatable feed and manure will return nutrients to the soil.

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- 3)
- ☞ Increase in groundcover will improve the state of erosion along water courses by holding the ground together. It will also act as a filter for water runoff, therefore will improve water quality.
 - ☞ It is important to note that the DECC do not list sheep as a treat to Purple-wood Wattle as. Therefore with a reduction in goat and kangaroo numbers in the TGP paddock area I expect to see an increase in regeneration of Purple-wood Wattle colonies.

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SUMMARY

Increase in:

- ☞ seed base
- ☞ top soil accumulation and retention
- ☞ mulga colony climate systems (areas of less sunlight, lower temperature, higher moisture, higher top soil accumulation and higher nutrients)
- ☞ saltbush and bluebush germination and maturity
- ☞ copper burr coverage
- ☞ water quality
- ☞ Purple-wood Wattle regeneration

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Q13 Public Benefit: What public benefit will be achieved through undertaking this project?
(Please refer to page 8 of the guidelines) _____/9

PUBLIC BENEFIT

Protection of timber = protection of top soil:

In the last five years of drought large areas of mulga, bullock and black oak trees have died due to moisture stress. Apart from consuming large amounts of carbon dioxide, the native trees provide an environment for other plant life, bird life and insects to survive in. The regeneration of native shrubs, grasses and trees is essential to maintaining the general health of the environment and all forms of life that depend on that environment including people. They also prevent soil erosion and so help maintain the country in its original form.

It is in everyone's interest that farming and grazing practices do not infringe on the long term sustainability of environmental health. It is a priority that the existing degradation of

groundcover and subsequent soil erosion be addressed now. As lease holders and care takers of this land it is our responsibility to try and prevent any change to the natural state of the land. Furthermore it is our goal, through the implementation and management of this infrastructure, to improve the land from its current state for further generations to come. Alleviation of heavy grazing pressure in conjunction with de-stocking of domestic stock, or rotational grazing, is in the public's best interest.

With only 1000 individuals known to be in conservation it is in the public interest that threatened species like the Purple-wood Wattle be protected and monitored to ensure their long-term survival.

WATER QUALITY

The Four Mile paddock is in the catchment of Umberumberka Reservoir which supplies household water for Broken Hill. Ground cover acts to hold soil structures together but also acts as a filter for water running off of the country. Over grazing by feral goats can increase silt flow into the reservoir and reduce water purity. This project aims to keep the top soil on the hills rather than washing down the creeks.

The infrastructure to be erected with funding assistance is to be made up of high quality materials with a long life-span.

For example;

- 7mm reinforcing mesh yards instead of 4-5mm sheep yard mesh
- 6mm wall strainer posts
- galstar posts
- high galv hinge joint

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I have chosen to do this because project longevity equals project cost effectiveness. Up to 50% of the total cost of the project is made up of labour and ground works. The cost of which does not change whether using materials with the ability to last 10 years or 60 years. The longer this management program and the infrastructure it uses is effective, the greater the benefit to the public through increases in eco-system health and water quality.

The total area of Belmont Station is 48,490 hectares (121,225 acres). The project area that will directly benefit from this program is 6331 hectares (15637 acres) however the rest of the Station's groundcover will indirectly benefit for future generations through the opportunity to spell paddocks in a rotational grazing system.

The knowledge and experience gained in the management and protection of the project can be used by the public to compare and refine best management practices of semi-arid range lands. I understand that my input into the WCMA's public communication may help to educate and inform the public through media releases and newsletter articles.

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Q13 Public Benefit: What public benefit will be achieved through undertaking this project?
(Please refer to page 8 of the guidelines)

10%

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Q14. Project Risk Management Table (Please refer to page 10 in the guidelines):

Attach additional paper if more than five risks are identified. Please be realistic in your assessment, high risk projects will not be penalised.

10%

Risk Identified	Likelihood	Consequence	Risk Rating	Actions required to manage risk
1. Damage to wings and yards on traps, holes made under and through by goats and kangaroos trying to water.	Almost certain	Moderate	High	<input type="checkbox"/> Holes in the wings and yards can be repaired through regular maintenance and monitoring of the infrastructure. <input type="checkbox"/> Maintain culling of kangaroos in accordance with DEC.
2. Extended wet periods allowing the goats to avoid watering at the trap sites.	Possible	Moderate	Medium	<input type="checkbox"/> Use the wings associated with the traps to muster goats onto, rather than waiting for the goats to come into water.
3. Force yards and gates damaged when hit by goats under pressure.	Almost certain	Minor	Medium	<input type="checkbox"/> Regular repair and maintain yards and gates to prolong the lifespan of the infrastructure. <input type="checkbox"/> Use higher quality materials than CMA standards to reduce the probability and extent of damage.
4. Goats may graze on Belmont, but travel to a neighbouring property to water.	Likely	Major	High	<input type="checkbox"/> Muster the goats onto the wings associated with the traps to rather than waiting for them to water. <input type="checkbox"/> Consult with neighbours about working together to tackle elusive and cunning mobs of goats.

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- Deleted: Almost certain
- Deleted: Major
- Deleted: High
- Deleted: 4. Increased grazing pressure due to new watering point.4.
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- Deleted: Control grazing pressure using trap ↑
- De-stock area of domestic stock ↓
- Control kangaroos through culling in accordance with DEC
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Q15. Proposed timeline for the project

10%

Projects must be completed within twelve months

Activity	Completion Date
white Rock Trap	30/7/08
BORE PDK TRAP	30/8/08
4-MILE YARD TRAP	30/9/08
TGP PDK around White Gate and Ram pdk's	30/12/08

Q16 Are you willing to allow the Western CMA to use your project for media-promotion, case studies, further research, field days etc. if asked?

(please note - specific permission from you will be sought before any action is taken)

- Yes
- No
- Will think about it

How did you find out about the 'Incentives' program?

- WCMA mailout
- WCMA website
- newspaper
- TV
- radio
- word of mouth

Q17 APPLICATION DECLARATION

I John Blone of Belmont Station declare:
(PRINT NAME) (PROPERTY/LANDCARE GROUP/ORGANISATION)

That the information provided in this application is complete and correct. I have read and understood the guidelines concerning this application.

Is this declaration being signed on behalf of a group? YES NO

Signed: JRBlone Date: 30/4/08

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Deleted: Q16 APPLICATION DECLARATION

of

declare:

(PRINT NAME) (PROPERTY/LANDCARE GROUP/ORGANISATION)

That the information provided in this application is complete and correct. I have read and understood the guidelines concerning this application.

Is this declaration being signed on behalf of a group? YES NO

Signed:

Date: _ / _ /

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APPO ENGINEERING

QUOTE

~~Tax Invoice~~ 30/04/2008

Tax Invoice #

97

ABN NUMBER

78 787 519 565/001

PHONE #

0427877017

Kalu Appo

P.O. BOX 618

BROKEN HILL

NSW 2880

Tax Invoice To

BLORE PASTORAL CO.

JOHN BLORE

BELMONT STATION

VIA BROKEN HILL

NSW 2880



Scrubby's Yard Innamincka 2005

		PROJECT			
Qty	Description	Rate	Tax %	TAX AMT	Amount
20	PIPE SALES- Lengths of 2 7/8" x 6mm x 10M threaded pipe	65.00	10.00%	130.00	1,300.00
12	PIPE SALES- Lengths of 2 3/8" x 5mm x 10M threaded pipe	60.00	10.00%	72.00	720.00
Tax Summary					
202.00 GST ;					
QUOTATION ONLY					
		SUBTOTAL		\$2,020.00	
		Tax Total		\$202.00	
		Total		\$2,222.00	

LANDMARK

an AWB company

Phone 08 80872371

BROKEN HILL

Fax 08 80881254

MERCHANDISE QUOTATION NO 304

DATE 30/4/08

NAME: BLORE PAST.
ADDRESS: BELMONT STN via BROKEN HILL

We have pleasure in - Submitting the following quotation
Confirming your order for

QUANTITY	SPECIFICATIONS	UNIT PRICE (GST EXCL)	TOTAL GST EXCLUSIVE	GST	TOTAL GST INCLUSIVE
115 ROLL	8/90/30 H/G H/JOINT	\$193.75	\$22281.25	\$2228	\$24509.4
3300	GALSTAR POST 165cm	\$5.12	\$16896.00	\$1689	\$18585.6
3300	BLACK " "	\$3.90	\$12870.00	\$1287	\$14157.0
72 ROLL	BARB WIRE 1.57mm	\$60.00	\$4320.00	\$432	\$4752.00
24 ROLL	2.5mm FLEX.WIRE M/T	\$121.60	\$2918.40	\$291	\$3210.24
2	TIE WIRE 2.5mm X 1500mtr	\$136.50	\$273.00	\$27	\$300.30
18	F/GATE 3.6m BRACED	\$95.00	\$1710.00	\$171	\$1881.0
4	« 3.0m «	\$81.00	\$324.00	\$32.4	\$356.40
3	« 2.5m «	\$60.00	\$180.00	\$18	\$198.00
3	« 1.8m «	\$65.00	\$195.00	\$19.5	\$214.50
28	SADDLES 25mm	\$2.00	\$56.00	\$5.6	\$61.60
28	GUDGEONS 25mm	\$7.25	\$203.00	\$20.3	\$223.30
28	CHAIN LATCHES	\$10.00	\$280.00	\$28	\$308.00
70	NEW 6.5m MED BLACK PIPE	\$44.00	\$3080.00	\$308	\$3388.0
19	SHEETS F718 R/MESH 2.4x6.0	\$245.00	\$4655.00	\$465	\$5120.5
TOTAL					

PRICING BASIS - EX CAPITAL CITY
EX BRANCH
DELIVERED

TERMS OF PAYMENT

DELIVERY INSTRUCTIONS:
ATTACHMENTS:

CONDITIONS OF SALE/QUOTATION

- Prices quoted are subject to acceptance within 7 days and availability of product quoted
- Price variation subject to manufacturers price ruling at date of delivery
- Return of specially ordered goods will not be accepted
- Advertising material, photographs or illustrations provided represent generally, the goods offered but are not binding in detail
- Delivery time quoted is not guaranteed and is subject to extension to cover delay caused by strike, lockouts, fire, transport failure or any event beyond our control

ORDERED AND SIGNED BY

PETER HEATH - MERCHANDISE MANAGER



Elders Limited

Merchandise Supply/Quote

Clients Name John Blore

No. **140297**

Address Belmont Str.

Branch Broken Hill

Postcode

Date 30.4.08

Phone No. 0428 885 310 Fax

Number	Description	P/Unit (\$)	GST	Total
115	8/90/30 SG Hinge Joint.			\$29325
3300	Galstar Posts 165cm			\$19074
72	Rolls 1.8mm HT Barb			\$6480
24	Tyceasy 2.5mm x 1500m			\$4018.80
2	Rolls Tie Wire - Long Life 1500m			\$310
84	6m lengths 25mm O/Grade Pipe			\$1764
1	Gate Trap			\$370
18	12ft Farm Gates			\$1764
5	10ft Farm Gates			\$450
3	8ft Farm Gates			\$255
3	6ft Farm Gates.			\$225
20	Barbed Staples 50 x 4.0mm 5kg			\$760
All prices include GST.				

This is a quotation, not a contract and is for materials listed. All materials to be charged for on the quantity actually supplied at prices ruling at time of delivery. This list has been prepared as a service, but no responsibility can be accepted for any omissions-unders or overs. These will be charged for as extra or deducted as the case may be.

\$64795.80

Prices quoted included Freight E x Broken Hill. Branch Stocks.

Prices quoted are current but will be those prices ruling at date of delivery, note that GST will be added as applicable at the time of invoicing.

\$ Total inc GST

ORDER

Clients Signature

For Elders Limited BK Melh

**Pre-Inspection Report (must be completed by a Western CMA officer prior to submission)
For Projects Over \$30,000 Western CMA Contribution**

1. GPS points: Have relevant GPS points been taken? **Yes**

2. Existing Infrastructure: What is the current condition of the infrastructure?

Poor condition 1 2 3 4 5 6 7 **8** 9 10 good condition

Notes: The majority of fencing in Ram and White Gate Paddocks is stock proof and in good condition. There is about 1.2km of fencing that will need to be replaced to raise it to minimum standards.

3. Is the budget appropriate/relevant to the infrastructure proposed?

Less relevant 1 2 3 4 5 6 7 8 9 **10** appropriate

Is the cost sharing ratio correct for the project type? **Yes**

Notes:

4. Is the proposed project a logical and strategic project for the property? Eg. Part of a management plan for the property.

Part of management plan **Yes**

Less strategic 1 2 3 4 5 6 7 8 9 **10** more strategic

Notes: Goat traps – once installed, these trap yards and wings will enable complete management of the ranges on Belmont to control goat populations. At the moment, the range is not able to be effectively managed with goats having the ability to hide when approached. The proposed design and location will self-trap goats, eradicating the need to muster. At the time of inspection, goats in large numbers were seen at the different locations and they quickly ran to the safety of the hills preventing capture.

The TGP fencing around Ram and White Gate paddocks, with the addition of laneways, will enable a greater ability to manage grazing pressures in these paddocks. Not only will this protect and improve ground cover but the laneways will provide seed bank areas. This method has been utilised in other paddocks on the property and the benefit is clearly evident. Kangaroos were abundant in these areas, grazing on green shoots of depressions, the TGP fence will help keep these numbers at a minimum.

3. Is the project part of a larger strategy, local or regional?

Yes Details: It is part of a larger property plan designed to have better control of grazing pressure and increasing ground cover through managing two separate land types, the hills and the flood out.

4. Is the scale of the project appropriate to:

• The NRM outcomes expected **Yes**

• Size of the property **Yes**

• To catchment targets **Yes**

Notes: The main focus behind these projects is to be able to control grazing pressure in such a way there is protection of existing vegetation and timber stands, opportunity for re-growth and vegetation with seed banks and to be able to more effectively control domestic and feral animals and prevent future deterioration of the vegetation.

5. Is the expected environmental benefit short or long term?											
Short	1	2	3	4	5	6	7	8	9	10	Long
Notes: There is an expectation and opportunity for immediate recovery of ground cover and vegetation after the next average rain event once these projects are in place. The benefits will then compound over time. Of note is the proposed fencing around the stands of Purple-Wood Wattle (<i>Acacia carneorum</i>) that are currently decreasing in size due to unrestricted grazing pressure and the drought.											

6. Which NRM catchment targets will be addressed by this project?										
<input checked="" type="checkbox"/> sustainable agriculture <input checked="" type="checkbox"/> rehabilitation of native pasture <input checked="" type="checkbox"/> pests <input checked="" type="checkbox"/> water quality <input checked="" type="checkbox"/> water habitat <input type="checkbox"/> HCV area <input type="checkbox"/> landholder knowledge <input type="checkbox"/> monitoring and evaluation										
Notes: The ranges are part of the catchment of the Umberumberka Reservoir. Therefore projects that will assist with increasing ground cover will increase water quality and hence habitat.										
The TGP fencing project is also on a flood out area, once again, increasing ground cover will increase water filtration and therefore quality and habitat. Intended protection of Purple-Wood Wattle will lead to an increase in the size, health and density of existing stands.										
Both trap yard and TGP fencing projects will assist with rehabilitation of native pasture and management of pests (goats and kangaroos).										
More effective control of pests will decrease grazing pressure, increasing ground cover and give domestic stock more food, resulting in more productive animals without increasing stock numbers.										

7. What is the driving force behind the project, is it to achieve production or environmental outcomes.											
Production	1	2	3	4	5	6	7	8	9	10	environmental
Notes: The landholder is concerned about the long term effect of the current drought and is taking the opportunity of low stock numbers (and associated lower stock management activities) to consider implementation of projects that will have a short and long term benefit to both the environment and his future production. It is very clear the landholder is passionate about the health of his land and finding a way to manage future droughts. The inability to have a lot of control over pest animals is a contributing factor to the current low ground cover status.											

8. Risk: Are there any underlying issues/problems that may affect the success of this project?										
Notes: Past projects have been completed promptly, to a high standard and within a shorter time frame than potentially available with this round of funding. There does not appear to be any issue or problem that will have a detrimental effect to these projects.										

GPS Points:

4 Mile and Bore Paddock trap yards:

- 089: trap yard with two wings - S: 31° 50' 28.1" E: 141° 16' 34.6"
090: trap yard and wings at White Mine Dam - S: 31° 50' 23.8" E: 141° 16' 34.6"
091: Yard at trough in Bore Paddock - S: 31° 47' 40.9" E: 141° 16' 04.3"

TGP Fencing – Ram and White gate Paddocks:

- 092: S: 31° 41' 55.9" E: 141° 07' 33.6": Start laneway at Ram Pdk/Keurchners going North
093: S: 31° 41' 38.3" E: 141° 07' 39.1": dog leg and potential 1.2km new fence
094: S: 31° 40' 53.6" E: 141° 07' 34.2": end new fence and start TGP upgrade
095: S: 31° 38' 35.6" E: 141° 07' 23.0": Cnr White Gate, going West
096: S: 31° 38' 20.3" E: 141° 04' 42.8": Cnr and going South
097: S: 31° 40' 51.7" E: 141° 04' 43.7": Cnr Ram Pdk
098: S: 31° 41' 15.0" E: 141° 05' 08.8": to 092

Pre-Inspection Report completed by:

Katrina Gepp
Western CMA officer

Katrina Gepp
Signature

21/04/2008
Date

rec'd 25/10/13
 KG.
 W34285

Total Grazing Pressure Program Application - Due 25th October 2013

Make sure you have read and understood the guidelines before starting this application.

Q1 Contact / Business Details

Contact Name <small>Please include first and last name – not initials</small>	John Blore
Location of project (property)	Belmont Station via Broken Hill 2880
Mailing Address	61 Creedon St Broken Hill, nsw 2880
Lot, DP number	WLL No. 4668 and 709
Telephone	(08)80884790
Fax	
Mobile	0428 885310
Email	<u>Jablore19@bigpond.com</u>
ABN	17495619726
Trading Name	Blore Pastoral Co.
GST Registered	Yes
Western CMA Office	Broken Hill
Western CMA case officer	Katrina Gepp
Additional Properties linked to application <small>(where applicable)</small>	

What will we call this project? (less than ten words)

Mount Mundi Mundi Conservation Project

What will the CMA be funding?

Area of project	1400 ha
Km length of TGP fencing	17
Number of trapyards installed	

Who else is involved? *For projects involving boundary fences please list the neighbour's letters that are attached.* (see page 7 of the guidelines)

Q1. Tell us your story

Provide some background on the works you have undertaken to improve the natural resource condition of your property (whether funded by the CMA or not), including training courses you have attended etc.

- Trapping of all trough and dam watering points
- Large wings off of Umberumberka Reservoir, Brinkworth Springs and 4-Mile soak
- TGP fencing of interface between clay soil bush country and sandy soil mulga and black oak country. (White Gate Pdk and Ram Pdk)
- HCV fencing of Keurschner's Pdk, containing seed bearing Acacia Carneorum (Purple Wooded Wattle)
- Rehabilitation of clay-pan country with deep ripping and planting of 30 000 saltbush seedlings.
- Contour furrowing of claypans and seeding with saltbush

This project will have a great effect on the landscape in three main ways;

-Firstly it will protect the enclosed area from overgrazing by unmanaged feral goats. The area contains a rare community of Red Mallee and Porcupine grass proposed to be listed as a Critically Endangered Ecological Community in Part 2 of Schedule 1A of the NSW Threatened Species Conservation Act 1995. The area has also been identified as containing Tawny Crevice Dragon populations, which are listed as being endangered. In a study of the Belmont Hills and neighbouring properties in 2008, NGH Environmental stated; "the Mutawinji population were considered the only known population. However, the population of the study area should now be regarded as the stronghold for the species in NSW considering the moderately restricted national distribution (Sadler and Pressey, 1994)." NGH Environmental also list feral goat overgrazing as the main threat to Tawny Crevice Dragon habitat as the goat scats fill the rock crevices they inhabit.

-Secondly, the area is the biggest, roughest mountains on Belmont and I believe the Barrier Ranges. The TGP fence will prevent feral goats from seeking refuge in this extreme landscape when mustered.

- Thirdly, the hingejoint fence will act as a wing itself to herd untrappable goats onto, and link up with, the 4km wing off of Umberumberka Reservoir to make mustering of the extremely rugged landscape more successful.

Q2. What are you planning to do?

In point form please detail the works that will be carried out as a result of this project.

Example:

- *Fence section 1 = 16km of internal existing fencing along the western and southern sides of Happy Valley paddock (see map) will require dismantling.*
- *Clear to a total width of 30m using our stick rake.*
- *The fence will be replaced by black waratah star pickets at 8m spacing with 1 bottom high tensile barb at 60mm from ground level, Waratah 7/90/30 Stocktite and another Waratah barb on top.*
- *The end assemblies for this section will be upgraded to railway linewith drill rod stays.*
- *Install trapyard on 'short water'*
- *Install trapyard on 'kiwi tank'*

- Clear 17km of fence line along foothills on western side of Mount Mundi Mundi, then follow the southern and western edge of Mundi Mundi Creek and finally follow ridges westwards past the T-Junction yard and out to the foothills to encompass Mount Mundi Mundi and Lord's gorge.
- Erect 17km of new 8-90-30 hingejoint fence. 8-90-30 is 10-15% more expensive than 7-90-30 but is a superior product. The bottom wires are closer together preventing kangaroos and goats from getting their heads through the squares, which is a major cause of fence failure.
- Because of the extra wire in the 8-line it is not necessary to have a belly plain saving about \$120 a km.
- Barb running with bottom of hingejoint 60mm from ground.
- Plain 2.5mm HT running with top of Hingejoint
- Plain 2.5mm HT running 200mm above top of hingejoint instead of a top barb. (note: this reduces the cost as well as reducing the number of native animals that get hung up in the fence. If an animal tries to jump the fence and their leg goes between the hingejoint and a top barb the barb gets caught on the hingejoint and they get hung there until they die, often damaging the fence.)
- Follow ridge tops where possible to give the fence maximum longevity and ease of maintenance. This may require more deviations to the fence and thus use more strainer assemblies, (one every 100m in some places) but will give the best result.
- Star pickets will vary in distance apart from 4m to 10m depending on how severe the undulation, but I estimate they will average about 8m apart.
- Most star pickets going through gullies will need to be pegged down with another angled picket to stop them popping out of the ground. I estimate 30% of pickets will need to be pegged down. I can do this with second hand pickets they do not need to be new.
- Floodgates, which are numerous but unavoidable, will be constructed using 10mm wire rope cable with 1.8m chain wire hung from it. The chain wire is practically indestructible compared to sheeppark mesh, (the spot welds in the mesh break under force and let it fall to pieces) and the smaller holes compared to mesh help the floodgate to lift during rainfall. Lengths of timber are attached to the chainwire vertically extending from the wire rope to the bottom of the chainwire about every 3m. These prevent animals pushing underneath but lift during rainfall.

Q3. What will you use?

- a). Please tell us which fence standard(s) you will be using (please refer to page 8 of the guidelines) :
- b). Please provide a full inventory of materials to be included in this proposal (e.g. 15 200m rolls Waratah Stocktite 7/90/30;)

Quantity	Description	Brand	Size	Grade
Fence materials				
85 rolls	8-90-30 hingejoint	Southern wire	200m roll	2.5mm wires
2200	Black star posts	Cyclone	165cm	Heavy weight, tarred
34 rolls	Barbed wire	Waratah	500m	1.57mm
23 rolls	HT plain wire	Waratah	1500m	2.5mm
2 rolls	Ty wire	Waratah	1500m	2.5mm
End assembly materials				
90	Posts	100mm pipe	2.4m long	5mm wall
36	Stubbs	100mm pipe	600mm long	5mm wall
63	Horizontal/diagonal struts	50mm pipe	2.4m long	4mm wall
27	diagonal stay	25mm flat bar	2.7m long	3mm thick

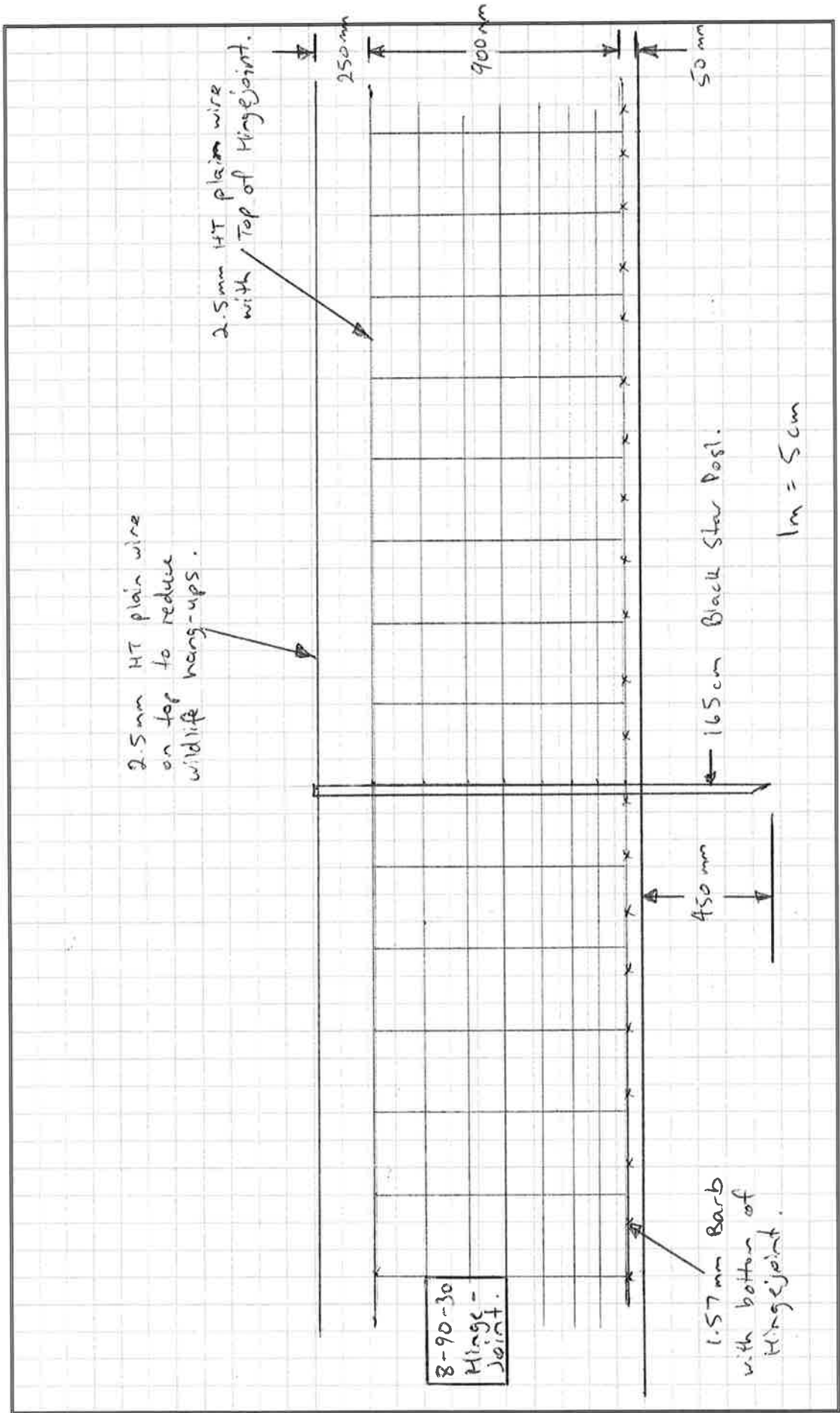
Quantity	Description	Brand	Size	Grade
Floodway Materials				
297m	Chainwire	N/A	1.8m high, 50mm squares	3mm wires
350m	Wire rope cable	N/A	10mm	
Trap yard materials				
Clearing				
Km	Clearing Rate	Clearing method	Justification (if required)	
17km	\$700 per/km	Dozer	Very rocky, large boulders, steep inclines, sharp gutters, areas of heavy timber, currently inaccessible by vehicle, difficult to ride a motorbike through.(photos supplied)	

Q4. Trap Yard/Fence Panel Design

Q4a. Trap yard design (please refer to page 19 of the guidelines)

A large rectangular area filled with a fine grid of lines, intended for drawing a trap yard design. The grid is composed of small squares and covers most of the page's width and height.

Q4b. Fence panel design (include more than 1 design if required. Include the height from ground level and the total height of the fence)



Q5. Budget

The budget should be adequately itemised with correct funding ratio, quotes etc. Refer to page 18 of the guidelines.

Fencing	No. of Km Upgrade Fence	No. of Km New Fence	Price per Km Upgrade	Price per Km New internal	Total cost	
					Western	CMA
Option A (hingejoint with barb) / km			\$1,650.00	\$2,200.00		
Option B (hingejoint w/out barb) / km			\$1,550.00	\$2,100.00		
Option C (Weston) / km			\$1,650.00	\$2,200.00		
Option D (alternative / other design) / km		17	TBC	TBC	\$37,400.00	
Fencing Total:					\$37,400.00	
End assemblies						
		No. of Assemblies				
Option A (strainer assembly)		36	N/A	\$ 110.00	\$3,960.00	
Option B (full box assembly)		27	N/A	\$ 140.00	\$3,780.00	
Option C (double box assembly)			N/A	\$ 200.00		
End Assembly Total:					\$7,740.00	
Trapyards						
	No. of Trapyards					
Number of Trapyards(max. of 2)			\$2000/trapyard	Trapyard Total:		
Other costs						
Energiser(specify unit details)				Total cost divided by 2 (provide quote)		
Clearing rate 1	Amount	Km	\$100/km			
Clearing rate 2	Amount	Km	\$500/km			
Clearing rate 3	Amount	17 Km	\$700/km		\$11,900.00	
Floodway fencing / metre	Amount	297 M	\$40/M		\$11,880.00	
Grand Total:					\$68,920.00	

Q6. What could go wrong?

These are ONLY the risks associated with the actual construction of the infrastructure, not the ongoing management. Please be realistic in your assessment. High risk projects will not be penalised. Refer to page 18 in the guidelines.

<i>Risk identified</i>	<i>Actions required to manage risk</i>	<i>Office Use Only</i>		
		Likelihood	Consequence	Risk Rating
Unable to complete project in timeframe due to competing priorities	Start early, don't leave anything to the last minute. Break each month into 4 weeks, try and complete the tasks allocated for each month in the first week, so other station duties can be worked on freely. If that month's fencing can't be completed in the first week, try and do it in the second week and so on. In this way I reduce the risk of having one month's fencing run into the next month's timetable. If held up on a particular part of the project, continue on with another aspect of the project instead. Employ casual staff to complete stages in line with the timetable I have set. Employ a contractor if I am unable to complete the job myself.			
Machinery breakdowns or unavailable	Take things steady when using machinery in this rough country. Rushing things can often lead to a breakdown. All machinery is available on site, breakdowns will be fixed, and parts of the project that can be completed without the broken down machinery must be done while waiting for breakdowns to be fixed. I am prepared to hire machinery to complete the project if it is necessary. Various machinery can also be borrowed.			
Natural disasters – floods, fire	The goats have fairly well reduced the fire risk, but if flooding occurs access can be gained to the area following ridgetops along the hills to continue works. Extreme Heatwave Extreme heat over the summer is the most likely weather problem. I have completed projects in these hills in 40 degrees plus temperatures before, it requires starting work around 4am and finishing around 12pm, trying to keep your clothing wet and consuming about 6L of water a day.			

<p>Unable to find contractors or suppliers to complete project in timeframe</p>	<p>If suppliers are unable to supply the materials required to complete the project, alternative materials would have to be substituted if they would achieve a similar outcome. The project will be completed by my father, another station worker and myself. We will also employ 2 casual workers at different stages of the project.</p>			
<p>Personal problems eg - cash flow changes, illness, motivation, time management</p>	<p>I am prepared to pay a contractor to complete the project if I am somehow rendered incapable through illness or injury. I am prepared to put off all non-essential station work until the project is completed.</p>			
<p>Neighbours unable to contribute to project</p>	<p>N/A</p>			

Q7. How will you find the time?

Activity	Completion Date
Notification of Application success.	November 2013
Clear fenceline with dozer	December 2013
Drive posts for end assemblies and weld struts	January 2014
Run bottom barb as stringline and drive pickets	February 2014
Run plain wires and roll out and strain hingejoint then tie on	March 2014
Construct floodgates and swing gates	April 2014
	May 2014

How did you find out about the 'Total Grazing Pressure Incentive Program?

Western CMA mailout Western CMA website radio newspaper word of mouth field days

Q8. APPLICATION DECLARATION

I John Blore of Belmont station declare:
(PRINT NAME) (GROUP/ORGANISATION)

That the information provided in this application is complete and correct. I have read and understand the guidelines concerning this application.

Signed: 

Date: 25 / 10 / 2013

APPENDIX A: Property/Project Map

Property Plan/Map – To be developed with the assistance of your case officer. Please note that the location of infrastructure will be GPS located in your map and will therefore form part of your contract. It is important that you indicate the location of proposed works carefully as the information provided will be legally binding.

APPENDIX B: Grazing Management Plan

Q9 GRAZING MANAGEMENT PLAN

Part A: Project Aim

Please outline your aim for the project area (the area you stipulate that will be managed under the agreement for this project).

This should address:

- What you are hoping to achieve in terms of groundcover management?
- What you are hoping to achieve in terms of livestock management?
- Specific natural resource management issues that you are hoping to address through the project?
- How does this project relate to your property or link in with your neighbouring properties past, present and future management?
- How does this project fit into your broader property plan?
- How will the project change your management of the whole property?
- Why is this project a priority?

This project is not just about the area inside the TGP fence, but also largely about the greater area outside the TGP fence.

Inside the TGP fence if constructed will exist a critically endangered community of Red Mallee and Porcupine grass, and an identified habitat for the endangered Tawny Crevice Dragon, all in fairly inaccessible goat country. Goats are considered the greatest threat to all of these species. I expect to see these species maintain their current level of occurrence or increase this level if this project is completed.

But also, the construction of this TGP paddock will have a massive effect on the Brinkworth Well area and the 1.5km stretch of springs and soaks that exist in Dense Camp Creek (north of the TGP Paddock). Although the Dense Camp Creek area has wings and yards constructed for catching and removing goats (1600 removed in the last 3 months) numbers remain high. High rainfall in the last 3 years has meant that soaks and springs now occur outside the trapping zone. When mustered goats take refuge in the extreme terrain of the Mount Mundi Mundi area which I am proposing to fence. The Dense Camp Creek area is part of a timber reserve aimed at arresting damage done by early settlers. It has been the only permanent watering point in the area ever since Pastoralists took up the land.

My long term plan for the area is to fence off the entire Dense Camp Creek soaks, and extend watering points out from Brinkworth well with a solar mono pump. This would relieve the grazing pressure from the area for the first time ever. With trap yards on all the watering points the area could be completely controlled during summer.

However, during cooler months and when surface water is prevalent goats must be mustered. By constructing the TGP paddock around the Mount Mundi Mundi area goats can be mustered onto the outside of the paddock and be herded around the roughest hills to link up with the existing wings and yards in the Umberumberka Reservoir area. This year 1500 goats have been removed as a result of aerial musters and the construction of the TGP paddock would only increase the success of future musters. I would expect to see healthier juvenile trees and an increase in number and variety of ground covers with a reduction in goat numbers.

At the present time, through good seasons, the goat population in the Barrier Ranges is very high. Belmont can be completely cleaned out of goats with an aerial muster and a couple of months later there are similar numbers back there. It seems the only way to reduce the grazing pressure on the area containing the Red Mallee, Porcupine Grass and Tawny Crevice Dragon habitat is to construct a TGP paddock.

I do not wish to permanently exclude grazing from the area, as I do not see conservative grazing to be a threat to the area's biodiversity, but rather just gain some control over a fairly wild, but sensitive area.

Part B: SWOT Analysis

Please use the following section to identify the Strengths, Weaknesses, Opportunities and Threats relevant to your project area. This can be done in point form.

Strengths: *What makes this project a good idea?*

- Protects a critically endangered plant community and habitat for an endangered reptile
- Helps manage goats in the whole of the Belmont hills not just the enclosed area, by the fact it links with T-junction yard and wing, and Wilangee Rd Trap.
- Will help improve biodiversity over a large area

Weaknesses: *what will limit ability of the project to achieve the maximum groundcover and biodiversity outcomes possible?*

You will not be scored negatively for weaknesses identified, but you should address in the grazing management section how they will be appropriately managed to achieve your project aim.

- Lack of available staff to muster goats onto the fence and wing
- Large number of flood gates may be points of weakness after large rain events
- Heavy rainfall events cause erosion to the cleared fenceline undermining the fence.

Opportunities: *What additional opportunities will the project create?*

- Reduced grazing pressure may allow for an increase in perennial growth and propagation of trees such as Mulga and Bullock Bush
- Reduction in soil erosion with increased ground cover and reduced hoof disturbance
- Increase in successful musters from Umberumberka
- An opportunity to conservatively graze the area from the end of summer when prices are low, until the start of winter when prices are high.
- An ability to spell the area during the spring when many of the plant species are setting seed.

Threats: *What are the potential threats/risks associated with achieving groundcover & biodiversity outcomes of this project?*

Please consider the following, grazing pressure management, infrastructure maintenance and seasonal conditions. Each project area will have a range of different threats/risks.

What are the threats?

What can you do about them?

<p>Cannot achieve groundcover targets due to drought.</p>	<p>Destock the area by trapping all livestock and native animals on the watering point.</p>
<p>Cannot off-load stock easily due to low market prices.</p>	<p>Generally our goats are sold regardless of the price if there is not abundant feed available for them.</p>
<p>Increase in groundcover may cause an increase in fire risk, threatening the endangered flora and fauna.</p>	<p>Conservative grazing of the area in good seasons can reduce the fuel load and thus reduce the risk of bushfires flaring up from dry storms.</p>
<p>Native wildlife dig holes under the fence or push holes around floodgates which are not under tension, allowing mobs of goats to gain entry to the TGP paddock</p>	<p>Regularly maintain the fence, by repairing holes, and remove excess stock by trapping on the existing trapped watering point.</p>

Part C: Grazing Management

Please outline your current grazing practices, including (but not limited to):

- type of livestock
- stocking rates
- typical management practices, including drought strategy
- goat management/ control practices etc.

It is not possible to run domestic stock in the area due to the grazing pressure of feral goats. Currently goats are trapped on watering points around the area and removed, or mustered onto wings and yarded, sometimes with the aid of a gyrocopter. How often this occurs depends on goat prevalence in the area. Generally when I travel through the area and see numbers exceeding one hundred goats I will muster or set traps to remove them.

How do you intend to manage grazing within the project area after the completion of the project works? Responses should include (but not be limited to) information on:

- type of livestock
- stocking rates
- typical management practices, including drought strategy
- your goat management strategy (if relevant)
- how these changes will improve groundcover and pasture condition within the project area?

Note: this question refers to how you make grazing decisions, not CMA monitoring requirements.

When feed is abundant in the TGP paddock the area would be conservatively grazed with goats. The steepness of the inclines over most of the area would preclude the use of domestic stock for grazing.

The fact that the only watering point in the paddock is trapped would make management fairly simple. I would use a stocking rate similar to that of sheep in the area which is 13 acres to the DSE. A 30kg goat is roughly 0.7 DSE. Grazing would only occur from late summer to early winter if seasonal conditions were good. This would allow the area to be destocked for around 7 months of the year and allow the perennials in the area such as bluebush to flower and set seed in spring. I think allowing the groundcover the ability to set seed without grazing pressure will improve the total groundcover of the area.

How will you monitor grazing pressure within the project area? Please include how you will ensure that your management plan is working. Your response should include (but not limited to) information on:

- What methods or techniques you will use to monitor?
- What will you be looking for?
- How often monitoring will be undertaken?
- What will you do with the monitoring?

A photo point will be erected, rainfall will be recorded. Inspection of the perennial shrubs and condition of the Porcupine grass communities will be undertaken before livestock are introduced to the area toward the end of each summer. The stocking rate will be determined according to the available fodder. If conditions are poor, no livestock need to be introduced. Likewise at the end of the grazing period in June, the perennial ground covers will be inspected to identify what effect if any the grazing has had. These observations will be recorded in my journal.

Yearly photo points and step points as required by contract.

Q10. GRAZING MANAGEMENT PLAN DECLARATION

I _____ John Blore _____ of _____ Belmont Staion _____ declare:
(PRINT NAME) (GROUP/ORGANISATION)

That the information provided in this application is complete and correct. I have read and understand the guidelines concerning this application.

Signed: _____  _____

Date: _25/_10/_2013_

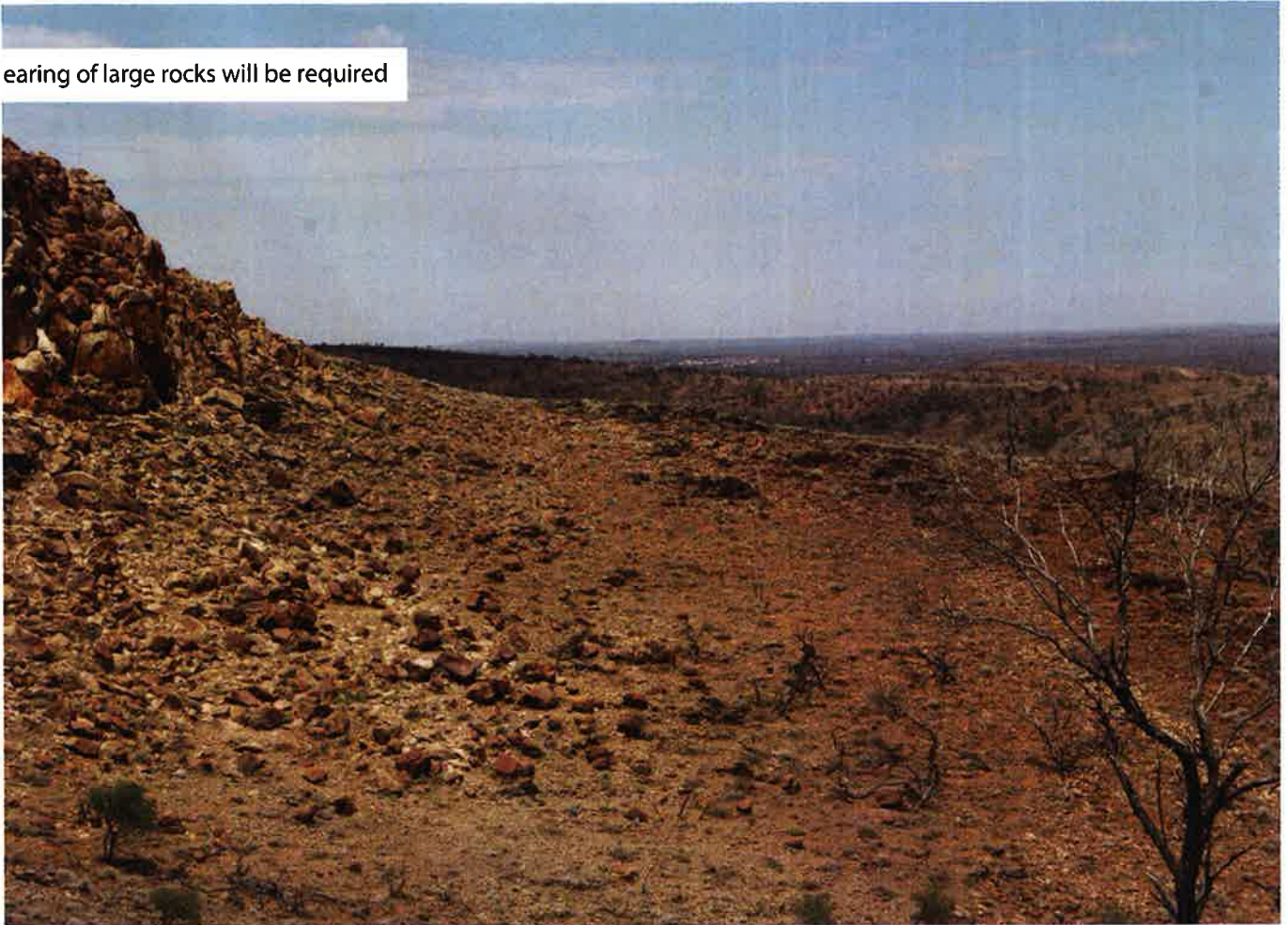
Mt Mundi Mundi



Example of the ridgelines the fence will follow



Clearing of large rocks will be required

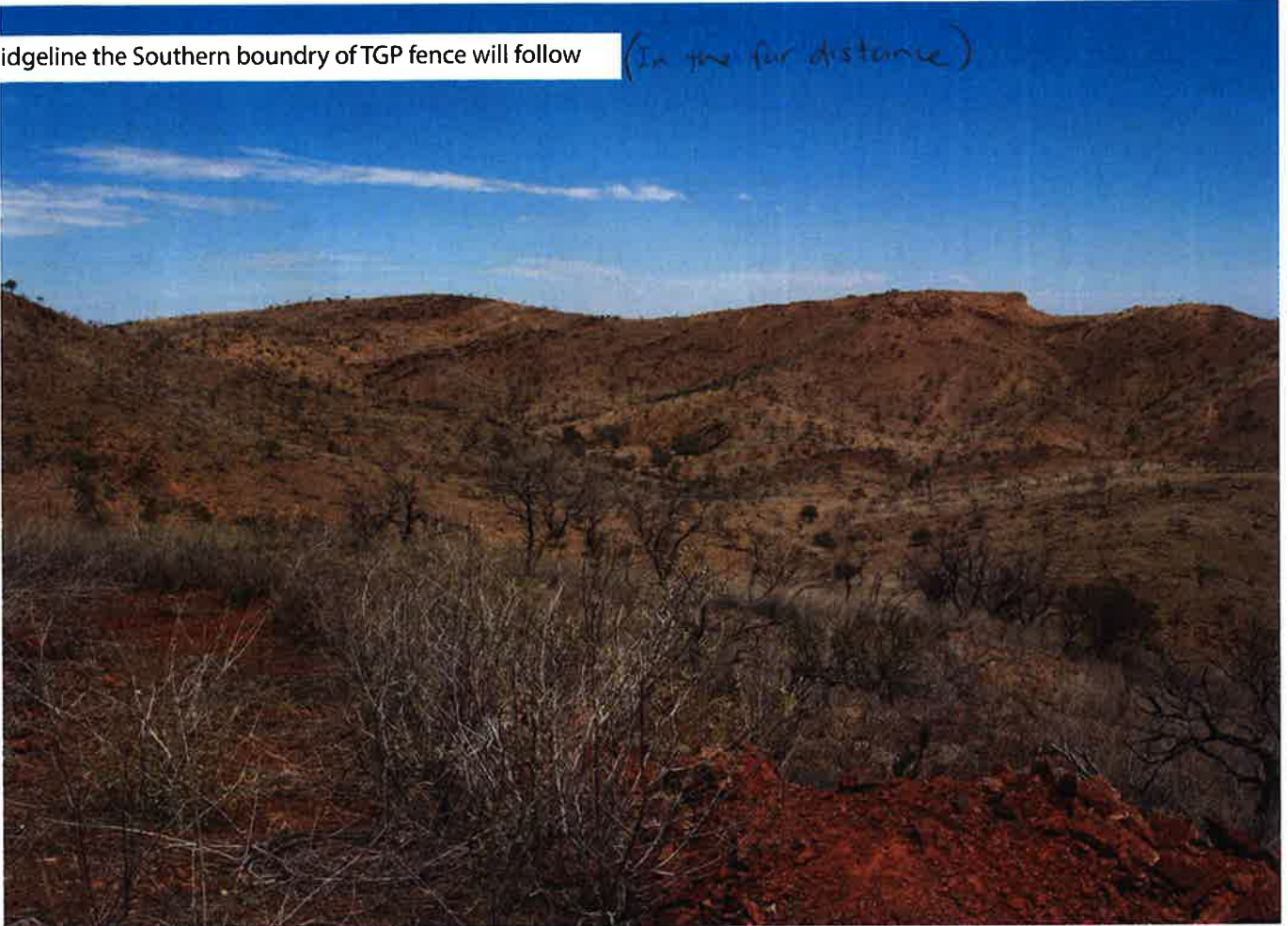


One of the creeks where floodgate will be constructed



Ridgeline the Southern boundry of TGP fence will follow

(In the far distance)



Porcupine grass and Red Mallee community



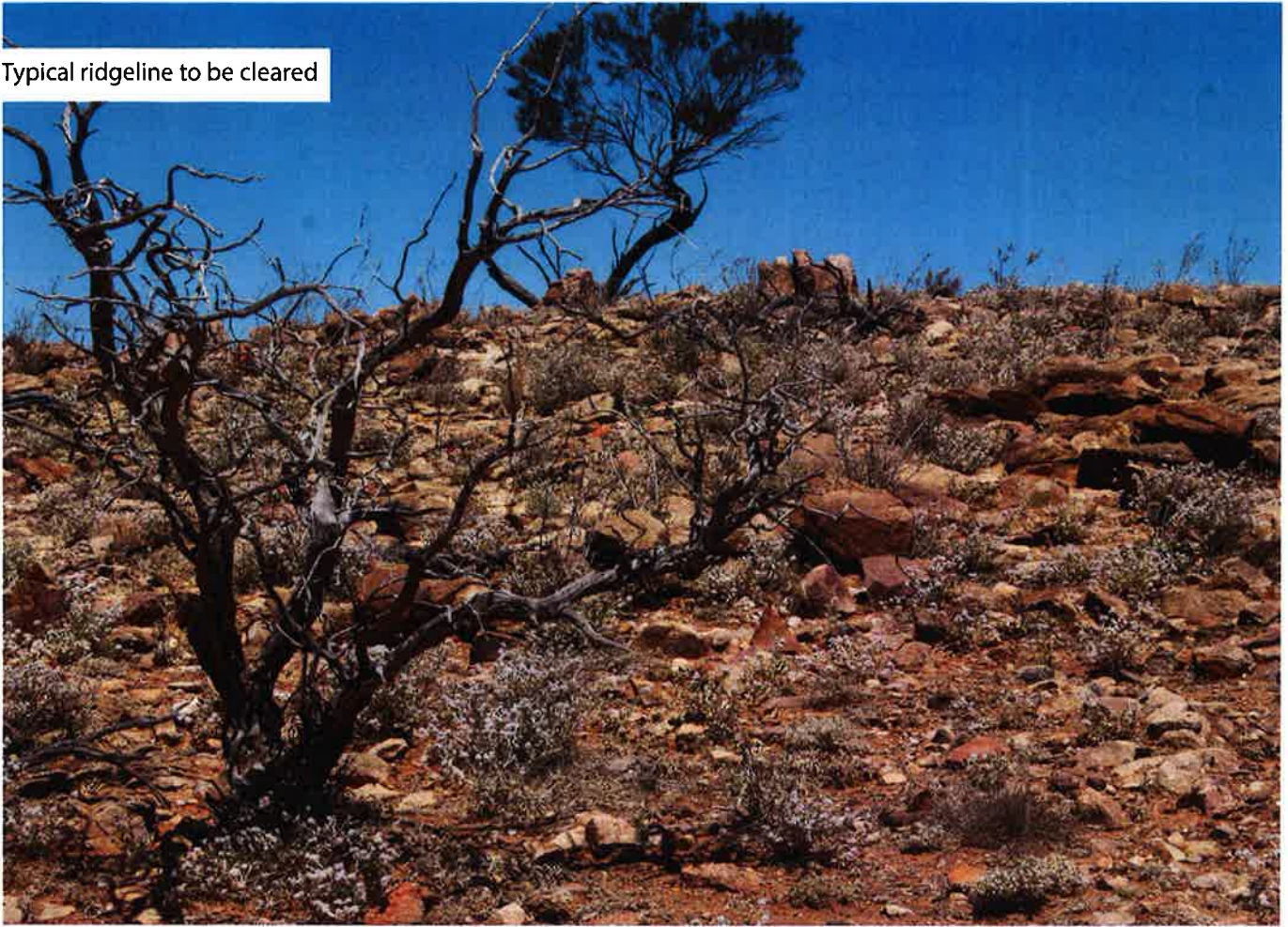
Porcupine grass and Red Mallee community



Porcupine grass and Red Mallee community



Typical ridgeline to be cleared



scrub to be cleared





Catchment Management Authority
Western

APPLICATION MAP

Project No.: W34285

John Blore
"Belmont", Broken Hill

Funding Program:
Incentives TGP 2013

Legend

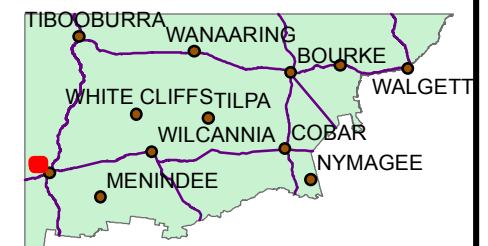
Point_Infrastructure

- existing ground tank
- ◊ existing trapped trough

Line_Infrastructure

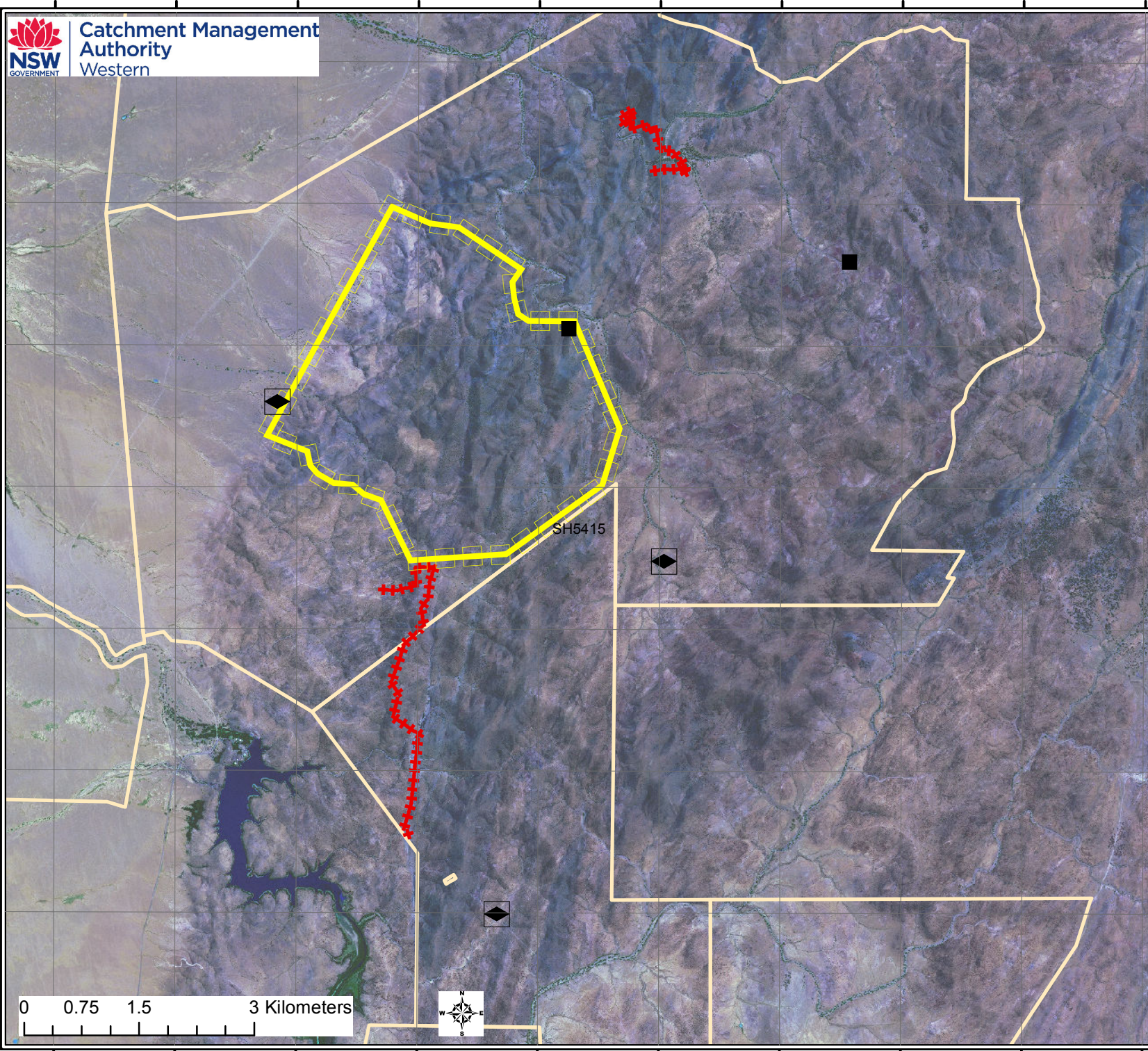
- ▭ proposed hingejoint fence

Location of Property



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Map: KGepp, 4.10.2013



0 0.75 1.5 3 Kilometers



141°11'0"E 141°12'0"E 141°13'0"E 141°14'0"E 141°15'0"E 141°16'0"E 141°17'0"E 141°18'0"E 141°19'0"E 141°20'0"E

31°44'0"S

31°45'0"S

31°46'0"S

31°47'0"S

31°48'0"S

31°49'0"S

31°50'0"S

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Goat fencing

Agfact A7.2.1, third edition 2003
Roger Lund, Senior Technical Officer,
(Engineering) Division of Plant Industries
Trevor May, Former Special Livestock Officer
(Goats) Division of Animal Industries

Fences are being used successfully to contain all breeds of goats in many environments. They are one of the first improvements intending goat owners should consider for without good fencing goats will roam. This not only upsets neighbours, but also disrupts stock breeding programs.

This Agfact covers the following points in relation to fencing for goats:

- behaviour,
- conventional fences,
- electric fences, and
- upgrading existing fences.

Material costs vary with time and location, therefore comparisons of cost have not been made. But, to make costing easier, a list of materials used per kilometre is given for each type of new fence on flat ground. In hilly country more posts and other material will be needed.

The term '*prefabricated fencing*' describes materials such as Hinged Joint®, Ringlock®, and wire netting.

Behaviour

Goats are intelligent, inquisitive animals who tend to test a fence more than other stock. Any fault in a fence is soon detected by goats. In particular goats test the lower third of the fence—especially the gap between the ground and bottom wire.

It is important to maintain the bottom wire close to the ground and at an even distance above it. Surface irregularities like gilgais, gullies or stump holes need to be filled or blocked. A bottom selvage wire and correct wire tension are good deterrents to goats

going under fences. Gaps under gates caused by washed out wheel tracks may need to be filled.

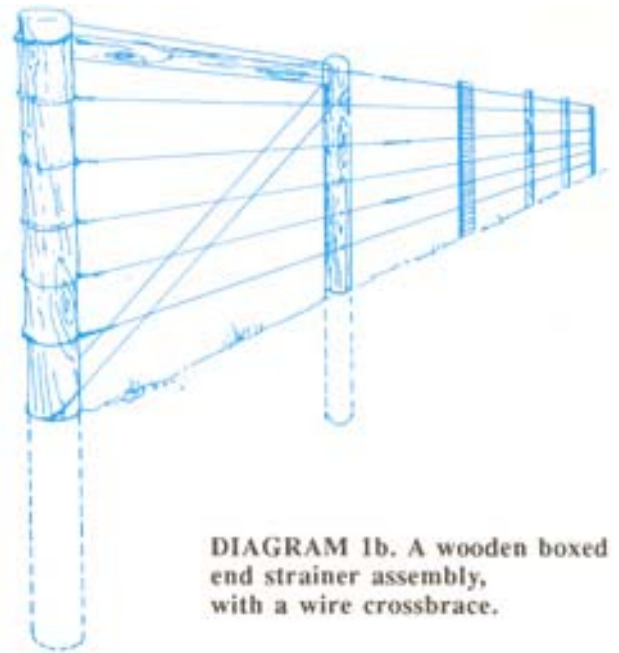
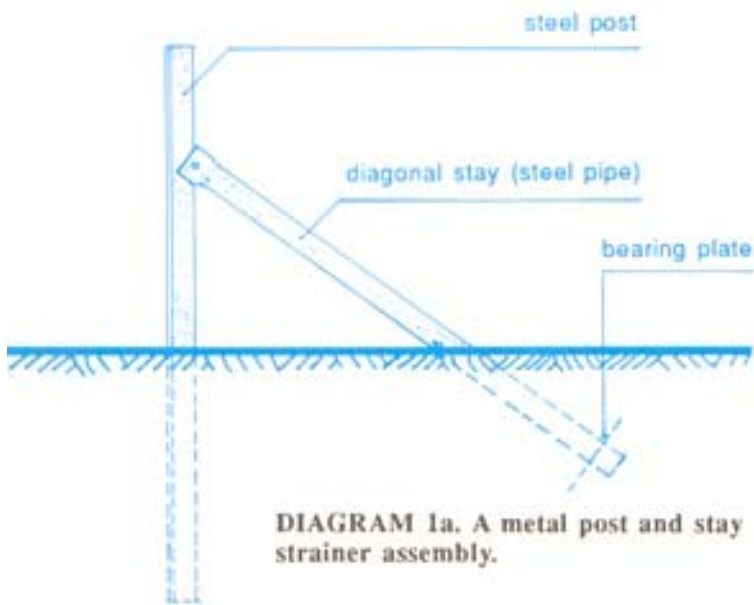
The climbing habit of goats—particularly kids—means fence lines must be clear of rocks, stumps, fallen timber, earth works or anything on which goats will climb and play. Any raised vantage point will provide a stage from which goats may clear a fence.

Domesticated goats rarely jump fences from the ground—except when they are being severely pressured, such as by dogs.

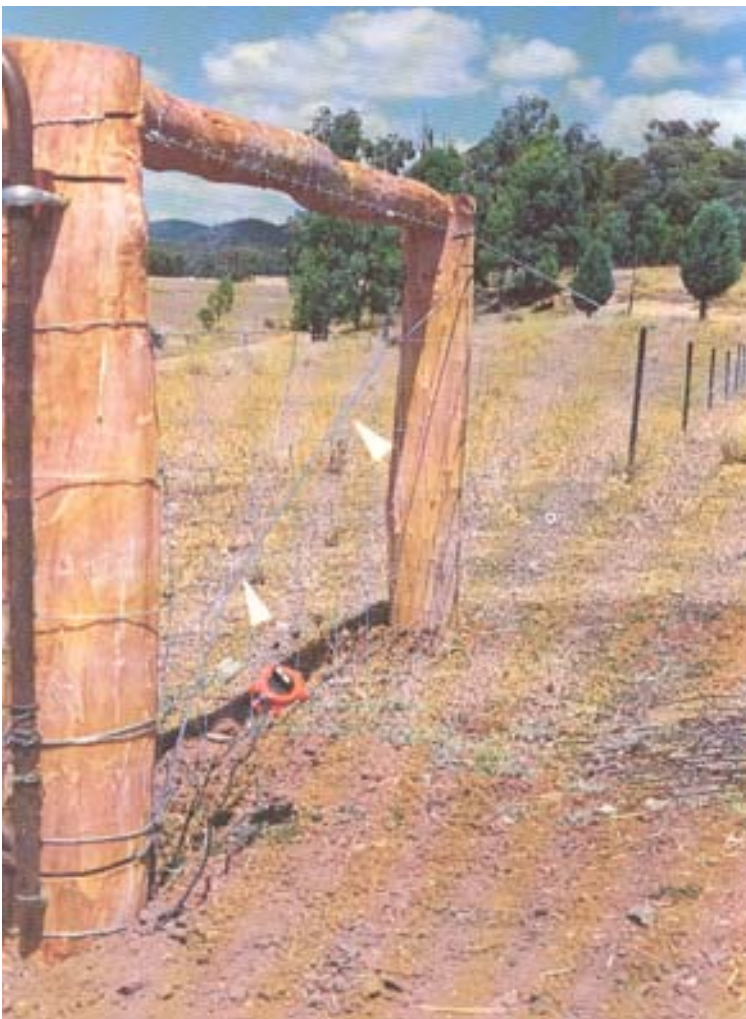
Fence strainer stays can also present an easy escape route. Large section angled stays on strainer posts need to be protected to prevent kids running up these and jumping out—round galvanised pipe angle stays are suitable. A boxed end assembly may be used when building new fences for goats.

Goats will test a barrier—particularly the bottom third of the fence.





A boxed end assembly with offset electric wire on a new prefabricated fence. This is the best type of fence-end for goats—there is no large inclined stay for them to climb, only the strand of twisted wire (arrowed).



Fences that contain crossbred ewes and lambs will, with some attention to detail, be suitable for goats. However, one type of prefabricated fencing—often called pig netting and described as 8/80/15*—can be a problem with horned goats. In this type of fence where the vertical wire pickets are 150 mm apart, goats can easily get their head and horns through but may have difficulty in getting them out. A goat could become caught and die. Therefore, we do not recommend the use of prefabricated fences with vertical pickets less than 300 mm apart. This spacing allows goats to twist their heads more easily to free themselves.

Horn tipping may completely overcome the problem of goats getting caught in 150 mm picket spacings. Even with the wider picket spacing some problems can occur where a steel post reduces the free space between wire pickets.

Special buck paddocks should be provided for males during the non-breeding season. Prefabricated material such as 7/90/30 or 8/90/30, and electric wires on outriggers are suitable.

Conventional fencing

Three designs are suitable for goats. Two are suitable as boundary fences with prefabricated 7/90/30 or 8/90/30. The other fence is adequate for internal fencing. The designs suggested are also suitable for sheep and cattle.

“8/80/15” prefabricated fence means 8 wires, 80 cm (800 mm) high, with vertical wire pickets at 15 cm (150 mm) intervals ...
“7/90/30” prefabricated fence has 7 wires, 900 mm high, with pickets at 300 mm intervals, and so on.

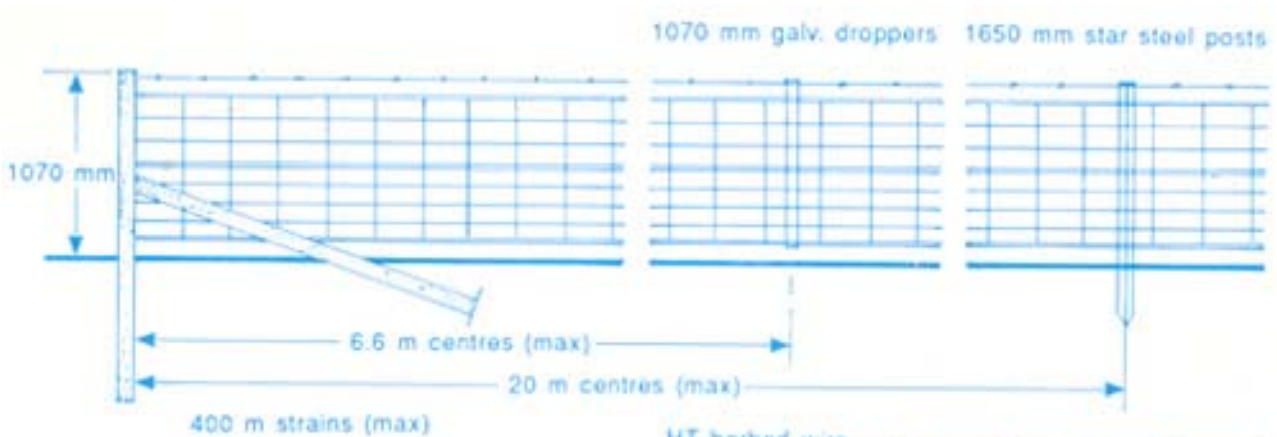


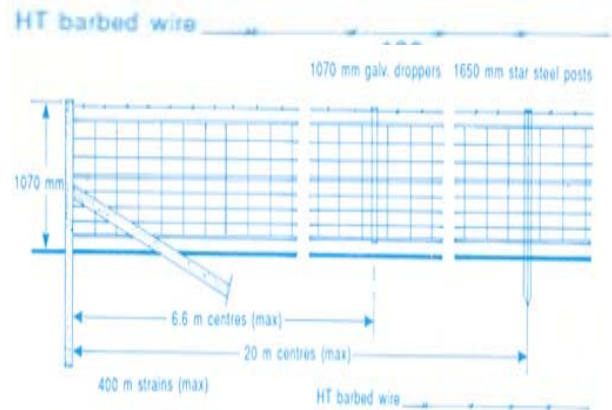
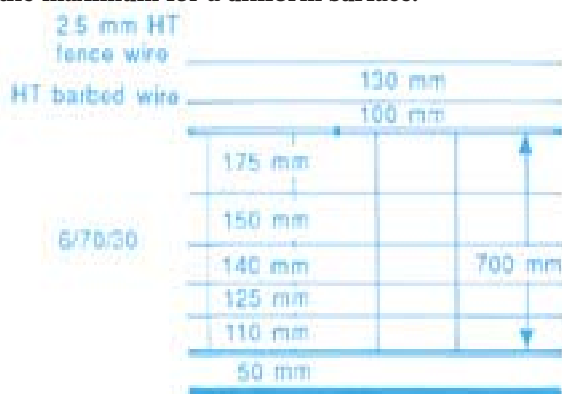
Diagram 2.

Boundary fences: 7/90/30 or 8/90/30

It is important that a boundary fence allows an absolute minimum of movement by stock pressure. The fence described in Diagram 2 will contain most kids. It features:

- Steel posts 1650 mm,
- droppers 1070 mm,
- bottom selvage wire about 25 mm above the ground with bottom of prefabricated fence attached at 1.5 m intervals,
- top selvage wire,
- one additional barbed wire above the fabricated wire for additional height. Materials required to

BELOW: A 6/70/30 prefabricated subdivision fence. Distances between posts and between droppers is the maximum for a uniform surface.



ABOVE: A 8/90/30 prefabricated boundary fence. Distances between posts and between droppers is the maximum for a uniform surface.

build 1 km of these fences are:

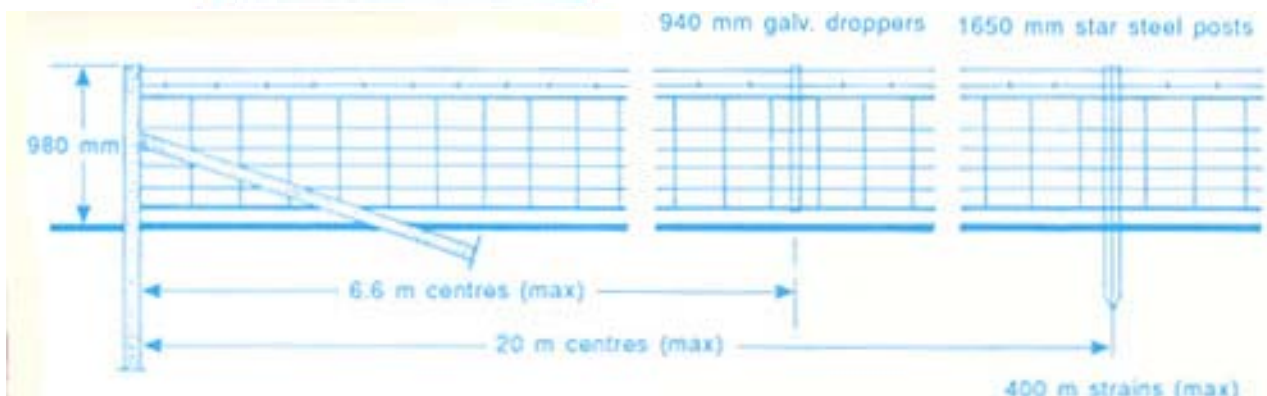
- five rolls 8/90/30 or 7/90/30,
- two coils 2.5 mm high tensile plain wire for the selvage wire,
- two reels of high-tensile barb wire,
- steel posts 1650 mm (to suit terrain),
- droppers 1070 mm (to suit terrain),
- suitable end strainer assemblies (see text).

Subdivision fences

6/70/30

The design in Diagram 3 will control the movement

Diagram 3





Electric wires offset near the bottom and top of an old fence to give a very secure barrier around a buck paddock.



Close vertical pickets can cause problems with goats getting caught in the fence.

of all adult stock, however some very young kids may get through. Young stock that penetrate this fence will usually return to their paddocks.

This fence is cheaper to erect than the boundary fence described above. It features:

- steel posts 1650 mm,
- droppers 940 mm
- bottom selvage wire 25 mm above ground with bottom of prefabricated fence attached at 1.5 m intervals,
- top selvage wire,
- two additional wires are used above the prefabricated wire for extra height.

Materials required to build 1 km of this fence are:

- five rolls 6/70/30, two coils of 2.5 mm high-tensile plain wire, top and bottom selvage and additional top wire,
- two reels of high-tensile barb wire,
- steel posts 1650 mm (to suit terrain),
- droppers 940 mm (to suit terrain),
- suitable strainers (end assemblies).

Alternatives to using barb wire include a suitably insulated electric wire, or a horse sighter wire.

Other designs

Previous recommendations for goat proof fences included an 8/115/30 prefabricated fence which did not require plain wire above the prefabrication to get extra height. This style of fence is quick and easy to build and is therefore a favoured design where a number of small subdivision paddocks are required.

However, kids of up to 12 kg body weight can get through the gaps between the third and fourth wires from the bottom. With internal fences this may not be a great problem but in boundary fences it is undesirable. This problem can be overcome by running an additional plain wire through the middle of the gap between wires three and four, and tying securely to the fabricated material.

This style of fence is very viable and has proved to be very effective around areas where kangaroos are a problem, such as forests. It does not necessarily stop the roos but they get a clear view to jump the fence and are therefore less likely to get caught in a top wire.

In some cases where there are a number of small paddocks it may be desirable to be able to climb through a fence. Unlike some other designs, the 8/15/30 is impossible to climb through and one should not climb over a fence for this practice damages the wires.

Wire netting fences built to control rabbits and wild dogs have been used by some producers for goat control. Although several sizes of netting are available, the two most commonly used are referred to as either rabbit or dog netting.

While these have a specialised role, they are far more expensive to build than the other fences described. These fences can be modified using a number of electrified wires resulting in a fox proof fence. This design is described in the Agfact A5.7.10 *Fencing for geese*.

Further details

Selva wires are additional plain wires attached to the bottom and/or top to strengthen prefabricated fencing. They are of greatest importance when fences are built over uneven ground.

Selva wires are also very useful when it is necessary to hang a skirt off the bottom of a fence when crossing deep depressions. Bottom selva wires are also recommended in conventional goat fences to stop goats from forcing their way under.



Electric wires offset near bottom and top of an existing fence around a training paddock.

Wire tension is an important factor in fence performance and life. Maintenance of wire tension relies heavily on the use of suitable end assemblies. Our recommendation is to use 2.5 mm high-tensile wires for selva wires, with additional plain wires run above the prefabricated section.

The correct tension for 2.5 mm plain wire is 2.0 kN and for prefabricated wire fencing is 1.0 kN per line wire. It is virtually impossible to achieve the correct tension without the use of some type of tension gauge.

Post spacings given in the diagrams are for fences built on even surfaces. When a fence goes over a hill or through a gully more posts will be necessary. More posts are needed over a hill to maintain the correct height of the fence while more posts and/or tie-downs are necessary when crossing a gully to keep the fence down.

Permanent electric fences

Two types of electric fence are recommended—one for boundaries and one for subdivisions. The two designs are known to work in a wide range of environments for control of goats and other livestock.

Electric fences are effective when well built and maintained and when stock have been trained to them. If stock have had no previous experience of electric fences, then they may go through. Usually, one contact

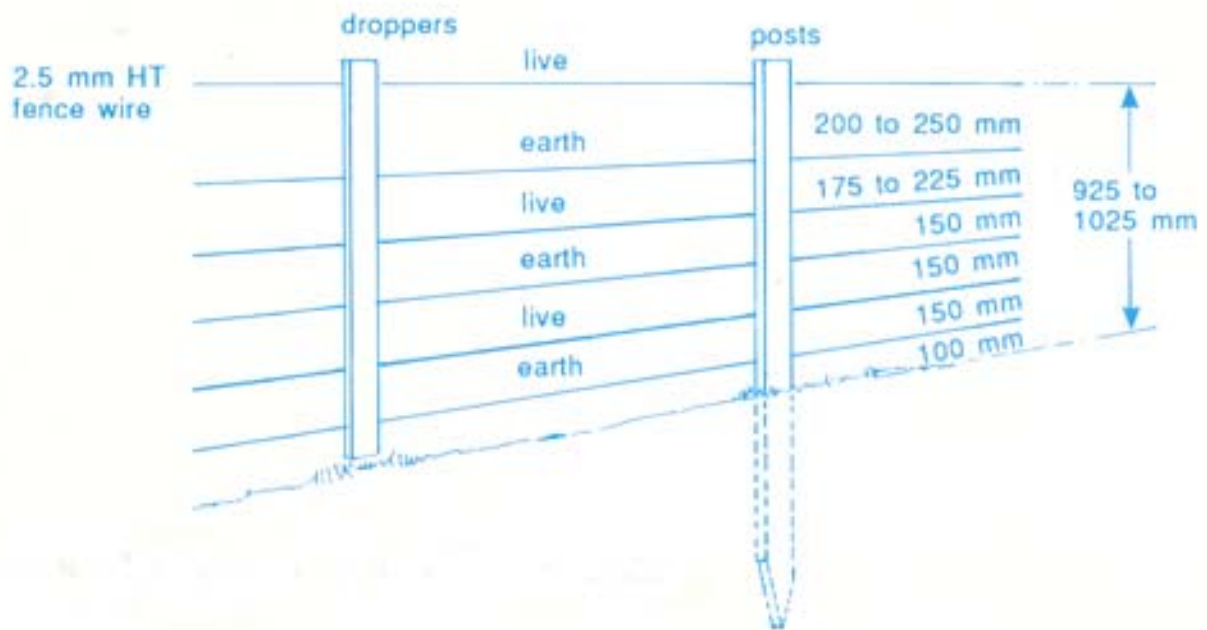


DIAGRAM 4. A six line permanent electric fence.

with a live wire and suitable earthing is sufficient training for most stock.

Electric fencing can offer cost savings over conventional fencing and can be easy and quick to build. Depending on the design they may also offer a measure of control over some vertebrate pests.

To be effective and give good service they do have to be built correctly using a design suitable for the specific application. It is also good practice to check the fence voltage regularly and at a number of points around the property where this is applicable.

A 'cheap' electric fence will soon let you down.

Each fence design consists of plain wires that are alternatively earthed or energised. For full design details refer to Agfact E2.1 *Permanent Electric Fencing*.

Six line boundary electric fence

This design will stop the movement of almost all animals. It is certainly effective against all domestic

livestock and will provide a measure of control over other animals such as kangaroos, feral pigs, wild dogs, and foxes. It features:

- line posts can be spaced up to 20 m over uniform surfaces—closer over undulating ground,
- line posts are either 1650 mm steel posts with insulators, specialised timber or fibreglass,
- timber or fibreglass droppers can be spaced at 6.6 m intervals on uniform surfaces—closer over undulating ground,
- wires are alternatively earth or live with the bottom wire earthed.

Materials required to build 1 km of this fence are:

- four coils 2.5 mm high-tensile wire,
- minimum 50 line posts and 100 droppers, with insulators if required,
- three bullnose insulators at each strainer,
- Accessories like cable clamps, underground cable,

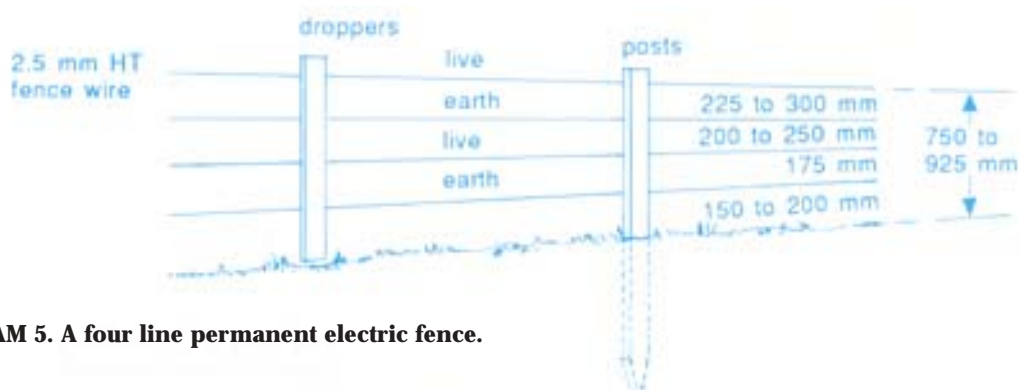


DIAGRAM 5. A four line permanent electric fence.

line switches and earth stakes are also required—don't forget to include the cost of an energiser.

Subdivision four-wire electric fence

This fence will control the movement of adult stock, it does not have the security of the previous design. Therefore it is suggested as being suitable only for sub-division fencing. It does control all livestock trained to electric fencing. Features:

- line posts spaced every 20 m over uniform surfaces,
- line posts are either 1350 mm steel posts with insulators, specialised timber or fibreglass, 2.5 mm HT fence wire droppers
- droppers spaced at 6.6 m intervals over uniform surfaces,
- wires are alternatively earth or live with the bottom wire earthed.

Materials required to build 1 km of this fence are:

- three coils 2.5 mm high tensile wire.
- line posts, droppers, insulators if required,
- two bullnose insulators at each strainer.
- Accessories like cable clamps, underground cable.

Specialised hardwood posts and droppers—either iron bark or creosote treated hardwood products—have excellent insulating properties. In most soil conditions these hardwood posts can be driven and are suitable to use as main line posts.

Fibreglass post are also suitable in a wide range of conditions. However, in soils that are too hard, or in rocky conditions, steel posts may need to be driven. Electrified wires need to be attached to steel posts by an insulator. Hardwood droppers may be tied to steel posts as insulators. Other types of insulators are available, but are often more expensive than hardwood droppers.

Wire tension, as with conventional fencing, is of great importance. Therefore adequate end assemblies—strainer posts—must be used.

Boxed end assemblies are normally recommended because goats cannot climb up these. Wires should be strained to the correct tension which is 2.0 kN for each 2.5 mm high tensile wire. A tension gauge is necessary to achieve the correct tension.

Other electric fence designs

Another design that has been used with success in the pastoral areas of NSW is a five wire electric fence. This fence has the top, middle and bottom wires electrified with the remaining wires earthed. Wire



Special care is needed over undulating land and rocky outcrops.

spacings used in this fence are—from the ground—125 mm, 125 mm, 150 mm, 175 mm and 200 mm, to give an overall height of 775 mm.

Electrified bottom wires are acceptable in areas where pasture growth is not prolific.

Temporary Fencing. Electric fencing can be used for temporary fencing, for example dividing a crop paddock for strip grazing. Special woven wire and rewind reels are available for this purpose. Multiwire electric fences are suitable for use as semipermanent subdivision fences, for example to divide a large paddock for a period of two years to aid in scrub control.

Earthing

Effective earthing is essential to ensure electric fences work efficiently under all conditions. The designs discussed in this Agfact are earth return systems where all non electrified wires are connected to the earth pole of the energiser and suitable earth stakes. It may be necessary to have extra earthing stakes along the fence particularly in low rainfall areas. It is not enough to rely on the animal's contact with the soil surface to make the earth. In most environments poor earthing occurs when the soil surface dries out.

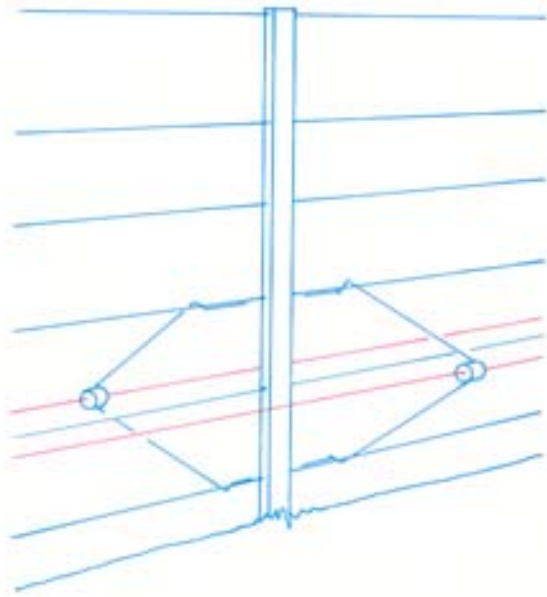


DIAGRAM 6. Upgrading conventional fencing for goats, using 2.5mm HT electrified wires. The wires are 250 mm above ground level and 250 mm from the fence. The insulated offsets are spaced about 20 m on level ground.

Energisers

Choose an energiser carefully, ensuring that it is big enough to maintain a good voltage all year round. Although goats soon learn to respect electric fencing—equally they soon learn when it is off or not working effectively.

A mains operated unit is preferred because it does not rely on batteries. That is not to say that battery or solar units will not do the job—just that they need regular attention and size for size a solar unit is more expensive.

There are also a number of variations in energiser design. The most common types simply deliver a single high pulse every second. Others charge each wire with an alternate positive and negative current . . . others use random high voltage pulses. The important point is that the energiser should maintain an effective deterrent to the goats—and where necessary vertebrate pests.

Upgrading existing fences

Many producers buying goats may modify existing fencing rather than build new fences. Those most frequently in need of upgrading are plain wire fences, prefabricated fences and old fences.

Plain Wire Fences. In purely grazing areas many fences have been built of plain wire, with or without one or more strands of barbed wire. In areas that have traditionally run only cattle, the fences may be multistrand barb wire.



Porcelain insulators and a wire outrigger used on goat proof fence.

Such fences can be easily goat proofed by tying prefabricated fencing directly onto them. However, in hilly country this is expensive and often difficult.

When the fence is sound it may be possible to add electrified wires on stand-off insulators. To control goats, additional wires near the bottom and top of the fence are necessary. The relative merit of using electrified wires on each side of a fence needs to be assessed against cost.

Location of the electric wires is important. The bottom electric wire needs to be placed about 250 mm above ground and about 250 mm out from the fence. The top electric wire is located below the existing top wire and about 25 mm from the fence.

Plain wire fence. If all main line posts are bored native hardwood—gidgea for example—then it may be possible to insulate selected wires and electrify these. However, most fences contain some steel posts and these need to be insulated.

Barbed wire in a fence that is to be electrified is no longer necessary as a deterrent to stock and is in fact dangerous. It is best to remove and discard the barbed wire. Replace or strengthen end assemblies that cannot carry the extra load of additional electrified or plain wires, or prefabricated material.



A polythene outrigger is used here to hold an electric wire clear of a prefabricated fence.

The suitability of various techniques, types of equipment and their placement varies with the existing fence.

Existing prefabricated fences may require relatively little improvement, depending largely on the type of prefabrication that has been used. A single off-set electrified wire about 250 mm off the ground generally will be quite sufficient.

With netting fences that are in good repair, the addition of an electrified wire on stand-off insulators—located between the top of the netting and the top wire—is usually sufficient.

If the base of the netting is weakened and not stock proof it may be necessary to use foot netting to cover holes. It is difficult to place an electrified wire near the bottom of holed wire netting, for there are often long ends of wire than can touch the electrified wire. This causes it to earth giving voltage loss.

A single barbed wire attached to the bottom of the fence is another option which may not only discourage the goats from pushing under, but also offers a wire on which to tie the netting. Netting fences in very poor condition may be a candidate for re-building.

A single, off-set electrified wire placed about 250 mm up from the ground will eliminate the problem of goats becoming caught in prefabricated fences using patterns with narrow vertical picket spacing, such as 8/80/15.

Other prefabricated fence patterns can have problems with animals passing through because either:

- the spacings between horizontal wires are too wide or
- the spacings between vertical pickets are too wide.

Overcome the problem by running an additional plain wire across the space that is too wide—this is most often the second or third space from the bottom. Again, the addition of a single offset electrified wire 250 mm up from the ground is also satisfactory.

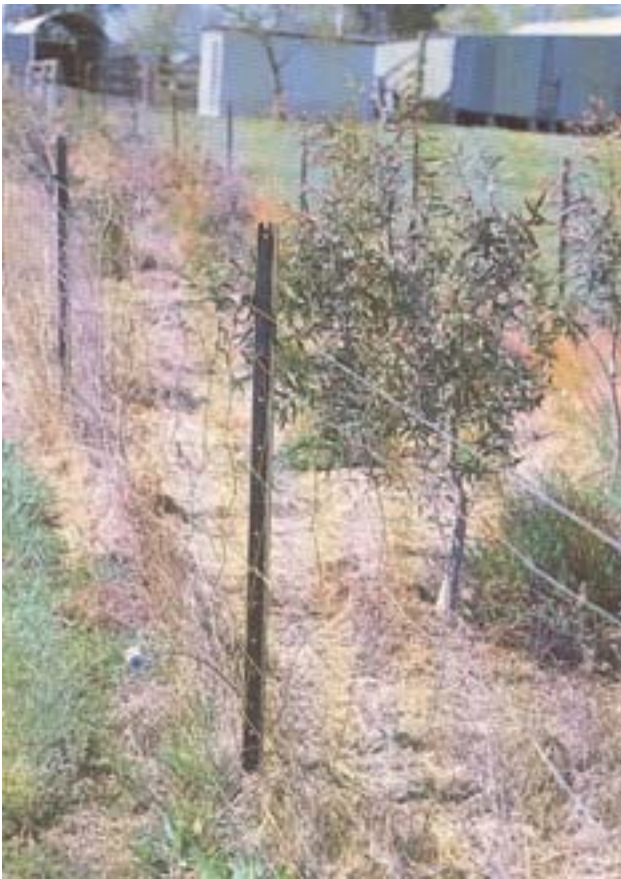
If the prefabricated section is too far off the ground—higher than about 25 mm—an additional bottom wire may be necessary. The addition of at least a bottom selva wire is an advantage in fences that do not have them. Details such as creek crossings also need to be checked to ensure that minimum clearances are maintained.

Aged, poor condition fences

Due to broken or rotted posts, or perhaps washaways, many fences are barely adequate to control sheep movement, let alone goats. Some fences can be refurbished relatively cheaply by dummieing broken posts, or building new strainers or the addition of new wires.

Addition of either prefabricated fencing or electrified wires can stock proof fences only if these fences can be stood-up and strained to the correct tension. The cost and time involved to repair an old fence must be weighed against the cost of erecting a new replacement fence-or even the need for the particular fence at all.

Old fences, past salvage, should be removed completely. If left lying around they are not only unattractive but are a nuisance when mustering, can be dangerous to people and stock—and they can help teach stock bad habits.



A tree lot protected from stock by a sound electric fence.

Other considerations

Legal obligations. Every person owning, or who is in charge of, stock has a legal obligation to restrain their stock from straying on to roadways, crown lands, quarantined areas or other protected land. There are a number of acts covering this subject, such as the Stock Diseases Act, which can render the owner liable to a fine or, in the case of a road accident, a compensation claim.

It is also important to confine stock not only for legal reasons, but also to maintain good relations with neighbours. Therefore effective boundary fencing is a very important subject when considering any stock enterprise.

Trees. Goats are particularly destructive to trees and therefore consideration needs to be given to tree guards.

A single adult tree can be protected by wrapping the trunk up to 2 m high with a number of wraps of wire netting or even corrugated iron. Young single trees need careful guarding with quite substantial steel mesh or similar, as the goats will stand on the mesh or even butt it in to get to the foliage.

The most effective and cost efficient method of protecting or establishing trees is to make a tree lot, ensuring that the fence will keep the goats off the trees. The 8/90/30 prefabricated design is quite suitable however the fence must be at least 3 m from the nearest trunk. If it is too close the goats will stand on the fence and lean over to get to the trees, eventually breaking down the fence. In this case some electrification will prove to be most effective.

Goats can be grazed where there are scattered adult trees, or where there is considerable regrowth without guarding, provided a careful eye is kept on the amount of damage being done to the trees. Careful attention to bark and foliage ensures goats can be grazed without permanent damage to the trees.

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DISCLAIMER

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