TROPICAL TIMBER PLANTATIONS BEAGLE BAY PROJECT

PUBLIC ENVIRONMENTAL REVIEW

SUBMISSIONS RESPONSES

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Prepared by

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Contents

1.0 INTRODUCTION

The Beagle Bay *Big Tree Country* Timber Plantation Public Environmental Review was released to the public comment in February 2005. Six submissions were submitted to the Environmental Protection Authority (EPA), in addition to oral submissions from the Beagle Bay community meeting in March 2005. This document contains a summary of all submissions received, and the Proponents response to these submissions. In addition, this document includes an updated summary of project characteristics and Proponents environmental commitments.

2.0 SUMMARY OF PROPOSAL CHARACTERISTICS AND PROPONENT'S COMMITMENTS

2.1 SUMMARY OF KEY CHARACTERISTICS ASSOCIATED WITH THE PROPOSAL

Component	Key Aspect	Characteristic Description
Plantation Operations	Proposed Site Location	Dampier Peninsula 120 km north of Broome
	Estimated Area of Plantation	967 ha (total disturbance, including fire breaks)
	Planting Density	Teak 1,000 trees/ha Sandalwood 315 trees/ha Sandalwood hosts 315 trees/ha
	Species to be Cultivated	Teak *Tectona grandis*, Indian Rosewood *Dalbergia latifolia*, and Indian Sandalwood *Santalum album*
	Planting Rate	Planting will be undertaken in 3 stages of 300 ha each.
	Total Estimated Production Teak Sandalwood Rosewood	 108,000 cubic metres 6,000 tonnes 56,700 cubic metres
	Project Life Span	20 years
	Anticipated Year of Proje Closure	2025
	Water Supply Requirements	4.5 GL/a
Transport Requirements	Road Train Movements	Approximetely 7000 loads hauled to Broome during harvest periods.
General	Workforce	25
	Workforce Accommodation	Accommodation Village for 25 people Area of disturbance 2 ha
	Infrastructure	Power source – Beagle Bay power station. Water source – Groundwater from site.
Plantation Facilities	Nursery Storage Shed Site Office etc.	Area of disturbance – 5 ha

2.2 PROPONENTS COMMITMENTS

COMMITMENT/ MANAGEMENT ACTIONS/ POLICY	OBJECTIVE	ACTIONS	TIMING	ADVICE FROM	COMPLIANCE CRITERIA
1. Weeds					
TTP will develop, in consultation and to the requirements of CALM, and implement a weed management plan, including implementation of weed hygiene procedures.	Ensure that weed species do not become established in the plantation site.	Prepare and implement a plan.	Prior to construction.	DoE, CALM.	Plan approved and implemented.
2. Dust					
TTP will develop and implement dust management plan for plantation construction and operation, which will include a dust monitoring program.	Ensure that particulate/dust emissions meet appropriate criteria and do not cause an environmental or human health problem.	Implementation of the dust management measures and monitoring program specified in the dust management plan.	Construction and ongoing	DoE.	Baseline and monitoring data obtained.
3. Wetland Groundwater Monitoring					
TTP will • Monitor ground water levels within the Bobby's Creek wetland system to the north of the project area; and • Monitor springs for agro-chemicals.	Ensure the Environmental Water Provision (EWP) criteria aren't breached.	Monitor groundwater levels throughout the life of the project.	Ongoing.	DoE, CALM.	Completion and reporting of additional surveys.
4. Groundwater Dependent Ecosystems					
TTP will: • Monitor the Groundwater Dependent Ecosystems (GDEs) north of the project area; and • Develop and set environmental water provisions (EWP) for the GDEs, and ensure these EWPs are	Ensure that groundwater extraction does not exacerbate natural variations in the height of the water table, leading to	Monitor GDEs throughout the life of project.	Prior to construction and ongoing.	DoE, CALM.	Baseline and monitoring data obtained.

COMMITMENT/ MANAGEMENT ACTIONS/ POLICY	OBJECTIVE	ACTIONS	TIMING	ADVICE FROM	COMPLIANCE CRITERIA
maintained • TTP is willing to undertake in consultation with CALM suitable conservation offset initiatives that would assist in the protection of the Bobby's Creek spring system or other high conservation value wetlands in the region such as Bunda Bunda TEC.	adverse impacts on these GDEs.				
5. Aquatic Flora and Fauna Monitoring					
TTP, in consultation with CALM and the DoE, will monitor flora and fauna aquatic indicator species of the Groundwater Dependent Ecosystems (GDEs) north of the project area.	Ensure the protection of the aquatic flora and fauna of the GDEs.	Undertake monitoring of aquatic indicator species	Ongoing	DoE, CALM	Completion and reporting of additional surveys.
6. Flora					
TTP commit to: • Undertake a detailed flora survey of the plantation area at the onset of a wet season; • Undertake Rare and Priority flora surveys in areas to be cleared prior to disturbance; and • Develop and implement in consultation with CALM a Priority Flora Management Plan, if necessary.	Ensure the protection of Declared Rare and Priority Flora.	Undertake additional required botanical surveys.	Prior to construction.	DoE, CALM.	Completion and reporting of additional surveys.
7. Fauna					
TTP will: • Implement a feral animal control programme to reduce the number of feral animals in the vicinity of the plantation site and its hinterland; and • Include habitat corridors of a minimum width of 80 metres within the plantation design.	Ensure the protection of native fauna populations.	Undertake feral animal control.	Ongoing	CALM	Programme implemented.
8. Fire Management					
TTP will develop a Bushfire Management Plan in	To reduce the risk of fire	Prepare and	Prior to	DoE, CALM.	Plan approved and

COMMITMENT/ MANAGEMENT ACTIONS/ POLICY	OBJECTIVE	ACTIONS	TIMING	ADVICE FROM	COMPLIANCE CRITERIA
consultation with and agreed to by CALM prior to project development.	to the tree plantation and protect the surrounding native vegetation.	implement a plan.	construction.		implemented.
9. Groundwater and Irrigation					
TTP will undertake: • A monitoring plan to ensure that qroundwater quality is not effected; • A monitoring plan to ensure that groundwater levels are not significantly reduced; and • Research to more accurately determine tree water demand of the plantation species.	To maintain sufficient quantity of groundwater so that existing and potential uses, including ecosystem maintenance, are protected. To ensure that the quality of the groundwater reserves is maintained.	Undertake monitoring research.	Ongoing.	WRC, CSIRO.	Monitoring and tree water requirements data obtained. Fulfilment of commitments contained in the Groundwater Licence Operating Strategy.
10. Closure Plan					
TTP will develop a detailed closure plan for the plantation in consultation with CALM and DIA. The closure plan will address rehabilitation actions to be taken for the plantation and associated infrastructure and will provide the basis for and eventual 'walk away' strategy for the project. It will also accommodate potential project failure.	Ensure ecosystem function is maintained following plantation closure and ensure the post-plantation landform is safe, stable, non-erodible and is integrated into the surrounding environment.	Develop plan.	Prior to commissioning and ongoing as the project develops.	DoE.	Closure plan approved by the DoE.
11. Aboriginal Site Survey					
TTP will ensure that (an) Aboriginal custodian (s) of the Beagle Bay Community will examine the project area for anthropological/ethnographic and archaeological sites prior to clearing. If any new sites are discovered, clearing will cease and the Department of Indigenous Affairs will be notified.	To ensure the protection of Aboriginal heritage sites within the project area.	Undertake surveys.	Prior to construction.	DIA.	Surveys conducted.
12. Environmental Management System					
TTP will develop at the commissioning stage of the	Manage environmental	Develop and	Prior to	DoE.	EMS developed and

COMMITMENT/ MANAGEMENT ACTIONS/ POLICY	OBJECTIVE	ACTIONS	TIMING	ADVICE FROM	COMPLIANCE CRITERIA
project and subsequently implement a formal Environmental Management System (EMS) for the project that embraces ISO 14001 standards and incorporates the following: • Mechanisms and processes to ensure: o Planning to meet environmental requirements; o Implementation and operation of actions to meet environmental requirements; o Measurement and evaluation of environmental performance; and o Review and improvement of environmental outcomes. • Monitoring of key environmental aspects; • Management of environmental impacts from clearing, planting and operation; • Rehabilitation and re-vegetation of the project area; • An overview of timing for implementation of commitments; and • Reporting requirements.	impacts of the construction and operation phases of the project.	implement EMS.	commissioning.		implemented.

3.0 BEAGLE BAY ORAL SUBMISSIONS FROM COMMUNITY MEETING 23RD MARCH 2005

3.1 How long are TTP taking water for?

For the term of the Ground Water Licence (GWL) granted under Section 5C of the Rights in Water and Irrigation Act that is anticipated to be granted by the Water and Rivers Commission (WRC). It is anticipated that this will be for the duration of the project: 20 years.

3.2 Why don't they pay for water – we pay for ours?

It is Government policy not to charge for water licences. This may change in the future.

3.3 Why does TTP hold the licence and not BBC Inc.?

This is a WRC requirement because TTP is the operating entity responsible for the water extraction.

3.4 What about monitoring herbicides and pesticides?

Pesticides and herbicides will be monitored as conditions of the Groundwater Licence Operating Strategy (GLOS) approved by the DoE. It is also stipulated within the project Environmental Management System (EMS) that TTP will undertake this monitoring

3.5 Will there be enough water left for the community and outstations now and in the future for growth?

Yes, there will be enough water left for the Beagle Bay Community for future growth. The outstations (Bobieding, Burrguk, Budgajook and Ngodalargin) are too far away and in areas which modelling shows will be unaffected by pumpage for the plantations. Groundwater modelling shows there will be less than 100 mm drawdown in the Beagle Bay Community bores after 20 years. Most of the groundwater for the plantation will be derived from groundwater recharge and throughflow from the south. At Beagle Bay the groundwater will be derived from throughflow not intercepted by the pumpage and from rainfall recharge over an area of about 75 km2 between the plantation area and Bobby Creek.

3.6 What planning has occurred to assess current community use and need?

Incomplete information about the Beagle Bay Water Supply bores and projected requirements was supplied by the administrator of the Beagle Bay Community in August 2003. The information provided was part of a study by Sinclair Knight Merz (SKM 1994) consulting engineers. No other studies were known at that time. As far as can be ascertained there is no current licence for the Beagle Bay Water Supply. Previous statements that a licence for 100,000 kl/a are incorrect, these actually relate to the licence granted to the community on behalf of Tropical Timber Plantations, for the trial tree plots. DoE and DIA are co-operating to prepare a study of water requirements and a water source protection plan.

3.7 What planning has occurred to assess the long-term community need for water, taking into the account community demographics?

The only planning study known to assess the long-term community needs is the Sinclair Knight Merz report. The Sinclair Knight Merz report concluded that the existing bores were capable of meeting the communities' demands until 1999. The water demand in 1994 was about 310 kL/d (113,150 kL/a) and was expected to rise to about 430 kL/d (156,950 kL/a). The population has remained stable at about 300 to 400 people. Periodic readings of water usage undertaken by Kimberley Regional Service Providers (KRSP) indicate that demand varies between 30,000 AND 50,000k/L per quarter. The fact that there has been no increase in the groundwater licence from 100,000 kL/a suggests that the population is relatively consistent.

3.8 Will the water licence to TTP allow or stop other economic development opportunities in the area? E.g. Tourist resorts? Woodside gas? How will this project impact on potential for other economic development initiatives?

No. The proposed developments mentioned would draw water from other parts of the Broome aquifer not affected by the TTP pumpage.

3.9 Will TTP be able to trade their water licence?

The trading of licences is controlled by the WRC. Additionally, all the groundwater that would be granted under the GWL is required for the TTP project leaving no surplus extraction.

3.10 Can conditions be imposed to limit this?

No, see answer 3.9.

3.11 Could BBC hold the water licence

No, see answer 3.3.

3.12 Could the water information be given in plain English?

The hydrogeology reports have been written as clearly as possible. If the community have any questions the project hydrogeology consultants (Rockwater) are available to help discuss any queries to enable better understanding.

3.13 Will the existing Beagle Bay Community water source be impacted by project?

Yes. After 20 years the drawdown is modelled to be about 100 mm (0.1m). The long term drawdown of Beagle Bay bores 1/82 and 1/83 estimated by the former Public Works Department was 32.9 m and 2.4 m at recommended pumping rates of 160 and 200 m3/d and an additional 0.1 m of drawdown will not affect their performance.

3.14 Will the outstation bores be impacted by the project?

No, they are too far away.

3.15 Given that TTP have applied for a 15 GL, are they first in line for 15 GL of available water within the region?

The volume of water applied for by TTP is 4.5 GL. The WRC allocates the groundwater on a first-come, first-served basis after ensuring other existing water supplies or users are protected.

3.16 Can a copy of the proposed water conditions on TTP be obtained?

Yes. The conditions will be attached to the groundwater licence issued by the WRC and the attached Groundwater Licence Operating Strategy (GLOS) which specifies monitoring, reporting, and management procedures.

3.17 What sort of conditions could be imposed on TTP to restrict the use of water licence solely to activities of tropical timber plantation and not sell on part of water licence, should they have surplus to requirements?

See reply No 3.9.

3.18 Will the community have to buy water from TTP?

No.

3.19 What will be the boundary from which TTP can draw water?

TTP can only draw water from inside its lease area. Bores are planned to be located 10 to 12 km from the Beagle Bay Community and Bobby Creek.

3.20 What will be the boundary of the area impacted by the taking of water?

The area impacted by the pumping for TTP as determined from modelling is within a tear-shaped capture zone extending for about a 7 km radius to the north west and east of the borefield and extending southward in a tapering capture zone extending toward the Baskerville anticline (See Figure 6.1 – Appendix A).

4.0 SUBMISSIONS FROM DR. GRAHAM THOMPSON

4.1 Terrestrial Fauna Survey, Data Analysis and Assessment:

In March 2005 the EPA release a PER for a proposed timber plantation development at Beagle Bay in the north of WA. The proposed development is for a 900 ha plantation in an area where the consultant indicated that there had been few previous fauna surveys and most of the data in Faunabase came from oppurtunistic collecting by amateur herpetologists. In this circumstance, a comprehensive terrestrial fauna survey of the site was required (EPA *Guidance Statement No. 56).* The consultants employed 20 Elliott traps and 10 pit-traps at each of the six sites that were left open for 7 nights, providing a total of 420 pit-trap nights and 840 Elliott trap nights. This systematic trapping program was supplemented with hand foraging and spotlighting. Data presented by Thompson *et al*. (2003) would strongly suggest that this survey effort was unlikely to catch sufficient individuals (a total of 58 reptiles were trapped and another 22 were opportunistically collected, 10 mammals were trapped and another six were opportunistically collected) to enable the consultant to achieve its objective of undertaking a baseline survey that enabled the compilation of a fauna species list for the project area, even if the area is a heterogeneous habitat.

Response: *The comment suggests that the trapping effort was inadequate. In fact, more than 130 individual reptiles were collected. Nevertheless, at the time the survey was undertaken, and still to this day, there are no prescriptive guidelines available to consultants that detail what the EPA consider to be an adequate fauna survey. In fact, even Thompson et al. 2003 fails to note exactly what effort is required (extract from Thompson et al. 2003: "…it is not possible to provide a general indication of the effort required to predict species richness …..") to catch a particular portion (75%) of species expected to occur in any given area. The most the paper appears to do is suggest the current efforts of consultants are inadequate. A baseline survey of any magnitude will provide a baseline data set for comparison. Further surveys will continue to reveal new species, as well as notable absences.*

In 2003, when the survey was undertaken, the EPA Position Statement No. 3: Terrestrial Biological Surveys as an Element of Biodiversity Protection suggests that a comprehensive survey should be undertaken to describe the characteristics of the area, and its conservation and functional value. Though characteristics and conservation value are easy to assess, in context with the surrounding environment (comparing the proportion of land disturbed vs. proportion of similar land left remaining), describing the functional value of an area without the benefit of prescribed and/or uniform methodology approved by the EPA is not practicable. The EPA Guidance Statement No. 56 was only released in June, 2004, as a final document.

Based on species accumulation curves prepared for other areas in WA, the trapping effort is likely to have catch less than 60% of the species on site, if it was a relatively homogenous habitat, and less if it contained multiple biotypes.

Response*:* *It is noteworthy that trapping revealed only 31% of reptiles and 25% of mammals not recorded by hand foraged or found during spotlighting. This means the 25 hrs*

and 35 mins of opportunistic searching revealed 69% and 75% of the total species observed. These data indicate that further trapping may not have increased the quality of the survey to any great extent. The value of opportunistic searching should not be underestimated, and the analysis presented in Thompson et al. (2003) is based on trapping data only. For a recent biological survey undertaken by the consultant – The Goldsworthy Extension Project, and approved by the EPA, a total of 75% of the expected herpetofauna were recorded. However had only trapping data been considered the percentage of expected fauna collected would be 52% - 31% of all fauna records were obtained with non-trapping techniques.

The consultants cluster analysis, which is used as an inadequate dataset for each of the six sites (e.g. for reptiles- 23 species and 58 individuals across six sites), indicated the faunal assemblages differed greatly, which if true, would require an even greater trapping effort than if the area was a single biotype. Using multivariate analysis on limited datasets reflect poorly on the consultant and draws into question the veracity of the whole report.

Response: *Cluster analysis was presented for both herpetofauna and birds, not just reptiles as suggested by Dr Thompson. Cluster analysis for herpetofauna were based on 58 records across six sites (not 58 individuals as suggested by Dr Thompson). These records were compiled from the capture of more than 130 individual animals. Analysis could have been conducted on abundance, rather than presence absence; however, some species are easier to capture and are captured in greater numbers than others, so the presence/absence approach was deemed more suitable, despite the smaller data set. Whatever the case, the outcomes for the birds, based on 145 records in six sites (presence/absence based on over 1000 individual records) returned the same outcome: that there* ***did not*** *appear to be any difference in the species assemblages between sites, despite the fact that the Chi-squared analysis* ***did*** *indicate a difference in species richness.*

In an effort to holistically consider the adequacy of the survey, site specific survey effort and sampling adequacy was also presented.

The failure to employ funnel traps will have meant a whole component of the herpetofauna was inadequately sampled (e.g. pygopods, medium and large snakes, fast-moving and widely foraging skinks would be under represented),

Response: *Funnel traps were not well known and not widely available when this survey was undertaken. In fact a student of Dr Thompson's only invented commercial versions in late 2003 – early 2004. This fact does not mean that every consultant in Perth was aware or obliged to buy them from Dr Thompson and use them at that point. In fact, CALM only just started using them regularly in late 2004. There is no specific reference in the Guidance Statement No. 56 that indicates that Funnel traps are a mandatory requirement in baseline surveys.*

In the absence of funnel traps (standard practice for all surveys currently undertaken by ecologia), the types of species identified as being inadequately sampled were collected by hand foraging and presented in the report (e.g. Brachyurophis roperi, Pseudonaja nuchalis, Furina ornata *and* Pygopus nigriceps*).*

and the failure to use wire cage traps would have meant that some of the larger trappable mammals that may have been in the area would not have been adequately sampled (e.g. Trichosurus vulpecular arnhemensis, Wyulda squamicaudata).

Response: *The consultant did utilise a small number of cage traps (5) during the survey and their lack of mention in the report is an oversight. The traps were in position for a total of 25 trap nights. No fauna were collected in the cage traps. Trichosurus vulpecular arnhemensis was recorded opportunistically. Though there are historic records of bilbies (WAM); this taxon, the Burrowing Bettong and the Golden Bandicoot are not likely to still occur in the region. All other potential mammals would have been caught in Elliot Traps. There are no records of Wyulda squamicaudata near the project area as listed on the WAM database.*

Without an adequate sample for a site that has been poorly surveyed in the past it is not possible to assess biodiversity and ecological functional values as required in the EPA *Position Statement No. 3* (2002). This survey could not be considered as either "detailed" or "comprehensive" as required in *Guidance Statement No.56* (2004). It is not possible for the EPA to make a reasonable assessment of the potential impact on the terrestrial fauna assemblages in this area on the presented data.

Response: *Again, there is no prescriptive method that details what exactly constitutes a "comprehensive" or "detailed" survey. The EPA can decide simply based on the principle of how much of a relatively uniform country will be lost vs. how much will remain. As the local habitat is continuous beyond the boundary of the disturbance footprint, there is nothing to prevent succession of fauna back into the site once it has been rehabilitated.*

Species accumulation curves presented (Fig 4.3) for reptiles, mammals and birds are atypical that for most other areas in Western Australia and I seriously doubt the species accumulation curves are "approximately asymptotic" as suggested by the report. Averaged species accumulation curves should have been presented as these are a much better indication of the trapping effort and are much less affected by local environmental conditions and day-to –day variations in small vertebrate activity patterns.

Response: *As a function of survey effort in the habitats present at the time of the survey the species accumulation curves as presented clearly indicate that for the duration of the survey the species accumulation approximately asymptotes implying that additional survey days in that season in that year are unlikely to yield significant numbers of additional species. The curves presented were calculated suing all species recorded by both systematic (including trapping) and opportunistic methods*

However the comment is valid in respect to number of individuals recorded via trapping only. Had the data been analysed using the averaged method they would have not been asymptotic.

Species lists from other fauna surveys in the region should have also been provided for comparative purposes. Position Statement No. 3 makes it very clear the data needs to be assessed in a regional context, how else can this be done if the relevant data are not presented.

Response: *The consultant is unaware of any survey work of any significance on the Dampier Peninsula (the appropriate region), or in similar habitat, to the plantation other than those mentioned in the report. However, Appendix C does detail every vertebrate fauna specimen lodged with the Western Australian Museum.*

The EPA's (2002) Terrestrial Biological Surveys and an Element of Biodiversity Protection: Position Statement No.3 makes it very clear that the EPA expects proponent to ensure that terrestrial biological surveys provide sufficient information to address both biodiversity conservation and ecological function values (pp. 12). Clearly the consultant has not collected sufficient data to address this issue. No attempt has been made to assess ecological function value for the site.

Response: *Again, in the absence of prescriptive guidelines any attempt that a consultant make to present some form of quantitative assessment of conservation or functional values for a site will have limited applicability in a broader assessment for the conservation of the states biodiversity. The EPA have recognised this and are attempting to address it with the publication of documents detailing strategies to conserve biodiversity.*

4.2 Conceptual Closure Plan

It is pertinent to note that this document is a Conceptual Closure Plan, rather than the Project's Closure Plan. The purpose of this document is to outline the requirements of closure and thereby describe the methodology to be utilised in creating the Project Closure Plan.

The primary objective for the closure plan should be the creation of a safe, stable and near-natural, self-sustaining, functional ecosystem in the area, with a strong focus on the creation of the near-natural, self-sustaining functional ecosystem.

Response: *The conceptual closure plan states its objective as "to prevent or minimise long-term environmental impacts and to create a self-sustaining natural ecosystem or alternate land use based on an agreed set of objectives (ANZMEC 2000)" [pg 8].*

Dr Thompson states that it should be worded as "the creation of a safe, stable and near-natural, self-sustaining, functional ecosystem in the area, with a strong focus on the creation of the near-natural, self-sustaining functional ecosystem." The Proponent is willing to incorporate this statement in the Project Closure Plan as one of the closure objectives.

If the TTP wishes the site to be used for another purpose then this should be stated.

Response: *At this early stage of planning, the Beagle Bay Community has indicated that they intend to take over the plantation at the conclusion of the 20 year project. However, the Proponent feels that it would be misguided to state that this is the intended purpose for the site at completion of the project, as there are numerous factors that may influence whether this will still be a viable option in 2025, e.g. economic and environmental factors. The Proponent believes that it is best practice to incorporate all possible scenarios in the Conceptual Project Closure Plan, and*

continual review of the plan (as stated on page 2) will enable these objectives to become better defined closer to the time of closure.

It is not adequate to indicate that the determination and definition of completion criteria should be achieved through active consultation between TTP and relevant stakeholders. These negotiations should have already taken place and the criteria clearly documented in this report. Removal of infrastructure, exotic vegetation and pollutants is an obvious prerequisite to the establishment of a near-natural, self-sustaining functional ecosystem on the site.

Response: *At the commencement of the Project, the Closure Plan will be devised based on the criteria outlined in the Conceptual Closure Plan. Some consultation has already been undertaken, for example with the Beagle Bay Community and rehabilitation specialists in the Kimberley. It is not deemed appropriate to include this consultation in the Conceptual Closure Plan.*

Interestingly, section 11.1 requires monitoring of fauna species diversity. With inadequate baseline data (e.g. no accounting for temporal variations, incomplete species list, no appreciation of relative abundance) it will not be possible to effectively monitor faunal diversity during or at the conclusion of the project. Adequate baseline data are required and detailed monitoring protocols should have been documented.

Response: *The survey was undertaken in accordance with the guidelines and consistent to other surveys undertaken by consultants; consequently sufficient data pertaining to common species has been determined, from which fluctuations in population dynamics can be determined. These fluctuations can thus be used to make estimations on the impacts of population dynamics of other less common species.*

Detailed monitoring protocols will be outlined in the Project's Closure Plan, which will be made available to the EPA.

4.3 Recommendations

As the terrestrial fauna assessment falls a long way short of the EPA requirements as outlined in Position Statement No. 3 and Guidance Statement No.5, it is recommended that the proponent be required to undertake an appropriate comprehensive fauna assessment of the site. These data should then be reported, analysed and interpreted in a regional context as required in Position Statement No. 3. The project should not proceed until this has been done. When this has been done and subject to independent peer review, the revised PER be released for public comment.

Unless an alternative use is planned for the site, the closure plan must set its primary objective the creation of a near-natural, self sustaining functional ecosystem. The plan needs to be rewritten based on this objective. Adequate baseline monitoring data are required to assess the success in the creation of a near-natural, self-sustaining functional ecosystem. It is recommended that the closure plan not be approved, but is rewritten and re-released for public comment before it is considered for approval.

Response: *See above.*

5.0 SUBMISSIONS FROM THE DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Background

It is noted that in general terms, the proposal is "…acceptable to CALM".

5.1 Hydrological Impacts on Wetlands

CALM's main concern with this proposal was the potential for impact on the Bobby's Creek wetland system, which contains the Lolly Well Springs wetland complex. The Lolly Well Springs wetland complex is listed by the Department as a Priority 4 Ecological Community. The close proximity of these wetlands to the proposed plantation, combined with the groundwater dependence of the springs, indicated that this ecosystem could potentially be impacted by drawdown of groundwater from abstraction for plantation requirements.

Following discussions between the proponent, CALM and the Department of Environment, CALM is satisfied with the measures now proposed to monitor and manage any hydrological impacts to this wetland system.

***Response**:* *It is noted that "following discussions between CALM and DoE, that CALM is satisfied with the monitoring measures which have been put in place".*

5.2 Fire Management

Extensive and frequent fires are a feature of the Dampier Peninsula and are arguably a significant threat to the plantations success. CALM would like to highlight the importance of timely development and implementation of the bushfire management plan listed under commitment 7 (Table 10.0 Commitments, page 143)

Recommendation

The bushfire management plan should be developed in consultation with and agreed to by CALM prior to project development.

***Response*:** *TTP agree to develop a Bushfire Management Plan in consultation with and agreed to by CALM prior to project development.*

5.3 Weed Management

The PER states that weed invasion has not been significant within the project area, with no weed species being recorded during the 2004 *ecologia* survey (6.1.3 Impact from Weeds, page 101). The proposed plantation will potentially provide opportunities for weed introduction and dispersal into the project area and surrounds through a number of vectors. The PER does mention the potential for contaminated nursery stock to introduce weeds, however, there is a need to recognise the risk

associated with cyclonic flooding and the associated dispersal of non-native propagules in the event that weeds do get established. A commitment to weed monitoring and subsequent eradication programs to alleviate this threat is required.

Recommendations

The Weed Management Plan requires a monitoring and eradication program. This component of the program should extend to an agreed area outside the immediate project area in which weed monitoring and eradication should take place in the following period following cyclonic flooding. The weed management plan should be developed in consultation with, and to the requirements of CALM.

***Response*:** *TTP agree to develop a Weed Management Plan in consultation with and agreed to by CALM prior to project development.*

5.4 Groundwater Contamination

The proponent has previously stated (email to CALM dated 2 July 2004) that as part of the project's risk management plan; there is no risk of chemicals reaching downstream wetland areas. The modelling revealed that the predicted time for groundwater to travel to Bobby's Creek is about 200 years and subsequently, as there are no wetlands or drainage areas near to or within the sites, there is negligible risk of superficial contamination of site soils having any downstream effects by way of transportation.

Further, the proponent states that the pesticides and herbicides used in the project are highly degradable, and given the depth to groundwater, factors such as dilution and dispersal in soils and water, and adsorption due to soil type in the locality, it appears unlikely that these chemicals could leach into the groundwater.

CALM understands that under the groundwater licence operating strategy to be negotiated with the Department of Environment, agro-chemical scans will form a component of the ongoing groundwater-monitoring program. During the life of this project it will be important to review the risk profiles of new chemicals that are proposed to be applied and to regularly review monitoring programs. If at some future date risk assessment or agro-chemical scans indicate potential for contamination of the wetlands, there may be a need to establish baseline limnological monitoring at appropriate sites to detect adverse changes to these systems. CALM is not aware of any studies that have been conducted on the limnology of these highly localised wetlands.

Recommendation

Under the groundwater licence operating strategy to be negotiated with the Department of Environment, the proponent should develop a management plan that addresses groundwater contamination risk management and monitoring requirements to allow for regular reviews throughout the life of the project. This plan should include a requirement to conduct appropriate risk assessment for all chemicals that will be applied. If, at some future date, risk assessment or agro-chemicals scans indicate potential for contamination of the wetlands, establishment of baseline limnological monitoring at appropriate sites to detect adverse changes to these systems should be considered.

Response: *Monitoring of the springs for agro-chemicals is a commitment given in the GLOS. TTP have also given a commitment to undertake surveys of invertebrate aquatic fauna in the system.*

6.0 SUBMISSIONS FROM THE DEPARTMENT OF PLANNING AND INFRASTRUCTURE

6.1 Water Source Allocation

The proposal intends to seek a water allocation of 4.5G GL per year with a potential allocation of 7.1 GL should stage 2 proceed. However, in the absence of a water source protection plan, or licensing of community bores on the Dampier Peninsula, it is not clear whether the proposed allocation is sustainable. Further clarification is requested in terms of other potential users of the source. Specifically:

a) What is the overall sustainable yield from the aquifer?

Response: *The groundwater for the TTP project is to be obtained from a flow-system (sub-area) of the Broome aquifer on the Dampier Peninsula. The annual renewable groundwater resources in the flow system have been determined by computer modelling, supported by recharge estimates, to be about 62 GL/annum (Rockwater, 2004).*

b) What is the current drawdown from the Beagle Bay community and/or other users of the source?

Response: *The present groundwater pumpage for the Beagle Bay Community water supply is not known. In 1994 the estimated pumpage was 113,150 kL/annum (SKM 1994). Since that time the population has remained stable at about 300 to 400 people. No major increases in pumpage are known to have occurred and maximum annual pumpage is likely to be less than 200,000 kL/annum. The pumpage for pastoral bores and outstation water supplies is not known. They are located outside the area to be affected by pumpage from the proposed TTP borefield.*

c) Would licensing of the proposed allocation limit other potential users of the source, and if yes, to what extent?

Response *The DoE is responsible for granting groundwater licences. There is currently no groundwater management plan for the area. Based on the TTP investigation the groundwater source is located in a large groundwater flow system in which about 37 Gl/a (after allowance for environmental water requirements) is available (Rockwater 2004). The groundwater is allocated on a first-come, first-served basis and after allocating 4.5Gl, 32.5Gl is available for other users.*

6.2 Accommodation Village

Two hectares is proposed for a village to house 25 people. This is essentially a new settlement, and would require additional approvals at construction stage. However, the desirability of creating a new settlement, which will probably be rehabilitated in 20 years time, is questioned. Given the proposed plantation is 12 km south of Beagle Bay community, it is recommended that the proponent be required to locate the settlement adjacent to the existing Beagle Bay community:

This would deliver good sustainability outcomes in that:

a) The settlement could more efficiently connect to the existing infrastructure of the Beagle Bay community [power, water, sewerage] than if located at the plantation site;
b) Establishment of new housing and infrastructure upgrades close to Beagle Bay could provide much-needed amenity improvements and economic opportunities for residents; and
c) Accommodation and infrastructure associated with the village could be retained for community use at the end of the project.

Development of a new settlement would be wasteful and an inefficient use of existing infrastructure and resources. This is a key sustainability issue, but is also important symbolically for the joint venture. Connections should be made with the future development of Beagle Bay in a land use-planning framework that would site "like" land uses together for all people who have a reason to reside near Beagle Bay. On this basis, it is recommended that the proponent addresses some key land use matters prior to development stage. The DPI is happy to assist in this regard.

Response: *TTP considers that the existing infrastructure at Beagle Bay is limited and is in a very poor state of management and repair. Hence TTP sees no efficiencies in connecting to the services. There are also environmental health issues.*

For many reasons it is essential that the workforce be located on site, not the least of which include economic efficiencies and fire and other risk management.

Following closure of the project the Community Council will take over the infrastructure and facilities on the plantation site.

6.3 Road Access

The report suggests that over the life of the project some 2,700 loads will be carted to Broome via road trains. Clearly the existing road network is not capable of carrying this load and proposed upgrades to the road may not be sufficient to accommodate road trains. Not withstanding the capacity of the road, road train movements need to be carefully managed to ensure they do not adversely impact on the movement of residents, visitors and tourists that traverse the Cape Leveque Road.

Response: *TTP concurs with these comments. TTP, the DIA, the pearling and pastoral interests and the communities of the peninsula are collectively seeking the cooperation of the Shire of Broome and the Main Roads Western Australia (MRWA) in seeking the satisfactory upgrade of the Broome-Cape Leveque road.*

7.0 SUBMISSIONS FROM ENVIRONS KIMBERLEY INC.

7.1 Landclearing

The proposal requires greenfields clearing of 967ha of land that currently supports a healthy, natural pindan woodland ecosystem. Environs Kimberley has extreme misgivings about any proposal that requires broad scale landclearing and this one is no exception. The extensive clearing of native vegetation will most certainly lead to the degradation of the local ecosystem. This, and the fact that it is the first of its kind, indicates that the precautionary principle must be applied when considering the application.

Response: *It is anticipated that degradation to the adjacent local ecosystems from clearing will be minimal, and will not be greater than that experienced by the large-scale bush fires that are common on the Peninsula. The plantation is located on a very gradual slope with no waterways present; this will minimise the amount of erosion caused by clearing. Clearing will make the area more prone to weed invasion, particularly the *Passiflora foetida which is spread by birds. The weed management procedures listed in the EMS will prevent the establishment of weeds within the plantation plots.*

If the plantation is given the go ahead, the plantation design will be critical. Notwithstanding TTP's arguments in favour of the 'clustered' 9 x 100ha layout option, EK's preference for the plantation, should it proceed, is still for the 18 x 50ha 'checkerboard mosaic' design. While this option may be more expensive to develop and maintain, the habitat squares are likely to be more suitable for sustaining biodiversity. The PER argues that: "habitat squares are not connected by habitat corridors". It would seem to require a small adjustment to fix the problem and this should be investigated.

Response: *The clustered 9 x 100 ha layout is preferred for the some of following reasons:*

- *Requires least amount of clearing for access roads, firebreaks and services;*
- *More efficient plantation operations with the trees in close proximity, less time spent in travel between plots and less energy consumption;*
- *Reduced 'edge effects'; and*
- *Reticulating power, water and other services to separate cells would clearly be a major cost impost as well as being inefficient.*

7.2 Groundwater allocation:

The proposed allocation of 4.5Gl/a to the project from an aquifer that sustains a number of other uses and values, including providing the Beagle Bay community with drinking water and supporting an important wetland at nearby Bobby's Creek, is also cause for concern.

We have been advised that an extraction of 4.5Gl/a is likely to be the maximum amount allocable from the aquifer. This has already raised alarm bells with other potential users in the area, including some members of the Beagle Bay community and Traditional Owners from outlying 'outstation' communities since an extraction of this amount will leave little for other enterprises such as a community Gubinge plantation that has been mooted by some.

Response *The proposed allocation of 4.5 Gl/a is about the same as currently being used for the Broome town water supply. The DoE is responsible for groundwater allocation, and the Proponents are not aware of any statement that 4.5 Gl/a is likely to be the maximum volume to be allocated from the aquifer. The TTP study indicates that about 32.5 Gl/a after allowance for environmental water requirements and after allocation of 4.5 Gl to TTP is available (Rockwater 2004). DoE allocate groundwater on a first-in, first-served basis and this volume of groundwater is available to other users. Depending on the location where the water is required, strict monitoring and other requirements may be necessary. There are adequate water supplies for small community and pastoral water supplies.*

The Dampier Peninsula is under increasing pressure from industries as diverse as tourism, pearling, fishing, the proposed Woodside natural gas pipeline and processing plant, Iluka's proposed sand mining venture, not to mention existing cattle stations and the proposed tropical timber plantation. All these ventures will require water. A groundwater allocation plan for the entire Peninsula should be developed as soon as possible, not tied to specific project proposals, but done to ensure environmental, cultural and social values are not compromised by any business or industry development.

Response*: TTP concurs with these comments.*

The following comment about groundwater was previously submitted to Ecologia by EK in November 2004. It is repeated here to assist the EPA in its assessment of the project: It is stated in the report that, "the travel time for groundwater to move from the plantation area to Bobby Creek without pumpage is about 200 years and with pumpage, about 250 years in L1 and 290 years in L2" (pg24 Groundwater Assessment and Modeling). Given this slow rate of groundwater movement (10km in approximately 200 years), EK notes that the 12 monitoring bores, except for TTM 01, are not positioned in areas where a measure of the major ion and agro-chemical analysis could be ascertained in the near future. Rather it appears that it would take some decades before any meaningful data is obtained (See Figure 5 Groundwater Assessment and Modelling). Furthermore, in the event that the groundwater composition changes, it would be most unlikely that monitoring from the production bore at a depth of 221.3m will detect such data, particularly since the groundwater flows in a northerly direction away from the production bores (Figure 6 and Table 11 – Outline for Proposed Monitoring Program). Therefore, it is unclear how the proposed monitoring program would achieve its purpose of, "ensure[ing] early warning about any adverse effects and, if necessary, allow time to implement management solutions.' (p2 Groundwater Assessment and Modelling, Executive Summary). Environs Kimberley would suggest that additional monitoring bores be placed at much closer proximity to the plantation and at depths closer to the soil surface so that the groundwater can be effectively monitored for agro-chemicals and major ions within the first years of developing the plantation.

Response*: The water table is about 50 metres below the surface beneath the proposed plantation. There are also siltstones above the water table which will retard infiltration of any agrochemicals. Bore TTM01 near the centre of the plantation has a screened interval from 71.5 to 83.5 metres below surface and will be used to monitor agrochemicals from the commencement of operations, and at three yearly intervals.*

7.3 Flora and Fauna

The PER makes the flawed assumption that pindan vegetation in the region is homogenous, and we quote: "The pindan vegetation of the project area is widely occurring in the region and is not considered to be of particular conservation significance at the State, regional, or local level." Like all widely occurring vegetation types however, pindan woodlands will vary in response to factors such as distance from the coast, land gradients, depth of the water table and rainfall. The pindan woodlands of the Dampier Peninsula can therefore be expected to have significant variations in its vegetation. This is not reflected in the flora survey report.

Response: *It is acknowledged that there will be finescale variation within the site, and this is reflected in the flora report (Appendix B & C). However, the vegetation has been mapped at a project area scale which indicates there is little differentiation in the two primary strata, i.e. the upper and under storeys are dominated by the same species throughout the site.*

The project area lies on the slope into Bobby's Creek, in an area where the water table is relatively close to the surface. It is reasonable to suggest therefore that the project area may lie in an area of pindan woodlands of high conservation value, due to its relationship to the creek. Testing such a strong possibility should have been a primary aim of the vegetation survey carried out for the PER.

Response*: The depth to groundwater under the project area is 50 metres plus; this statement is not correct.*

We are concerned that no detailed surveys for rare flora species have been conducted in the project area.

Response*: Detailed rare flora surveys will be undertaken prior to clearing of the plantation plots, with species identified in the PER being specifically targeted.*

The fauna surveys conducted for the proponents are considered to be inadequate. Since there have been few previous fauna surveys in the region, a comprehensive study of the site was required. However data presented by Thompson et al. (2003) suggests this survey effort was unlikely to catch sufficient individuals to enable the compilation of a fauna species list for the project area. In fact Thompson goes on to say that: "the trapping effort is likely to have caught less than 60% of the species on site, if it was a relatively homogenous habitat, and less if it contained multiple biotopes."

We recommend that an appropriate comprehensive fauna assessment be undertaken and made subject to independent peer review. The revised PER should then be released for comment.

Response*: The adequacy of the fauna assessment has been discussed at length in Section 4. It is considered that any further work will not significantly add to the conclusions on conservation values or the assessment of potential impacts drawn from the original baseline survey.*

7.4 Conservation

The diverse pindan woodlands of the Dampier Peninsula are not represented in existing CALM conservation parks. The Point Coulomb Nature Reserve is the only CALM property on the

peninsula and this: "does not represent the diversity of the Dampier Peninsula; it includes sandplains with coordinated drainage that supports the shrubland and open woodland versions of "pindan" typical of near coastal areas at the southern end of the Peninsula." (Burbidge et al, 1991)

Three further areas have been identified and recommended for conservation to represent the vegetation of the northern part of the Peninsula. These are the proposed Borda Nature Reserve, proposed Cygnet Bay Nature Reserve, proposed Jowlaenga Nature Reserve and the proposed Dampierland National Park (see Map 6, Burbidge et al, 1991). Unless and until these and possibly other areas are reserved, the claim made in the PER that less than 0.001% of the Dampier Botanical District will be harmed is meaningless.

Response: *The statement that less than 0.001% of the Dampier Botanical District will be harmed refers to the percentage loss of vegetation attributed to clearing for the project. TTP acknowledges that there are other factors influencing the Dampier Peninsula, the most considerable of which is the impact on the native vegetation attributed to pastoralism. TTP believes that the flora and fauna is not adequately protected through the conservation system and would support further conservation and rehabilitation.*

TTP is willing to undertake in consultation with CALM suitable conservation offset initiatives that would assist in the protection of the Bobby's Creek spring system or other high conservation value wetlands in the region such as Bunda Bunda TEC. The initiatives could encompass fire control, feral animal control, weed management or further scientific research. The proposed offsets would form the basis of a Beagle Bay region wetland management programme formally approved by both CALM and DoE and financially committed to by TTP.

7.5 Closure and Rehabilitation plan

The primary objective of the closure plan should be the creation of a stable, near-natural, functioning ecosystem. It is not sufficient to indicate that the closure and rehabilitation plan will be determined through consultation with stakeholders. These discussions should have already taken place and the criteria outlined in this report. It is recommended that the closure plan be re-written and re-released for public comment.

Response: *The Project Closure Plan will be developed at least 24 months prior to the cessation of the project in consultation with all stakeholders and relevant regulatory agencies. The Closure Plan will be based on the guidelines set out in the Conceptual Closure Plan. The primary objective of the Closure Plan will be to create a "safe, stable and near-natural, self-sustaining, functional ecosystem in the area, with a strong focus on the creation of the near-natural, self-sustaining functional ecosystem." (See Section 4.2). Given that closure is 25 years distant, it would be ineffectual to devise a Closure Plan prior to construction. As stated in the Conceptual Closure Plan, the Project Closure Plan will be formulated in close consultation with stakeholders and regulators to ensure that the closure objectives are met regardless of the circumstances of the closure.*

We are also of the very strong opinion that a rehabilitation and closure bond should be paid prior to commencement of the project, similar to that required from mining companies. This should be calculated by the relevant state government authorities and should cover the cost of closure, decommissioning and rehabilitation of the project area in the event of the project running to plan, but also in the event of early closure of the project due to some unforeseen circumstances. It would be irresponsible of the State to run the risk of having to pay the cost of closure, decommissioning and rehabilitation of the area, and neither the Traditional Owners nor the Beagle Bay Community should have to live with a site that is effectively dead due to being inadequately or insufficiently rehabilitated.

Response: *Comment noted.*

The project's financial viability has been favourably assessed by a number of industry experts. In addition, the Aboriginal Lands Trust with the assistance of the Office of Aboriginal Economic Development, has appointed an independent expert to investigate the viability of the project as Trust approval for a new sub-lease is required.

In any event, TTP has already committed to a Closure Plan in the event of premature closure and at the end of the lease period. As stated in the PER, the Closure Plan will be developed as the project develops taking into account the changing nature of the landscape in respect to harvesting, methodologies, the final size of the venture and other variables. At this point a preliminary budget for potential remediation has been set aside in the Cost Plan.

7.6 Traditional Owner opposition

It is apparent that indigenous groups with an interest in the Beagle Bay Aboriginal Reserve are divided about the project. It also seems that there is no mechanism whereby all indigenous interests – i.e. Traditional Owners living on small excised landholdings or 'outstations' away from the main community as well as members of the Beagle Bay Community Inc. – can be taken into account. We understand that the Aboriginal Lands Trust owns the land in question, and that it is leased to the Beagle Bay Community 'for the use and benefit of Aboriginal people'. The Beagle Bay Community must apply to the ALT for any variation of this use. However, the views of Traditional Owners who are not members of the Beagle Bay Community Inc. are not taken into account via these arrangements.

Response: *Since the project was first put to BBC in 1999, there has been continuous and extensive consultation with the Beagle Bay Council, community members and outstation communities. It is incorrect to suggest that there is no mechanism whereby the views of traditional owners living on outstations within the Reserve can be taken into account. In the case of the plantation project, the Aboriginal Lands Trust, DIA and the BBC have, for example, required the proponents to formally consult with outstation representatives through the Land Steering Committee meetings, stakeholder and other general meetings. In addition to this, TTP representatives have visited many outstations on several occasions. A video presentation of the project was also produced by TTP and aired daily on Goolarri TV over a 3-month period. Appendix B contains the consultation table from the PER.*

We know that the impact of the project on the local area from land clearing will be total – i.e. everything currently living on or in the land will be destroyed. This is of particular concern to Traditional Owners, who conceptualise their roles, rights and responsibilities to land differently to 'westerners'. That is, Traditional Owners have rights in and are responsible for their 'country' – areas of land (and sea) – according to laws and customs that quite different from, and sometimes at odds with, the Western system of land tenure. Hence, the claim that the TTP project will require clearing of less than 0.001% of the Dampier Botanical District is meaningless in this context. Even the claim that only 0.26% of the Beagle Bay Aboriginal Reserve will be lost through clearing for the plantation is irrelevant.

Response: *To the best of TTP's knowledge, all indigenous groups effected by the development have been consulted and are satisfied with the level of clearing for the project.*

Traditional Owners we have spoken with maintain that the area of land to be cleared comprises a significant portion of their 'country', including good healthy stands of timber important for building and other materials. These same trees have flowers that are visited by native bees and are important in the production of sugarbag, or native honey, a much sought after staple of the local diet. If the area is cleared, the Traditional Owners will have a much diminished area of 'country' in which to hunt and gather. The project will also diminish the birthright of future generations of Traditional Owners. Further information about these and other matters should be sought from the Traditional Owners in questions.

Response: *Traditional owners and elders were informed by the elders of the Beagle Bay Comminity that the preferred species for building are the paperbarks (such as* Melaleuca dealbata*),* Corymbia polycarpa, Eucalyptus miniata *and* Canarium australe. *However, these species are not present on the proposed plantation site. The favoured species for making spears (for fishing) is* Acacia tumida.

TTP do not agree that native honey is a staple of the local diet.

7.7 Agricultural chemicals

The introduction of agricultural chemicals to a greenfields development is always a cause for concern. The introduction of fertilizers, herbicides, pesticides, fungicides and the like causes changes to the soil structure that can render it useless to native plant species, and make it difficult to rehabilitate, e.g. native species are adapted to the pindan soils and do not grow in soils that are high in nutrients.

On the subject of herbicides, we wish to draw the attention of the EPA to a new study into the impacts of Glyphosate (Roundup). This chemical has been found to be lethal to amphibians, even more toxic than 2, 4-D. Contrary to earlier findings, Professor Rick Pelyea (2005) found that it was not the added surfactant in Glyphosate that caused impacts on frogs and other amphibians but the Glyphosate itself.

Response: *In the Groundwater Licence Operating Strategy, agro-chemical analyses will be conducted on groundwater from TTM 01 in the plantation (85 m deep, static water level 51 m below surface, screened 71 to 83 m) and from a selected production bore (approximately 250 m deep, not yet drilled) and on groundwater samples from the*

Beagle Bay Community water-supply bores, and the three springs which are being monitored. Annual major ion analyses will be made on the six proposed production bores when constructed, and on the existing production bore TTP 01. This is consistent with the PER document Page 5 which states monitoring should ensure detection of any major changes in groundwater composition beneath the plantation site.

A soil monitoring programme will be undertaken prior to and following application of chemicals. Samples will be taken regularly, under the point of application and at defined distances from the application points. Samples will also be undertaken following heavy rainfall events. Details of the soil monitoring programme will be provided if required.

7.8 Climate Change:

The PER does not seek to address the issue of global climate change and how theses impacts might be felt in the local area. For example, it is fairly common knowledge that areas of northern Australia, including the Dampier Peninsula, will become hotter. What is not so well known perhaps is that while some areas of northern Australia will become wetter others, like the Dampier Peninsula, are more likely to become drier (CSIRO, 2001). This may have serious implications for anyone developing a water-dependent crop such as the tropical timber plantation.

Response: *As previously advised by Rockwater to Environs Kimberley, the proponents are comfortable that the water budget will cover this. It should be noted that the chosen tree crops are drought resistant.*

8.0 SUBMISSIONS FROM ENVIRONS KIMBERLEY PART II (DETAILED)

Executive Summary

8.1 Introduction:

It is claimed that a four hectare, four-year-old trial plantation of teak and sandalwood indicates that the venture is environmentally sustainable. We assert that the trial plot is too small and the trial too short for such a claim to be credible.

Response: *Comment noted; however the proponents disagree. The project's financial viability has been favourably assessed by a number of industry experts. In addition, the Aboriginal Lands Trust with the assistance of the Office of Aboriginal Economic Development, has appointed an independent expert to investigate the viability of the project, as Trust approval for a new sub-lease is required. The consultant's draft report is currently with the DIA / ALT, and it is understood that the Trust intends to share the final report with BBC Inc and other Aboriginal stakeholders. TTP is of the opinion that this information is commercially sensitive and confidential.*

8.2 Table S1: Summary of Key Characteristics Associated with the Proposal:

Why is Mahogany still referred to here, when we have previously been advised this will be dropped from the project? This needs to be clarified.

Response: *The PER and supporting documents were prepared prior to the decision made by TTP to not proceed with the growing of mahogany. This decision was verbally advised to EK some months ago.*

Why are there no details about Planting Densities and Planting Rates given for Australian Ebony and Gubinge? If these are no longer to be considered as part of the project then they should be dropped. If they are, full details should be provided.

Response: *The ebony and Gubinge are trial plantings only at this point and any decision on the potential commercialisation is premature at this early stage.*

Total estimated production – What is the estimated dollar value of 57,300 cubic metres of timber? How much teak? How much sandalwood? What is the value of each?

Response : *Total value of a 900 ha plantation is in excess of $450m The split would be 300 ha Teak and 600ha Sandalwood and Rosewood.*

Total yields are:	*Teak -*	*108,000 cubic metres*
	Sandalwood -	*6,000 tonnes*
	Rosewood -	*56,700 cubic metres*

Road Train Movements – What is the size of loads hauled to Broome – ie 2,700 loads by one, two or three trailers? Please provide details of tonnage to be hauled. How will this impact on the road? Will TTP contribute to the upkeep of the road?

Response : *Road train movements are proposed to be by truck with one trailer. TTP will not be contributing directly to upkeep of the road.*

With the strong likelihood of large oil and gas exploration and processing plants being developed on the Peninsula, along with increased tourism and housing developments, the plantation project will not be the major component in total vehicle movements. . No vehicle movement data of any value is collected by the Broome Shire or the MRD – the proponents have suggested that this information would be most useful.

8.3 Decommissioning and Rehabilitation:

The decommissioning, closure and rehabilitation plans must be produced at the beginning of the project. Rehabilitation needs to be monitored over a long period of time to ensure good steady growth and effective weed management. Post plantation landscape at closure should **not be** determined by the Beagle Bay Community but needs to be agreed at the outset by licensing agencies and relevant stakeholders.

Response : *As stated in the PER, TTP have committed to develop and implement a closure plan and have presented a Conceptual Closure Plan for the EPA's consideration.*

8.4 Soil Quality:

Concentration of nutrients and chemicals in the soil needs to be maintained at a level that needs more careful definition than 'appropriate'.

Response : *This will be redefined to say "Concentration of nutrients and chemicals in the soil maintained within 10% of pre-development levels."*

PART ONE: Project Background

8.5 Introduction (p1):

How has the 90%/10% split been determined? Does this reflect the investment contribution of the two parties? Does this reflect the profit share arrangement? Is the Beagle Bay Community satisfied with this arrangement?

Response : *The 90% / 10% split does not reflect the investment contribution of the parties – funding has only been provided by Capricorn Timber. This formula was developed by BBC's and CT's separate and independent financial advisors and mutually agreed.*

There are many references in general to R&D of local medicinal, bush tucker and timber crops but no details about what will be planted, how much, when and where, care of the plants, etc. Compare this with the detail provided for teak, sandalwood, etc and it seems the project is not seriously considering research on native plants. Details need to be provided here.

Response : *The principal focus of the project is to successfully cultivate and harvest the commercial tree crops. At this stage of the venture, local species are still being*

investigated and trialled. It should be borne in mind that very little is known in regard to the cultivation of many northern species.

The reference to native medicine and tucker plants also begs the question of intellectual copyright and ownership of traditional knowledge in this context. How is this being addressed?

***Response**:* *It is understood that neither State nor Federal legislation recognise or provide for traditional knowledge/intellectual copyright. Should commercialisation of certain native species materialise as part of the project, TTP would seek and support acknowledgement of indigenous plant rights.*

PROJECT JUSTIFICATION AND EVALUATION OF ALTERNATIVES

8.6 Project Justification (p8)

"The projected gross income for the project is $450 million over the lifespan of the project." It is not clear whether this refers to Stage 1 income or Stage 1 & Stage 2 incomes combined.

***Response**:* *Projected total revenue for Stage 1 of the project is $450 million.*

8.7 State/National and Local Community Benefits (p8)

One of the benefits of the projects is identified as "an increased level of conservation management on the Peninsula, especially in respect to fire". In the proponents' own words, the project area is a very small indeed – ie .001% of the Peninsula, hence the increased level of conservation management is limited to this block. We would also contend that improved fire management over the 5,000ha block is the ONLY environmental benefit of the project. If there are any others we would like the PER to make them explicit.

Response: *In addition to fire protection in the immediate vicinity, the Proponents envisage the following environmental benefits:*

- *Community education and training regarding fire prevention;*
- *Community education and training regarding rare and endangered flora, fauna and ecological communities;*
- *Ongoing biological research of the Bobby's Creek wetlands;*
- *Research in tree water requirements of tropical timber species;*
- *Ongoing research into the hydrogeological regime of the region; and*
- *Carbon sequestration.*

The PER needs to show plans for so-called downstream processing of logs, not just make the claim that such an enterprise will be supported.

***Response**:* *At this stage it is envisaged that logs would be processed to produce air-dried, sawn timber and chipped sandalwood. However this will be determined by factors such as the state of the market at harvest time, new technologies in milling and so on.*

The PER claims the venture will enhance the environmental status of the BBC. How will it do this?

***Response**:* *Preliminary discussions have been held with BBC regarding greater fire protection around the community and wetland areas in Bobby's creek, litter management and*

other issues but no formal plans have yet been put in place with either the Community or government agencies. TTP is committed to the development and implementation of these plans to BBC, DIA, FESA, CALM's requirements.

8.8 Need for the Proposal (p8)

The summary of enterprises to date fails to mention tourism, which has seen a huge increase on the Peninsula during the past decade. The Need for the Proposal fails to mention the aim of the proponents to derive a profit – surely one of the main motivating factors? Or is there some other reason for the project. This section mentions training and employment opportunities – but doesn't indicate to what level this will occur eg will members of the BBC be required for basic labouring only, or will the venture offer a career and skills training?

***Response**:* *Comment noted. The project's financial viability has been favourably assessed by a number of industry experts.*

It is TTP's desire that career and skills training programs are embodied in the project and close liaison is being maintained with training providers as the project develops.

8.9 Plantation Site Selection (p9)

While it is true that the site selected has become degraded due to frequent bushfires, this is also true for many parts of the Kimberley. Please provide more details about what makes the selected site special?

***Response**:* *There are no additional details that make the site "special."*

8.10 No Development Option (p9)

We do not agree with the claim that: "the potential to commercialise local bush tucker and medicinal plants will be lost" if the project doesn't go ahead. This could be achieved via other means and other projects. This should not be used as an argument for the project to go ahead.

***Response**:* *TTP will be in a position to pursue its research into native plants as the resources and infrastructures will be in place. Without this, TTP suggest that independent research would not be viable.*

8.11 Plantation Layout (p12)

Figure 3.1 shows the plantation layout in stage 2, ie 15 plots of 100 ha each . It does not provide information for the layout of stage 1. Two separate figures should be provided – one for stage 1 and another for stage 2. The borefield should also be indicated. Other figures are also titled: stage 2 expansion, but the figures do not indicate this. This discrepancy serves to confuse and makes it difficult to read the diagrams.

***Response**:* *Amended figures showing only Stage 1 including the proposed borefield layout are provided in Appendix A.*

There is also a discrepancy in the width of the wildlife corridors – some sections of the PER indicate 100m widths, others indicate 80m. Which is correct?

Response: *All figures have been amended to show corridors at the correct width of 80m (see Appendix A).*

Are habitat corridors the same as wildlife corridors?

Response: *Yes*

What is their optimal width? How has this been determined? Please provide details of studies. Is it intended to leave the corridors untouched - as native bushland, or is any clearing planned? Are they proposed to double as firebreaks, or where do firebreaks fit in – ie as part of the 80m or 100m corridors or in addition to these? What about tracks? Are these meant to be incorporated into the corridors, or will they be located separately, or perhaps as part of firebreaks?

Response: *Corridor sizes were based on discussions and information provided by CALM (Penny Hussey and Tim Willing) and the NT Parks and Wildlife Service. The internal 10 metre access tracks inside the plots act as firebreaks as do the two 4 metre wide tracks surrounding the composite plots (See Figure 3.3 in Appendix A). If back-burning is required, this will be undertaken from the fire side of the 40 metre corridor of retained vegetation surrounding the plantation. If it is deemed that the fire will breach the fire breaks, this corridor may be burnt to prevent the fire spreading into the plantation.*

The Checkerboard mosaic option is still of greatest interest and one that seems to provide the best option for ecosystem health and diversity. One of the objections to this design, apart from cost, is: "habitat squares are not connected by habitat corridors". It would seem to require a small adjustment to fix this problem. Why has this not been investigated?

Response: *The checkerboard mosaic option is not favoured although it was discussed at length with the proponent's consultants, DCLM, Ag WA, and FPC.*

The clustered 9 x 100 ha layout is preferred for the some of following reasons:

- *Requires least amount of clearing for access roads, firebreaks and services;*
- *More efficient plantation operations with the trees in close proximity, less time spent in travel between plots and less energy consumption;*
- *Reduced 'edge effects'; and*
- *Reticulating power, water and other services to separate cells would clearly be a major cost impost as well as being inefficient.*

Figure 3.2 is titled 'proposed stage 2 expansion, but the diagram is of stage 1 plots only (ie 900ha cleared). This needs to be corrected to avoid confusion. Suggest two figures are provided – for stage 1 and stage 2.

Response: *The title as shown is incorrect and is a typographic error and should read Stage 1 . Amended figures showing only Stage 1 are provided in Appendix A.*

What is the difference between bush corridors and wildlife corridors, as in Figure 3.3?

Response: *Confusing terminology is noted. The most appropriate term would be Habitat Corridors.*

Internal firebreaks are to be 10 metres wide. Where do these fit? ie around each 100ha plot, there are 100m or 80m wide wildlife/habitat corridors (depending on which part of the report you read), plus a 40m wide bush corridor, and a 4m wide firebreak.

Response: *See response above and refer to Figure 3.3 in Appendix A.*

Figures 3.4 and 3.5 are also incorrectly titled 'Stage 2' – they show only stage 1 plots. We need to be able to see the proposed Stage 1 clearly delineated.

Response: *The title of all maps as Stage 2 expansion was an oversight and should have been removed from all maps. Corrected maps are provided in Appendix A.*

The arguments against the checkerboard mosaic option (P 20) indicates there is a "requirement for a greater area of natural vegetation to be cleared than the 'clustered' layout". This is not explained and we are having difficulty understanding the reasoning behind this statement. Please provide details.

Response: *The clustered layout requires the least amount of clearing for access roads, fire breaks and services.*

Similarly, why should this layout result in a "greater risk of weed dispersal, spread of pathogens throughout the entire area"?

Response: *There is a greater boundary to area ratio which increases the risk of edge effects such as weed invasion to adjacent native vegetation.*

8.12 Plantation Operations (p20)

The section on planting indicates African mahogany will be planted. EK understand TTP were going to drop the use of this tree crop due to its shallow rooting habit and its susceptibility to being blown over during a cyclone.

Response: *Subsequent to the release of the PER, TTP have decided not to proceed with the growing of mahogany.*

8.13 Plantation Maintenance (p21)

We note the irrigation system will be powered by solar power and wish to commend the proponents on their choice. Similarly, we note that all prunings will be mulched on site, an excellent choice for green waste management.

Response: *Support for proposed strategies noted.*

8.14 Weed and Pest Control (p22)

There is new evidence that the use of Roundup (Glyphosate) is more harmful than it was first thought. EK can provide papers on the subject to TTP from time to time.

There are several references throughout the PER to the termite *Mastotermes darwiniensis* as a "pest". This belies the fact that it is a native species, evolved to thrive in a habitat from which it will soon be evicted by TTP if the project goes ahead. This indicates a lack of understanding of the value the insect has in the ecosystem to which it is perfectly suited.

Response: *Comment noted.*

8.15 Work Force (p23)

We were surprised to read that labour would be required for 6-8 hours daily. Does this mean that most of the workforce will be employed on a part-time basis only? Has this been negotiated with BBC? Are they in agreement? And for only 312 days per year. Does this mean they will not receive holiday pay? Are they to be employed on a casual basis then? Has this been agreed? There is a large amount of training required for the workforce. Is the Beagle Bay community aware of this requirement?

Response: *It is proposed that part-time, full-time and sub-contract work will be available to workers from Beagle Bay, outstations and other communities. Formal arrangements have not yet been concluded. TTP is liasing with the OAED to facilitate the resourcing of labour and training packages.*

8.16 Table 3.1 (p24)

Specific planting densities are given for exotic timbers, but not for native plants such as Ebony and Gubinge. Why is this? Why are they being treated differently if they are an integral part of the project? Where is the planting, care and maintenance information for theses species? Why is this not included?

Response: *As stated earlier, these native species are being trialled and the initial basic data we are collecting is being forwarded to the FPC and to the Broome TAFE. There are no established markets for timber or the fruit of these species and we are simply undertaking basic evaluation of growth rates, response to irrigation, fertilisation and general silviculture. Other species (eg: of potential medicinal value) are being identified with assistance from elders from Beagle Bay and other communities and propagation techniques are being developed. This basic research will be on-going as the proponents are largely starting from scratch.*

PART TWO: THE ENVIRONMENT

8.17 Groundwater

Saltwater Interface (p36)
If the drilling had to be stopped because of technical difficulties, why has there not been any further attempts to reach it? This would seem to be a critical piece of information to have. What plans are in place to get an actual reading, to know for sure?

Response: *The depth to the saltwater interface has not been demonstrated by drilling. The estimated depth to the saltwater interface is based on accepted hydraulic principles and is considered to be reliable. The water supply bores are about 10 km from the proposed production bores and local pumpage and the flowing artesian bore in Bobby's Creek will have more impact than the proposed pumpage. Further testing and modelling is not planned but a monitoring bore TTM04, about 150 m from the BBC production bores and 25 m deeper is being monitored by conducting 3-monthly conductivity profiles to determine any change in salinity.*

8.17.1 Aquifer Characteristics (p40)
What is the meaning of "the subcropping Broome aquifer"?

Response*:* *Subcropping means occurring immediately below another geological formation; in this case, Pindan or alluvial sediments.*

8.17.2 Saltwater Interface (p41)
"A saltwater wedge is inferred to underlie the area bordering Beagle Bay" – it seems there's a lot of theory and not much scientific data upon which to base the project.

Response*:* *From hydrogeological mapping undertaken by the Geological Survey and established hydrogeological principles, a saltwater wedge will occur in the aquifer around the coast. The depth is controlled by the hydraulic properties of the aquifer, elevations of water levels, the density of the groundwater and topography. It is not practicable or necessary from a risk management perspective to define the extent of the wedge for an investigation where the groundwater pumpage is located 10 to 12 km from Beagle Bay. Firstly, the wedge will be very deep, and any movement of the interface will be minimal as discussed in the hydrogeological study undertaken by Rockwater.*

8.17.3 Wetland Systems (p41)
Similarly, impacts of drawdown on springs in Bobby's Creek are also inferred – a lot of assumption and not much fact is provided. There is no data provided about how drawdown will impact on springs, especially in the long-term (assuming the modelling is correct and it takes 200-250 years for the water to travel through the aquifer). The PER simply asserts that the impact will not be detrimental.

Response: *The springs and Bobby's Creek are about 10 km from the proposed plantation. The groundwater modeling indicates that no drawdown from the pumpage will extend to Bobby's Creek and therefore there will be no impact on the springs. Similarly, the long travel time, dispersion, dilution, biodegradation, and breakdown of agrochemicals will minimise the likelihood of groundwater contamination.*

8.17.4 Monitoring data (p46)

Please explain the significance of results from bore TTM08 showing atypical results. Please also explain the impact of pumping on shallow groundwater levels.

Response: *The monitoring results from TTM 08 now follow the general pattern shown by the other bores. The atypical results may have resulted from an obstruction in the bore.*

8.18 Surface Water – Project Area (p46)

The hydrogeology of recharge in this area that is subject to sheet flooding needs to be properly described. How will drawdown impact on recharge systems?

Response: *The water table at the plantation site is 50 m below ground-surface. Bobby's Creek is 10 to 12 km to the north of the plantation site, and pumpage will be mainly concentrated toward the base of the aquifer. These factors, together with the influence of clayey alluvial marine sediments along Bobby's Creek are reasons for the assertion that no significant impacts will result from the potential lowering of the water table.*

8.19 Previous Floristic Surveys (P49)

In 2000 when Willing and Dureau carried out their Botanical Survey, they found no exotic or weeds species in the proposed project area. This will change rapidly as a result of land clearing and the introduction of plantation timber species. What has been the outcome in terms of weed invasion into the trial area?

Response: *The consultant's botanical survey revealed that at the time of the survey no exotic weeds were present in the project area.*

This will provide a guide to what will happen in the plantation area. How are weeds being monitored and treated in the trial area? We submit that a full weed management strategy be prepared prior to project approvals being granted.

Response: *TTP has committed to implementing its EMS at the commissioning stage of the project. A Weed Management Plan forms part of the EMS and is to be developed in consultation and to the requirements of CALM.*

8.20 Figure 5.8 (p51)

The terms 'wildlife corridor' and 'habitat corridor' seem to be used interchangeably throughout. Is this the case? Please select one and use it consistently throughout to avoid confusion. Please explain width of corridors – are they to be 80m or 100m? Please standardise throughout the PER to

avoid confusion. Please outline the work that was done to decide on the width. What research has been conducted to determine the optimum width for a habitat or wildlife corridor in the area? Is this optimum for native plant and vegetation species occurring in the area? Which species? Please provide details. Please provide Stage 1 figures only, indicating plots and species to be planted, e.g. Indications are that mahogany will not be planted. What will be planted instead? Please indicate on all plot maps where Gubinge and Ebony and other native species will be planted. Or, if entire plots of these species are not to be planted, please indicate this throughout the PER.

Response: *Corridor sizes were based on discussions and information provided by CALM (Penny Hussey and Tim Willing) and the NT Parks and Wildlife Service. The internal 10 metre access tracks inside the plots act as firebreaks as do the two 4 metre wide tracks surrounding the composite plots (See Figure 3.3 in Appendix A). If back-burning is required, this will be undertaken from the fire side of the 40 metre corridor of retained vegetation surrounding the plantation. If it is deemed that the fire will breach the fire breaks, this corridor may be burnt to prevent the fire spreading into the plantation.*

Plantings will be 1/3rd teak as to 2/3rd sandalwood and host plants.

8.21 Significant Ecological Communities (p54)

8.21.1 Regional Significance

While there is currently a proposal to create a Dampierland National Park, until such time as this occurs, the pindan vegetation system is poorly represented. Therefore, although the pindan vegetation type is abundant on the Peninsula, it is not well protected and could very easily become threatened.

Response: *Noted. TTP support the reservation of representative portions of the Pindan vegetation system within the conservation estate.*

8.21.2 Local Significance

If the project goes ahead, and 975ha of pindan woodlands are cleared, is there some possibility for restorative work to be applied over a similar area nearby? Can the relatively small and localised areas currently degraded by weeds – *Passiflora foetida* and *Parkinsonia aculeata* - and identified in the PER (page 72) be restored? Can TTP undertake to fund the maintenance of a healthy fire regime in the district as well?

Response: *Several species of introduced weeds (other than those referred to in the PER) occur in the lower reaches of Bobby's Creek, around the Beagle Bay community and nearby outstations and surrounding bushland, hence removal/weed management is of more regional importance. There are other issues as well – for example the Neem and other weedy species are favoured as shade trees in many outstations and communities right across the Peninsula. The proponents believe that this issue would be best coordinated by the Broome office of CALM in association with the Community Councils and outstations and linked to education and training plans.*

As referred to in previous responses, TTP will develop a fire management plan to CALM's requirements and with the input of the Kimberley Fire Management Program. It is proposed to discuss the wider fire protection of the Beagle Bay village and wetland areas with the BBC council and the above stakeholders and to develop a cooperative program.

8.22 Landuse & Tenure (p94)

We note that the current sub-lease arrangement between TTP and the Beagle Bay Community expires on 1st January 2006. We understand the 5,000ha/50 year lease option also expires at this time. Please confirm these lease arrangements. Please indicate the status of negotiations to extend the lease. What might get in the way of extending the lease? What might improve TTP's chances?

***Response**:* *The current lease and option expire on 1 January 2006. Negotiations and actions necessary to exercise the option are currently proceeding. It is TTP's intention to exercise the option during mid 2005.*

PART THREE: ENVIRONMENTAL IMPACTS AND MANAGEMENT

8.23 Predicted Impacts (p100)

8.23.1 Impacts from Clearing (p100)

Clearing of 967ha of healthy, intact native vegetation is proposed. What is the current economic benefit derived from this area of native vegetation in terms of native species collection for food, medicine, fuel and materials for building and making implements? What is the eco-tourism potential?

***Response**:* *There is no current economic or other benefit derived from the planned plantation land in respect to the collection of native species for building materials, food, medicine, etc. No collections are undertaken anywhere near the site. It is also understood that the dominant eucalypts on site (E. tectifica and C. dampieri) are not the preferred timber for building and other purposes.*

"Pindan vegetation of the project area is widely occurring in the region and is not considered to be of particular conservation significance …" This statement is challenged in terms of modern, landscape-scale conservation thinking. Also of concern is that none of this 'widely occurring pindan vegetation' has in fact been protected within any reserve created by CALM or any other agency or through any landscape-scale conservation effort. There is therefore no clear context for the statement.

***Response**:* *Definitions of local, regional and state significance are provided in the flora report, and based on these definitions, pindan vegetation does not qualify as being of significance. Furthermore, vegetation of conservation significance, as deemed by CALM, is listed as a Threatened Ecological Community.*

The Proponent acknowledges the lack of conservation of Pindan vegetation on the Peninsula, and supports the implementation of conservation schemes, such as the

Waterbank Structure Plan, which will significantly increase the level of Pindan vested in the State's conservation reserve.

"The impacts to vegetation through clearing will be minor." This statement is challenged since, clearly, the impacts to vegetation in the local area will be total – i.e. it will be completely destroyed. This is of particular concern to the Traditional Owners who conceptualise country differently. That is, Traditional Owners are responsible for their 'country' - areas of land (and sea) that are delineated by laws and rules that quite different from, and sometimes at odds with, the Western system of land tenure. Hence, the claim that the project will require <0.001% of the Dampier Botanical District is meaningless to Traditional Owners. Even the claim that only 0.26% of the Beagle Bay Aboriginal Reserve will be lost through clearing for the plantation is irrelevant. Traditional Owners we have spoken with maintain that the area of land to be cleared comprises a significant portion of their 'country', including good healthy stands of timber important for building and other materials. These same trees have flowers important for the native bees that produce sugarbag, or the native honey, a much sought after staple of the local diet.

Response: *Since the project was first put to BBC in 1999, there has been continuous and extensive consultation with the Beagle Bay Council, community members and outstation communities. In the case of the plantation project, the Aboriginal Lands Trust, DIA and the BBC have, for example, required the proponents to formally consult with outstation representatives through the Land Steering Committee meetings, stakeholder and other general meetings. During this six year period there have been no comments to the stakeholders stating that which has been provided to the Conservation Council. The Proponents welcome these individuals to state their concerns either directly to TTP, or via the DIA.*

8.23.2 Impacts from Weeds (p100)

Has a weed survey of the trial area been carried out recently – ie in the past few months? If so, what was the result? If not, this should be done as soon as possible and the results made public as part of this PER. It is well known that disturbed land is especially susceptible to becoming weedy, especially when those weeds spread by birds. It is therefore very likely that weeds will spread to the proposed project area and the statement on p101 is challenged.

Response: *Weed surveys are carried out at least monthly and more frequently in the wet season. Where plants are developing seed, they are physically removed otherwise they are sprayed with Roundup. The greatest threat of weed invasion is by the Stinking Passion Vine (*Passiflora foetida), which will be particularly targeted during weed surveys and management. The likelihood of weed invasion is significantly reduced following establishment of the plantation.*

8.23.3 Impacts from Groundwater Changes (p101)

The claim that "there are no significant impacts expected from the potential lowering of the water table …" is challenged. It is an unsubstantiated claim.

Response: *No significant impacts are expected because modelling has shown that lowering of the water table will be mainly restricted to the lease area and no drawdown will*

occur along Bobby Creek. A network of monitoring bores has been established to check the modelling results and ensure the effects of the pumpage are managed.

The only location where there may be an impact, if any, is in the groundwater dependent ecosystems to the north of the plantation. The vegetation monitoring programme has been designed to determine any impacts on these communities within the early stages of change. If these occur, then remedial actions will be implemented, as outlined in the GLOS.

8.24 Predicted Outcome (p102)

"a proportion of the natural understorey will be allowed to regenerate within the plantation plots." Since conditions will be entirely different, ie light, nutrients, water, etc, it is unlikely that the understorey will regenerate. Perhaps some native species will become re-established but it will in no way resemble the existing assemblage of plant and animal species.

***Response**:* *Both the flora and fauna surveys indicated that native species recolonise the plantation plots. The most densely planted plot will be the teak plot, in which each tree will cover and area of 10 m^2. It is anticipated that this does not deviate significantly from natural tree density within the Peninsula, and therefore it is realistic to assume that most grasses and low shrub species (but not tree species) will recolonise the area, similar to that following a fire. The Proponents admit that a number of arboreal species are unlikely to recolonise the plots and nutrient levels may also influence recolonisation.*

Commitment 1: The TTP Weed management plan needs to be developed prior to approvals being given – ie as part of approvals process.

*Response**:*** *TTP agree to develop a Weed Management Plan in consultation with and agreed to by CALM prior to project development.*

8.25 Management (p105)

"25 vegetation quadrats will be permanently marked and monitored annually." Where are these? Is this sufficient? How were their locations decided upon?

***Response**:* *Vegetation quadrats and transects will be established in the Bobby's creek wetland complex. This number ensures that the results of the monitoring will be statistically viable. The location of the quadrats and transects have yet to be determined, but will be established in those areas that are likely to show effects from water drawdown (if any) at the earliest time possible.*

8.26 Predicted Impacts (p107)

The Priority Flora Management and Conservation Plan should be devised at the outset and be considered as part of the approvals process. It is not sufficient to develop such a plan only once Priority flora species have been recorded.

Response: *Until Priority flora species are recorded and the exact species, the location of the populations, extent of local and regional populations are known it is not possible to formulate a meaningful plan.*

8.27 Management (p107)

"Measures to limit the extent of clearing of native vegetation will be implemented." What are these measures to be? Please provide details.

Response: *No clearing other than that required for the plantation project will be permitted. This will be the direct responsibility of the Project Manager and supervisory staff overseeing the civil engineering components of the works.*

8.28 Plantation Practices: Indirect loss of fauna and fauna habitat (p110)

There should be a ban on the introduction of Felis catus, and where such feral animals are found they should be captured and destroyed. This should be an explicit part of the plan to manage feral animals. The aim should be to reduce the number of feral predators, not just to ensure their numbers don't increase.

Response: *TTP commits to implementation a feral animal control programme to reduce the number of feral animals in the vicinity of the plantation site and its hinterland.*

8.29 Invertebrate Pests (native termites): Influence on the dynamics of local population (p110)

While Mastotermes darwiniensis is identified as a 'pest' to the proposed timber industry, it is in fact a fauna that is native to the region and should be considered as such in this PER. For instance, how much is known or understood about the role played by this animal in the natural environment of the area? What ecosystem services does it deliver? What impact will a reduction in its population have? These studies should all be undertaken before a decision is made to eradicate them or limit their numbers.

Response: *Control of Mastotermes darwiniensis will only occur on the plantation lots and will seek to prevent recolonisation of the cleared plantation lots once developed for the plantation timbers. No control of the species will be taken in uncleared native vegetation areas. Therefore the dynamics of the species in these areas will remain unchanged. The method of control will be through aggregation of the species in confined bating stations. Pesticides would be applied to the pests in these confined bating stations.*

8.30 Management (p110)

Are the habitat corridors large enough to "facilitate the maintenance of local flora and fauna populations"? Please provide evidence of studies that indicate this is the case.

Response: *Corridor sizes were based on advice from CALM and the Northern Territory Parks and Wildlife Authority in relation to savannah woodlands.*

"Where practicable, clearing will be undertaken outside the main breeding season for birds and mammals." What will happen where this is not practicable? Will clearing proceed regardless? This is too vague.

Response: *It is proposed to undertake land clearing during the wet season when the ground is more easily worked. As a general rule the majority of birds breed before the wet. If it is necessary to clear land outside of the wet season, than advice from CALM will be sought.*

8.31 Predicted Outcome (p111)

"there will be limited loss of fauna habitat and associated direct impacts …" What exactly is meant by this? Please provide quantifiable information. "these impacts will be minimised by appropriate management." Please provide details of appropriate management. Is there a plan?

Response: *The Proponents acknowledge that there will be loss of native fauna; however limited loss refers to the fact that all available measures will be implemented to reduce fauna loss during the construction and operations phase. Management items are provided in the Project EMS and the PER, for example: clearing is to be staged and limited to that which is necessary, the retention of habitat corridors, feral animal control (including a ban on the introduction of pets) and eduction programs.*

8.32 Control of Clearing Activities

"The clearing for access tracks to the site will avoid large trees and shrubs…" Good!

Response: *Support noted.*

8.33 Management (p115)

General

"The use of fire to dispose of cleared vegetation, and for other uses, will be prohibited." Good!

Response: *Support noted.*

"The size of plantation plots will comply with *Guidelines for Plantation Fire Protection* (FESA, 2001) and will not exceed 100ha." Is this plot size stipulated or recommended by FESA in the Guidelines? Is this why the plots are 100ha?

Response: *FESA recommends plot sizes of up to 100 ha "depending on prevailing conditions such as local climate, terrain, topography and proximity to local development" (FESA 2001: 6). These guidelines are based on south-west plantations, and FESA advises that revised guidelines will be released shortly. Ralph Smith at FESA recommends plot size to be the maximum that the Proponents are willing to lose in a fire.*

8.33.1 Predicted Outcome (p117)

Commitment 7: Has the Bushfire Management Plan been produced by TTP? Please provide a copy if this has not already been done.

Response: *TTP has committed to finalise the Bushfire Management Plan in association with CALM, prior to development commencing.*

8.33.2 Predicted Outcome (p121)

Commitment 8: Please specify to whom TTP will report its findings, how often, what action will be taken if any problems are encountered, etc.

Response: *DoE, annual reporting (submitted in August each year). Corrective actions will be determined in consultation with DoE and any relevant decision making authority.*

8.33.3 Potential Impacts (p122)

Data will be established to accurately estimate the carbon storage capacity of the plantation in comparison with the natural Pindan vegetation. This is a good initiative.

"Full CAM assessment is proposed to be undertaken …" Good!

Response: *Support noted.*

8.34 Predicted Outcomes (p124)

There is no evidence that the PER has considered the effects of global climate change on the area and on the project. This is in spite of CSIRO modelling indicating an increase in temperature and a decline in rainfall in the Dampier Peninsula during the next 30 years. This information needs to be included in the PER as it could have significant impacts on the water availability and water use associated with the project.

Response: *The current natural swings in the southern Monsoon are greater than those predicted by CSIRO. It is agreed that there may be less rainfall over the next 50 years however the plantation water use is less than 10% of annual recharge. The existing climate in the region is highly variable. The effects of climate change superimposed on an already highly variable climate have not been considered because of doubts about the climate models (e.g. global dimming) and other new data requiring alteration to the models used in the CSIRO 2001 study.*

8.35 Potential Impacts (p125)

"local native species to be cultivated …" No details are provided anywhere about the growing of native species as crops, and it is understood no research and development is planned by TTP for this aspect of the project. This reference should be removed as inaccurate and misleading, or should be replaced with the complete story.

Response: *It is proposed to identify local species for possible cultivation with the assistance of the Beagle Bay Community Inc. and allowance is included in the cashflows.*

The area will never "provide similar visual amenity to surrounding native vegetation." This reference should be removed as inaccurate and misleading.

Response: *It is considered by the Proponents that the plantation will provide considerable visual amenity and numerous visitors are anticipated. The presence of water is also attracting a substantial increase in variety and numbers of birds and reptiles.*

8.36 Predicted Impacts (p125)

"The area to be affected by the project is remote …" How is this relevant? Remoteness is a relative concept – remoteness from what and whom? This should be explained or removed.

Response: *The proponent acknowledges that "remote" is a relative term. The plantation is not visible from the only main access track on the peninsula, and is in an area not subject to high, or even moderate, levels of traffic, and consequently may be reasoned to be remote. It is not remote to the local residents of the area; however, these residents have been consulted during the PER process and deem it to be acceptable.*

(p126)
"a visual buffer…" What size will this visual buffer be? Will it be viable for native flora and fauna?

Response: *Figures 3.1, 3.3 to 3.5, 5.1 to 5.3, 5.6, 5.8, 5.12, 6.1 and 11.1 (see Appendix A) show the size and location of the buffer.*

8.37 Decommissioning and Rehabilitation (p127)

8.37.1 Planning
"Closure plans…" These must be prepared prior to commencement of project and should be considered as part of approvals process.

Response: *The Project Closure Plan will be written within 24 months of cessation of the project based on the guidelines set out in the conceptual closure plan. The primary objective of the closure plan will be to create a "safe, stable and near-natural, self-sustaining, functional ecosystem in the area, with a strong focus on the creation of the near-natural, self-sustaining functional ecosystem." (See Section 2.2). Given that closure is 25 years distant, it would be ineffectual to devise a closure plan prior to construction. As stated in the Conceptual Closure Plan, the Project Closure Plan will be formulated in close consultation with stakeholders and regulators to ensure that the closure objectives are met regardless of the circumstances of the closure.*

8.37.2 Financial provision
"A cost estimate…" A bond should be paid, similar to that required by mining companies, should be paid prior to commencement of the project. This should be calculated to cover the cost of closure, decommissioning and rehabilitation of the project area in the event of the project running to plan, and also in the event of early closure of the project due to some unforeseen circumstances. The State should not run the risk of having to pay the cost of closure, decommissioning and

rehabilitation of the area, and the community should not be expected to live with an area that is inadequately or insufficiently rehabilitated.

Response: *The proponents are not aware as to how and why the State would run the risk stated above – what other precedents are there that can be referred to the proponents? As stated in the PER, TTP have committed to develop and implement a closure plan and have presented a Conceptual Closure Plan for the EPA's consideration.In addition the Sub-lease agreement, TTP is committed to decommissioning and rehabilitation programme.*

8.37.3 Predicted Outcome (p129)

Commitment 9: A detailed Closure Plan must be developed prior to commencement of the project. It should be considered as part of the approvals process. A bond should be paid at the outset to "accommodate potential project failure."

Response: *As stated in the PER, TTP have committed to develop and implement a closure plan and have presented a Conceptual Closure Plan for the EPA's consideration.*

8.38 Surface Water Quality - Potential Impacts (p130)

"Fertilisers and pesticides … are not expected to have any significant impact on surface water quality in the area." Have the proponents considered what will happen during extreme weather events? What contingencies are in place in such circumstance?

Response: *Fertilisers are applied through dibbling (sub-surface injection of slow release fertiliser) or liquid feeding. Also, applications are made outside the peak of the wet season so that surface water quality is unaffected and the fertiliser remains within the plants root capture zone. To date (over the past 4 years) no pesticides have been applied to the foliage of plants. Termite baiting stations are located in drums buried beneath the surface. Herbicides are not applied on wet days as the effect may be lost.*

8.38.1 Management (p131)

"Sampling of surface water runoff…" What action will follow in the event of serious fertiliser and pesticide content in the surface water runoff? Will the Beagle Bay Community be alerted? What will the procedure be? Will DoE be advised? What will the cleanup procedures be?

Response: *The soils of the overall locality are porous sandy clays and the ground is almost flat. There are no rivers, streams or other surface water runoff potentials other than un-drained access roads. The access tracks around the plots will have drains to prevent potential localised erosion. The level of fertilisation relative to other crops such as curcurbits is minimal. In the event of a major fertiliser, fuel or pesticide spill, DoE, BBC and other relevant parties would be notified and clean-up procedures undertaken in accord with the EMS.*

8.38.2 Predicted Impacts (p132)

"chemicals…" Will any of the chemicals used in the project be applied via aerial spraying? If so, which ones? Please provide information about spray drift if this is found to be a factor.

"glyphosate…" New information has recently come to hand about the problems associated with applying glyphosate. This is available via website searches, or by contacting Maria Mann at Environs Kimberley.

Response: *No aerial spraying is proposed. There are no wetland areas near the site – they are located several kilometres away so spraying of herbicides such as Roundup to weeds or regrowth will not have any effect.*

8.38.3 Predicted Impacts (p135)

Mulching, composting, chipping and recycling of green waste and timber is to be commended. But surely so-called "waste timber" could be put to better use? It is, after all used as a building material in Broome and in communities on the Dampier Peninsula.

Response: *Prior to and following the clearing of the trial site, whole logs and firewood were offered to people on the peninsula and in Broome - regrettably there were no takers. However TTP would be happy to advertise the availability of logs prior to clearing for Stage 1. Drawbacks with the local species are that the heartwood is often piped-out by termites and straight, long boles are a rarity.*

"A large proportion of the workforce is expected to be based at Beagle Bay Community…" This seems to be at odds with plans for accommodation for a total workforce of 25. Please clear up discrepancies in the PER.

Response: *The site will accommodate up to 25 persons. The project is a staged development. Like all staged projects the workforce will vary with peak numbers occurring during the development phases. In these phases more workers, consultants and contractors will be required but will not all be housed on site. It has not yet been determined how many staff will be sourced from the community, as this will be determined by the number that is actually willing to work. A fair opportunity will be made available to the locals to participate and work, but TTP cannot be accounted for the lack of positive response from the community and outstations.*

8.38.4 Predicted Impacts (p137)

"It is possible that native fauna will become accustomed to persistent noise…" This statement is not backed up with any evidence. It should either be substantiated or removed as otherwise it could be misleading.

Response: *The statement was based on consultants' observations over more than ten years of survey work. Two points in case: populations of ghost bats and orange leaf nosed bats have been observed in the Pilbara nesting in a cave less than 200 m from an active haul road (carrying haul trucks at a frequency of one every 15 minutes) and with regular blasting occurring less than one kilometre away; a persistant*

population of Rothschild's rock-wallabies occur within the Mt Whaleback minesite, which is surrounded on all four sides by mining activities.

8.39 Implications of potential future development to Stage 2 (p146)

Table 11.1: Key Characteristics Table for expansion to 1500ha plantation (p147)

Mahogany is still mentioned in the Species to be Cultivated and Planting Densities. Please clarify whether this species is to be grown or not?

Response: *Mahogany will not be grown.*

Australian Ebony and Gubinge are also mentioned in the Species to be Cultivated, but planting densities are not provided. Please clarify exactly what the plans are for these native species.

Response: *Ebony and Gubinge are still in the trial stage, and as such no definite plans have yet been devised.*

Please provide an estimated dollar value for the estimated production of timber.

Response: *Total value of the harvest crop is anticipated to be in the region of $450m.*

The Project Life Span and Anticipated Year of Project Closure is the same for Stage 2 as for Stage 1. How could this be so? Surely, the life of the project would be expected to be extended by at least two years, to 2027, if it goes to Stage 2?

Response: *Correct – this is a mistake on the Proponents behalf.*

Road Train Movements is the same for Stage 2 as it was for Stage1: ie 2700 loads hauled to Broome. Surely this would be increased with an increase of around 60% in the amount of timber produced (ie total estimated production is up from 57,300 cubic metres to 95,500 cubic metres)?

Response: *The estimated production of 57,300 cubic metres for Stage 1 is indeed a typing error. The correct estimated yields are likely to be in the region of 170,000 cubic metres. This however, would be staged between years 8 to years 20 and the exact road train movements would need to be evaluated closer to the time of production. As a result of this staged release into the market, the number of road trains are likely to remain around the 2700 mark, as previously stated. In addition, it is anticipated that in light of other new emerging activities (Woodside, Iluka etc), TTP may have alternative solutions for the transportation of timber.*

The workforce too is the same as for Stage 1: 25. Would this not be expected to increase in Stage 2? How many people would be expected to be employed?

Response: *Workforce numbers will not vary much between Stages 1 and 2 as the project is staged.*

8.40 DCALM letter dated 29 April 2004

"…the Department has concerns regarding the limited timeframes in which the flora surveys were conducted…" This peer review recommended another flora survey be conducted at the onset of the wet season, in November, in order to pick up on a suite of species that were likely to have been missed from earlier surveys. What plans does TTP have to conduct another flora survey as per these recommendations?

Response: *TTP commits to undertaking a further detailed flora survey of the plantation area at the onset of a wet season as per CALM's recommendation.*

9.0 SUBMISSIONS FROM THE CONSERVATION COUNCIL OF WA

Recommendation: The EPA should recommend that this proposal be rejected because it is located in a "greenfields" area and the risks of environmental damage far outweigh the alleged benefits.

The flora survey report acknowledges that the vegetation of the proposed site is pristine Pindan woodland (Flora Assessment Survey, Appendix C), with no diseases or weeds (p. 57)

It is totally unacceptable to destroy 967 ha of healthy, intact, pristine vegetation, let along 1,600 ha for a speculative tree plantation venture, especially in the absence of a comprehensive adequate and representative conservation reserve of the vegetation types. Currently only 0.57 % of Pindan woodland is protected in the formal conservation reserve (Discussion Paper for the Biodiversity Conservation Strategy, December 2004, p 39).

Response: *Based on 0.57 %, over 48,000 km^2 of the Pindanland IBRA subregion is vested in the State's conservation estate (Discussion Paper for the Biodiversity Conservation Strategy, December 2004, p 39). The plantation will clear less than 10 square kilometres, which is less than 0.001 % of the area covered by the Pindanland IBRA subregion, and is relatively small in comparison. Please also note that the Proponents support all measures taken by governing bodies to increase the amount of area in conservation reserves within this subregion.*

Furthermore, the PER and supporting documentation fail utterly to provide substantiation for the claim that the venture is "economically viable and environmentally sustainable" (pp.xi, 1,11).

Response: *The financial models for a 900ha project show total costs of $170M and total revenue of $450M. The models have been reviewed by financial experts and the venture is considered highly viable.*

CONCERNS

9.1 Uncertainties

a) The PER is poor. It is repetitive and inconsistent. Most worryingly, it shifts from 900 ha proposal to a 1,500 ha proposal, sometimes without changing the figures. For example, the workforce for a 900 ha plantation is said to be 25, the project life span 20 years and the anticipated year of project closure 2025 (p.xii) exactly the same figures for a 1,500 ha plantation (p. 147). The PER says that 9 X 100 ha plots will be arranged as depicted in Figure 3.1 (p.12), but Figure 3.1 depicts 15 plots of 100 ha, ie 1,500 ha (p. 15).

Response: *Amended figures showing only Stage 1 are able to be provided to the EPA and all stakeholders if required.*

Is the proponent proposing a 900 ha plantation or a 1,500 ha plantation?

Clearly the proponent wants to plant 1,500 ha, preferable without further environmental assessment. Eventually it may want to plant 5,000 ha as it seeks a lease for that area for 50 years

(p. 1). The uncertainty about what is being assessed leaves a bad impression and raises serious doubts about the proposal.

Response: *The current approval sought by TTP for the project is for 900 ha and 4.5GL. TTP have made it clear that subsequent to suitable investigations, research and development of the 900ha Stage 1 it may seek further approval from the State for development up to a 1500ha and 7.1 GL project.*

b) The PER abounds in speculatative language, all aimed at putting a positive spin on the proposal. While frank admissions of ignorance appear (" the seasonal variation in the water table is not known". P. 35; "…..the actual groundwater dependency status of this vegetation type in the survey area is not known", p.69), more often the words used are conjectural. The word "may" occurs repeatedly as do "likely", and "unlikely". The regular use of words like "anticipated", "presumed", "inferred", "estimated", "considered", "believed", "deemed", "expected" shows that **much of what the PER says is at best speculation, at worst wishful thinking.**

Response: *The first basic principal of scientific investigation is that you cannot prove a fact; you can only disprove a fact. The use of the aforementioned words is standard in scientific publications and does not suggest ignorance on the subject.*

Of significance is the change in wording between the Flora Assessment Survey and the PER. where the former says, "the trial plantation **suggests** that the venture is both economically viable and environmentally sustainable" (p. 1), the PER says, "the trial plantation **indicates** that the venture is both economically viable and environmentally sustainable" (pp. xi,1). There has been a deliberate shift from uncertainty that is not justified by the documentation.

c) Information about the trial plots, the species trialled and the dates they were planted is not clear. The PER says that the joint venture entered into an agreement to establish a tropical timber plantation of Teak, Indian Rosewood, Indian Sandalwood and African Mahogany (p. xi). It says that in 2001, a four-hectare trial plan of Teak and Indian Sandalwood was established (p. xi). Then we are given the tree density for four species: African Mahogany, Teak, Sandalwood and Rosewood. However, on p. 4 the PER says that in 2001 a trial plantation of three hectares of Indian Sandalwood was established between February and April 2002, a 0.4 hectare trial plot of teak was planted. This amounts to 3.4 ha, not 4 ha.

Response: *The total area planted to teak, sandalwood and hosts is 3.4ha.*

African Mahogany is mentioned in several places (pp. xi, xii, 1, 11, 51, 146), including the plantation development plan (p. 15, but there have been no trials of this species. **Is it intended to plant African Mahogany or not?**

Response: *Subsequent to the publication of the documents, TTP has decided at this stage not to plant African mahogany unless superior plant material can be located and successfully trialled.*

Given that the trials are the basis upon which the confident assertion that the venture "is both economically viable and environmentally sustainable" is made, we have the right to expect that full and correct details would be provided. They are not.

Response: *Comment noted; however the proponents disagree. The project's financial viability has been favourably assessed by a number of industry experts. In addition, the Aboriginal Lands Trust with the assistance of the Office of Aboriginal Economic Development, has appointed an independent expert to investigate the viability of the project, as Trust approval for a new sub-lease is required. The proponents have provided details to the joint venture partners and this is currently being independently assessed. This information is strictly confidential.*

9.2 Corporate Issues

a) The legal set-up and expertise of the proponent are relevant to the environmental assessment, because without stability, adequate resources and expertise, the environmental commitments are unlikely to be met. The company would collapse, leaving a legacy of irreparable environmental damage and no resources to repair reparable damage.

A company search reveals that the major partner in the joint venture, Capricorn Timber Pty Ltd (CT) is a very recently formed company, dating only from May 2000. Its director, secretary and only shareholder is Mr Naresh Patel. Its paid-up capital appears to be $1.

There is no indication that the company or its director has any experience in timber plantations in Australia or anywhere else.

The corporate structure of CT and its lack of expertise do not engender confidence in its ability to conduct an environmentally, socially or economically successful operation.

b) The legal structure behind the proposal is unclear. A company search revealed that Tropical Timber Plantations Pty Ltd (TTP) was registered only in May 2002 and is comprised of two entities, CT with nine of ten shares, and Burrunk Association, ' Beagle Bay Association', with own share. Yet the PER names Beagle Bay Community Inc. as the joint venturer with CT 9p. xi).

Response: *The legal structure and relationships between the parties is as described by Talbot and Oliver (Barristers and Solicitors – representing the Beagle Bay Community) is detailed on page 1 of the PER document under the heading 1. Introduction 1.1 Background. Talbot and Olivier were appointed by the Office of Aboriginal Economic Development to provide assistance to the BBC. In addition the OAED and ALT/DIA have employed an expert consultant to review the project on their behalf.*

TTP's management structure will include the Board of Directors, managing director and senior managers in the divisions of environment and safety, silviculture, irrigation, development and overall plantation management.

The current consultant team includes the following –

Environmental	*Ecologia Pty Ltd*
Hydrogeology	*Rockwater Pty Ltd*
Project Management	*John Brennan Associates*
Survey/Mapping	*Whelans Pty Ltd/Sicad*
Irrigation	*Toro Australia*

Plant Propagation	*Benara Nurseries/Sunglow Pty Ltd*
Silviculture	*Prof. M Dasthagir – Tamil Nadu University/ Lincfel PtyLtd*
Plant Nutrition	*Scotts Australia Pty Ltd*
Chemistry	*SGS Australia Pty Ltd*
Pathology/Entomology	*Agriculture WA/ Department of Business, Industry and Resource Development, NT Government*
Research and Development	*CSIRO Forestry and Forest Products WA*
Marketing	*Sitra Holdings (International) Pte Ltd*
Solicitors	*Blakiston Crabb*

Through what legal entity are the Aboriginal groups and individuals participating in the project?

The PER says that TTP is trustee for and on behalf of Tropical Timber Plantation Unit Trust and the unit holders in the Unit Trust are CT as to 90 % and BBC as to 10 % (p. 1). There is a Deed creating the trust, and a Unitholders Agreement (also known as Joint Venture Agreement). TTP conducts the legal operations of the joint venture as trustee for the trust (p. 1).

What is the legal relationship between all these parties? Who will protect the interests of the Aboriginal groups and individuals?

Response: *Please refer to response 9.2b in part. The Government of WA provides for interest in the Beagle Bay Community by way of the ALT as the vesting authority over the Reserve land in question and the DIA and other State and Federal government agencies. The Beagle Bay Community has an elected Council and has an organisation, Burrdunk, to deal with commercial matters.*

9.3 Ethical Issues

what is CT telling or not telling the Aboriginal community and people, the Aboriginal Lands Trust, the Department of Indigenous Affairs, the corporate watchdogs and the EPA?

There is no information on what BBC has contributed, is contributing, or what it is likely to receive from the project- just vague assertions.

Response: *The trial project has been totally funded by Capricorn Timber. BBC has not had the resources or support to take part financially in the trial and was not expected to do so. Negotiations are in place to exercise the lease option. In these negotiations, rental/royalty payments will be negotiated with BBC and Burrdunk and will also be subject to review by government. The insinuation of "vague assertions" is demeaning to BBC and Burrdunk and the agencies working on their behalf. The Conservation Council has been consulted on the project from the outset, has inspected the site and has had the opportunity to direct questions to all parties including the proponents, (inc BBC), the project consultants, etc, but until now has chosen not to.*

The figure for employment is questionable (the same number for 900 ha as for 1,500 ha), and the information on employment shows that the workforce will come from Broome as well as Beagle Bay (pp. 23, 109). While they could be housed on site, they could also drive from Broome pr Beagle Bay, so why is accommodation for 25 people required on site (pp. 12, 147) if some or all of the workforce live in Broome or Beagle Bay?

Response: *As stated earlier, the project is staged so that additional workers are required in the development phases - for example significantly increased worker participation is necessary for plant re-potting, planting-out, irrigation installation, fertilisation etc.*

An alleged benefit of the project is to provide training and employment for the local Aboriginal people (p. 9). The Environmental Management System Manual (EMSM) shows that a high level of training and competency is required of the workforce (for example, EMSM, p.16). has the community been advised of these requirements?

Response: *Although the workforce to establish and maintain the trial plantings over the past years has been small, local and outstation people have been employed and have received training from TTP. TTP has requested that state and federal agencies provide training platforms when the project commences, and TTP will be a willing participant through its team of experts. The BBC, Broome TAFE, and other state and federal agencies in the training arena are totally familiar with the project and of the potentials for regional employment and training. All of this information is readily available from all of the participants.*

While these issues are not directly related to environment, if CT and TTP are not completely open and transparent with these entities and people, the **alleged benefits of the project for the Aboriginal community and people may not materialise.**

The PER says that as part of the project, local medicinal, bush tucker and potential timber crops are to be developed and researched (p.1), yet apart from vague statements about trail plantings of Australian ebony and Gubinge, there are **no details whatsoever of the local medicinal or bush tucker species or when, where or how trials have or will be conducted.** Given that alleged benefits to the Aboriginal community from these crops are advanced as a reason the project should proceed, this is a serious deficiency.

Response: *The ebony and Gubinge are trial plantings only at this point and any decision on the potential commercialisation is premature at this early stage.*

9.4 Legal Issues

In relation to the development of native timber species (Australian ebony and Gubinge) and local medicinal and bush tucker crops **there is no mention of the intellectual property rights of the local communities.**

Response: *As far as TTP are aware there are no indigenous intellectual property rights under state or federal laws. TTP believe that indigenous plant rights should be recognised and rewarded .*

9.5 Financial Issues

a) The only figure given in the PER are $450 projected gross income, $20 million "injected" over the development phase and 'up to' $450 million over the lifespan of the project (the $20 million are overlooked in 2.1.1). We are given no indication of how these figures are arrived at. And is the proponent implying that the $450 million projected gross income will be 'injected' into the Australian economy?

Response: *As stated earlier the total gross income is projected to be $450 million and will not necessarily be injected into the Australian economy. The project cost estimates are based on quotations and actual costs incurred in the trial. Revenue projections are based on discounted world prices for log sales.*

The harvesting and sale of sandalwood is to be staged and discussions with offshore buyers are proceeding to obtain forward orders.

The proponent proposes to put a considerable quantity if Indian Sandalwood onto the international market over a short period. This could greatly increase current annual word production of the produce, which would surely have a major impact on the return of the proponent. Where is this issue addressed?

Response: *The marketing of products is a strategic process which TTP has/is developing with international buyers and this information is obviously commercially sensitive.*

As with corporate issues addressed above, financial issues are highly relevant to the environmental acceptability of this project.

b) After a trial plantation of at most 4 ha (and possibly 3.4 ha) for only two to four years, the PER assets that the venture **"is…. economically viable"** (p. xi). **Such a small trial for such a short time cannot possibly provide sufficient information to make such a claim.** The fact that it is made in these circumstances without any supporting evidence raises serious doubts about the whole project.

Response: *The financial models for a 900 ha project show total costs of $170 M and total revenue of $450 M. The models have been reviewed by financial experts and the venture is considered highly viable. The purpose of the trial was to verify the suitability of the location for the commercial cultivation of the chosen species – not to establish the known fact that plantation forestry is economically viable.*

A vague statement about the potential for downstream processing (p.8) does not justify this being counted as a benefit.

The claim that if the project does not proceed the potential to commercialise local bush tucker and medicinal plants will be lost (p.10) is not true. The PER contains only vague statements about trialling bush tucker and medicinal plants (e.g. p.100), and this could be achieved through other means and projects.

Response: *If a trial to commercialise local bush tucker and medicinal plants is not undertaken by TTP, then there is potential that this will be undertaken by other communities on the Peninsula. Irrespective of which company / community undertakes the trial, the*

resulting clearing will be the same. Should trials be undertaken outside the Dampier Peninsula this will deprive the local communities benefiting from this industry. TTP welcomes suggestions from the Conservation Council on methods to locally propagate crops while limiting clearing to below levels described in the PER.

9.6 Environmental Issues

9.6.1 Biodiversity

As the PER admits (p. 49) and the December 2004 Discussion Paper for the Biodiversity Conservation Strategy confirms (p.32) there have been very few biological surveys on the Dampier Peninsula. The PER adds little to our knowledge and certainly not enough to justify removing 967 ha of poorly known Pindan woodland.

Clearing of 967 ha, let alone 1,500 or 5,000 ha, of healthy, pristine Pindan woodland is not acceptable. If clearing bans operate in the rest of the State, they should operate in the Kimberley. **Remoteness of the area and alleged extensiveness of the vegetation type (pp. 55, 125) are no justification for permanent removal or pristine native vegetation.**

The claim that the proposal will provide "an increased level of conservation management on the Peninsula, especially in respect to fire" (p. 8) is not justified. In fact it may make fire management worse as the presence of a plantation may result in too frequent fuel reduction burning of the surrounding native vegetation as a measure to protect the plantation from wildfire.

Response: *An examination of the fire scar maps published in the PER composite over the past 10 years indicates that even the slightest reduction in fire frequency would benefit the flora and fauna of the Peninsula. TTP cannot guarantee that fewer fires will occur in the short term, but through on-going cooperation with BBC, CALM and other stakeholders there will be gains to be had. The fire issue has been discussed at length with BBC and others, but until the project is approved and TTP has fire-fighting appliances, cooperative training programs and the like, then nothing can be confirmed at this point.*

The PER talks of habitat corridors (p. 14), bush corridors (p.17) and wildlife corridors (p. 17). Are they the same?

Response: *Yes. The most applicable term is Habitat Corridors and this term will be used consistently throughout the project in the future.*

The layout of corridors, fire breaks and access tracks around the plots and the plantation (pp. 12, 17) is unclear. What are their various widths and arrangement?

Response: *Refer to Figure 3.3 (Appendix A).*

Are they adequate to serve as wildlife corridors (p. 110)? It is to be noted that **habitat corridors will only be retained "where practicable"** (p. 101). What does this mean, and who decides what is practicable?

Response: *TTP commit to minimum habitat corridors of 80 m wide. The arrangements of the corridors are detailed in the attached Figure 3.3 (Appendix A).*

9.6.2 Flora

The flora surveys conducted for the proponent are totally inadequate. For details of the inadequacies, see attached professional assessment.

"Rare species will be missed by any approach and must be the subject of detailed survey" Wardell-Johnson, G and Christensen, P.E.S. A review of the effects of disturbance on wildlife of the karri forest in *Research on the impact of forest management in South-Western Australia,* CALM Occasional Paper, 2/92, Unpublished draft.

No such detailed survey for rare species has been conducted (p. 54).

Response: *As no rare flora species have been located to date within the footprint of the proposed disturbance area, follow-up surveys have not been conducted. However TTP commit to detailed rare flora surveys of the actual footprint of the proposed disturbance prior to finalisation of the development plan, prior to commencement of clearing. Should rare flora be located the development plan will be modified to CALM's requirements.*

9.6.3 Fauna

The fauna surveys conducted for the proponent are inadequate. For details of the inadequacies, see the professional assessment by Dr Graham Thompson.

As an example of the poor standard of the discussion of fauna, the PER states that four species listed under international agreements may potentially occur in the project area then it names only three (p. 83).

Response: *This is a typographic error. It should in fact read five, not four, species potentially occur, of which two were recorded (see pg 27 of the fauna report in app E). All five species are listed in the table.*

The PER states that none of the species recorded during the fauna survey are of significant conservation importance (p. 111). Given the inadequacy of the survey, this is not reassuring.

Response: *This statement refers to their significance in relation to the development, and is based on the scale and location of clearing for the development and the published literature on the ecology of these species. Comments on the impact on species potentially occurring (but not recorded) is included in Section 5.13 of the PER (pages 83 to 88). The adequacy of the fauna survey has been addressed at length in Section 4.0.*

9.6.4 Water

The surveys are too short to justify any claims of sustainability. For example, monitoring of groundwater levels took place for only 12 months, January 2004 to January 2005 (p. 46). It covered only one wet season, when the rainfall may have been high or low (we are not told). Given the great variability of the climate and the likely impacts of climate change, no firm conclusions can be drawn from the study.

***Response**:* *Monitoring is on-going.* The *DoE do not maintain any regional monitoring bores in the region and therefore no long-term groundwater records are available. Experience from the Broome Town Water Supply operated by the Water Corporation and which pumps 4.2 GL/a demonstrates that the aquifer can provide large sustainable groundwater supplies.*

Water supply requirements are 4.5 GL for a 900 ha plantation (p. xii). This would supply each tree with 15 L/day. Yet the system being installed will deliver 30 L/day (p. 21). Why?

***Response**:* *The system will be designed to deliver up to 30L/tree/day with drippers emitting 15L/hour. This design will allow flexibility in watering regimes.*

7.1 GL/yr are required for a 1,500 plantation (p. 146). Yet we have been advised that the **maximum amount available for extraction is 4.5 GL/yr**. If this amount is allocated to the proponent, it would leave nothing available for any other use and no margin or error for increased demand resulting from anticipated increased temperatures and decreased rainfall due to climatic change ("Climatic change: Projections for Australia". CSIRO 2001)

***Response**:* *The irrigation water requirement is less than 10% of annual recharge, and in fact the principal volume of water flows out to sea. The maximum volume of groundwater throughflow in the groundwater flow system is estimated from modelling to be 62 GL/a. After allowance of 19 GL/a (30%) for environmental water requirements, and 6 GL/a (10%) for other users 37 GL/a is available for allocation. The 4.5 GL/a being sought by the proponent is about 12% of the groundwater potentially available for allocation. See Rockwater report "Groundwater Assessment and Modelling to Support Groundwater Licence Application.*

it is of concern that a bore drilled to ascertain the location of a salt wedge known to extend around the coast in the Broome region and "possibly beneath the entire northern end of the peninsula," stopped because of technical difficulties and did not reach the interface (p. 36). The PER admits that "it is uncertain whether the toe of the wedge underlies the BBC" (p. 41). A conscientious proponent would have made sure the surface drilling was carried out to obtain this important information.

***Response**:* *The proponents drilled TTM04 (near the Beagle Bay community bores) to 98 metres, which is 35 metres deeper than the community bores. Calculations using the Ghyben-Herzberg Principle indicated the interface between the saltwater wedge and the freshwater would be a minimum of 300 metres below the surface. Given the estimated depth to the saltwater interface and experience from the Broome water supply well field that there will not be any significant movement of this interface, it was deemed not necessary to deepen the bore any further.*

One bore showed atypical results (p. 46), but the results were not followed up on.

***Response**:* *The monitoring results from TTM 08 now follow the general pattern shown by the other bores. The atypical results may have resulted from an obstruction in the bore.*

The impact of water extraction on Bobby's Creek and the wetlands just north of the site are unknown and could be disastrous. Too much is inferred or presumed (pp 40-41).

Climate change is nowhere mentioned in the PER. Less rain and higher temperatures mean more demand for water and less water available.

Response: *The natural variations in the southern Monsoon (reputedly the world's most erratic rainfall zone) reportedly vary far more widely that CSIRO's worst-case predictions up to 50 years ahead. These events are normal but generally not appreciated or understood outside this region. For example: this year's site rainfall has been about half the average -410mm so far- compared to 950mm to Dec 04. Also see response Section 8.34.*

The risk to the local communities' water supply and the environment of extracting 4.5 GL/yr for 20 or more years, let alone 7.1GL/yr, is too great for the proposal to be allowed to proceed.

9.6.5 Carbon Sequestration

The alleged carbon sequestration benefits are illusionary and the claim should not have been made (p.8). The amount of carbon dioxide released through the destruction of all native vegetation on 967 (or 1,500) ha must far exceed the sequestration capacity of trees planted at the rate of 630 per hectare (sandalwood and host) and 1000 per hectare for teak (p. xii), even of a "degree [what does this mean?] of low to mid-storey vegetation is maintained (p. xvii). The 20-year project will produce only 57,300 m^3 of timber, of which an unspecified portion will be "high quality timber" that will lock up carbon for many years (p.8). The rest will be sandalwood, which will be burnt or otherwise decomposed within a very short time. It is only "expected" that the amount of carbon produced through project activities will be well offset by the amount absorbed by the trees planted (p. 121). However, **the PER actually admits that there are insufficient data to accurately estimate the carbon storage capacity of the plantation in comparison to the natural Pindan vegetation** (p. 122).

Response: *Agreed, at this point in time there are insufficient data to accurately estimate the carbon storage capacity of the plantation in comparison to the natural Pindan vegetation*

9.7 Management Issues

9.7.1 Plot Size

The proponent's preferred plot size is 100 ha (p.15). What research has been done to ascertain whether 100 ha is the appropriate size for the situation, or has the size simply been adopted from other regions?

Response: *FESA recommends plot sizes of up to 100 ha "depending on prevailing conditions such as local climate, terrain, topography and proximity to local development" (FESA 2001: 6). These guidelines are based on south-west plantations, and FESA advises that revised guidelines will be released shortly. Ralph Smith at FESA recommends plot size to be the maximum that the Proponents are willing to lose in a fire.*

9.7.2 Weeds

The project site is currently weed free (p.57), and the project will almost inevitably result on weed invasion of the site and thence into the surrounding native vegetation. In particular, two serious weeds, Stinking Passion Flower and Parkinsonia, are already in the area (p. 72)., and these are known to spread with degradation of the habitat such that would occur with the removal of the native vegetation and planting of exotic tree species. They may now be represented as a result of the disturbance that has already occurred. The PER admits that introduced species may replace native species (p. 110). Thus the optimistic statement that "impacts from weeds are…expected to be minimal" (p. 101) is not justified.

Response: *Measures to limit weed spread are listed in the EMS, including those to prevent the introduction of pests and weeds from construction equipment and nursery stock. Parkinsonia is typically spread by water flooding or transmitted by animals or vehicles (see http://www.weeds.crc.org.au/documents/wmg_parkinsonia.pdf). Given the record of one population more than 10 km to the north of the plantation, and that the plantation is not within flooding distance from this population, the weed hygiene measures will ensure that the likelihood of this species being introduced into the plantation is negligible. As *Passiflora foetida is generally spread by birds, it is a realistic possibility that this species may spread into the plantation site following clearing, and thus it will be specifically targeted during weed monitoring. Following establishment of the plantation, the likelihood of this species becoming established within the plantation site is significantly lower.*

9.7.3 Pests and Diseases

Apart from the endemic termite *Mastotermes darwiniensis* (p. 89), **there is no discussion of the possibility of native fauna and diseases becoming a problem** (such as the endemic fungus *Armillaria luteobubalina*, which is now a serious problem in regrowth karri), **nor any discussion of exotic pests and diseases that could attack the plantation.** Pathogens and pests are merely mentioned (pp. 13, 20, 22), and the treatment is unspecified pesticides and fungicides, which , "where practicable", will be applied directly to the root zone through the irrigation system (p. 22). But what happens where it is not practicable, and who decides whether it is practicable or not?

Response: *Due to the isolation of the site from all communities (with the exception of the Beagle Bay community), the risk of introduction of exotic pests and diseases is unlikely. The EMS dictates that the introduction of feral or domesticated animals into the site is strictly prohibited. Furthermore, the EMS lists procedures that will be put in place to prevent the introduction of pests and weeds from construction equipment and nursery stock. All chemicals anticipated to be used for control of pests (2 in total) are listed on pg 132 of the PER. Should the use of additional chemicals be required, then TTP has access to experts in the fields of plant pathology and entomology to advise if and when the need arises.*

The PER says that Roundup is to be used on weeds and regrowth (p. 22) yet the alleged safety of this chemical is increasingly being questioned. The PER makes no reference to this. We also note that elsewhere we are told that "a degree of low to mid storey vegetation" is to be maintained (p. xvii). **Will the regrowth be killed or maintained?**

Response: *Where regrowth may be in direct competition with the tree crops it will be removed physically or by chemical control. The issue of Roundup as a safety hazard is known in wetland areas especially; however is not applicable in this case.*

9.7.4 Power

The plantation will require power, which is to be supplied from Beagle Bay (p. xii, 146). However, the PER does not discuss the powerline, construction of which would cause additional disturbance and provide a vector for pest and weed invasion along the route.

Response: *Power supply from Beagle Bay is uncertain as the Office of Energy have advised that it could be two years before a power station is up and running at Beagle Bay.*

9.7.5 Priorities

It is of concern that the PER states that "the plantation will be managed to ensure that the water, nutrient and pest control requirement of the farmed trees are continuously met, to facilitate optimum growth and health" (p. 125). This indicates that **commercial imperatives will be allowed to override all other considerations, in particular protection of water sources and water dependant ecosystems.** If this is the attitude of the proponent, the proposal must be rejected outright.

Response: *The Conservation Council should be well aware of the GLOS requirements set by WRC/DoE – it is provided with the PER (Appendix E).*

9.7.6 Supervision

There are repeated references to plans that will be developed (pp. xiv, 117, 127, 142-143), and surveys, research and monitoring plans that will be done (pp. xiv, 1, 101, 105, 107, 142-144). We have two concerns. First, who will ensure that the plans, research and monitoring are actually done as promised, or are we relying on self-regulation? Given the remoteness of the location, the latter is more likely, and this would not be acceptable. Second, if the research and monitoring produce findings that the project is causing serious environmental problems, what action would be triggered? **Who would have the knowledge and the power to call halt to the offending activity and enforce remedial action? And would the proponent accept liability and have the resources to pay for the expensive remedial action?**

Response: *The pre-development plans will be required to be developed and approved to the satisfaction of the EPA and relevant DMA's. Development will not be able to commence until all such commitments or Ministerial conditions are complied with. This will be regulated and audited by DoE Audit Branch. TTP will report annually to the DoE. Should any non-compliances occur, corrective actions will be determined in consultation with DoE and any relevant decision making authority. Aside from that there is the multitude of other agencies too numerous to list here but may be provided to you as a starting point by the DIA.*

10.0 SUBMISSIONS FROM THE DEPARTMENT OF ENVIRONMENT – NORTH WEST DIVISION

The volume of groundwater requested (4.5 GL/yr) to meet the water requirements of the proposed timber plantation has the potential to impact on the groundwater dependent ecosystems (GDEs) associated with the Bobby's Creek Wetlands System, the movement of the saltwater interface and the quality of the groundwater. Management of impacts relating to native vegetation clearing and public water supply have also been considered. The Department has progressed the management of these potential impacts in close consultation with the proponents in accordance with the *Rights in Water and Irrigation Act*, the Statewide *Environmental Water Provisions Policy* and in parallel with the EPA's Public Environmental Review process.

The primary tool the Department will use to monitor and manage potential impacts to the GDEs, salt water interface and groundwater quality will be through the use of a Groundwater Licence Operating Strategy. Tropical Timber Plantations (TTP) have commenced the development of a comprehensive strategy which includes a commitment and approach to developing and setting environmental water provisions. A draft copy of the Operating Strategy can be forwarded to EPA members but under the RIWI Act can not be released for public viewing.

10.1 Managing potential impacts to the GDEs

A precautionary approach has been adopted to protect the GDEs and provide adequate warning of any adverse effects from groundwater abstraction. Interim Environmental Water Provisions (EWPs) will be set in line with the *Statewide Policy No 5 Environmental Water Provisions Policy for Western Australia* and will be clearly documented in the Operating Strategy. The Department has recommended that EWPs are set at 0.1 m below the minimum 2005 dry season natural water level at criteria bores and tight management commitments are developed to ensure the EWPs are protected. This commitment to set EWPs and management commitments immediately following the 2005 dry season water levels will be documented in the Operating Strategy.

Response: ***The Department of Environment has verbally confirmed that the Groundwater Licence Operating Strategy prepared by TTP has been accepted. As there are no long-term monitoring data for the region the EWP's have been set using six months data collected by TTP, since December 2004. Consequently, conservative EWP levels 0.1 m below the minimum 2005 levels in criteria bores have been set. After more data has been obtained and more experience is gained about groundwater behaviour along Bobby Creek it is possible that less conservative levels can be set.***

The Department recommends that the EPA specify the Bobby's Creek wetland system and mound spring communities as an area of important environmental value and as such ministerial conditions are developed committing TTP to:

1. Protect the groundwater dependent ecological values of the wetland system and mound springs from the impacts of groundwater abstraction through the setting of the environmental water provisions to protect these values;
2. Setting management commitments to ensure EWPs are maintained and breaches prevented;
3. Continued monitoring and investigation of the wetland system and mound springs to refine current understanding of EWP criteria;

4. Conducting regular monitoring and reporting of water levels at EWP criteria sites and environmental condition of key GDEs.

Response: ***The ministerial conditions recommended to be developed have been specified in the Groundwater Licence Operating Strategy. Only general conditions should be set by the EPA. When further information is obtained it may be necessary to alter the EWP's in which case it is easier to modify the Groundwater Licence Operating Strategy than to alter the ministerial conditions.***

It is recommended that these ministerial conditions are administered and audited by the Department through the water allocation process and linked to the groundwater licence. The Groundwater Licence to abstract 4.5GL/yr will be issued for two years at which time the EWPs and management commitments will be set. The groundwater licence will not be renewed until the Department is satisfied that appropriate EWPs have been set.

Response: ***Data will be obtained as required by the Groundwater Licence Operating Strategy. The data will be reviewed annually in Groundwater Monitoring Reports and discussed with DoE as necessary. The DoE will be requested to identify any problems well before the licence renewal date and provide constructive suggestions about interpretation of results and any additional work requirements.***

10.2 Managing movement of the salt water interface

Potential movement of the salt-water interface will be monitored with three monthly conductivity profiles undertaken on a regional monitoring bore as committed to in the operating strategy.

Response: ***Experience from the Broome town water supply pumping 4.2Gl/a over a saltwater interface about –70 to -140 m AHD borefield indicates no salt water intrusion problems are likely to occur in the Beagle Bay Community water supply bores where the interface is estimated to be about -300 m AHD. The monitoring bore in which the salinity profiles are being monitored is 25 m deeper and 150 m from the BBC production bores.***

10.3 Managing Public Water Drinking Water quality

The Beagle Bay water supply bores are a privately run scheme that is not protected under the Country Areas Water Supply Act. Consideration should be given towards developing a well-defined source protection plan. This will assist in determining early adverse trends influencing the quality and quantity of the water supply system. The Department will initiate discussions with the agency responsible for the servicing on the community. The proponents have committed to conducting three yearly agro-chemical analyses on two of the Beagle Bay community bores.

Response: ***The Beagle Bay Community bores appear to be unlicensed. Orderly monitoring of pumpage and water quality should be undertaken and the development of a source protection plan is strongly supported because of various potential local sources of groundwater contamination.***

10.4 Assessment of native vegetation clearing

A review of potential impacts from native vegetation clearing has been undertaken. The Department does not object to the clearing of 967 ha of native vegetation as the impact of clearing in a regional context, if undertaken in accordance with proposed management strategies, is considered minimal. Commitments as stated in the PER, including the development and implementation of a weed management plan, monitoring of groundwater levels in the Bobby's Creek wetland system and the survey of targeted DRF and Priority flora prior to clearing are supported.

Response: ***Support noted.***

10.5 Conclusions

A general comment on the PER released for public comment is that there are a number of editorial mistakes, particularly relating to the figures, throughout the document. There was often confusion about the scale of the project being assessed. The above recommendations are based on the development of a 900-hectare tropical timber plantation requiring a water allocation of 4.5 GL/yr.

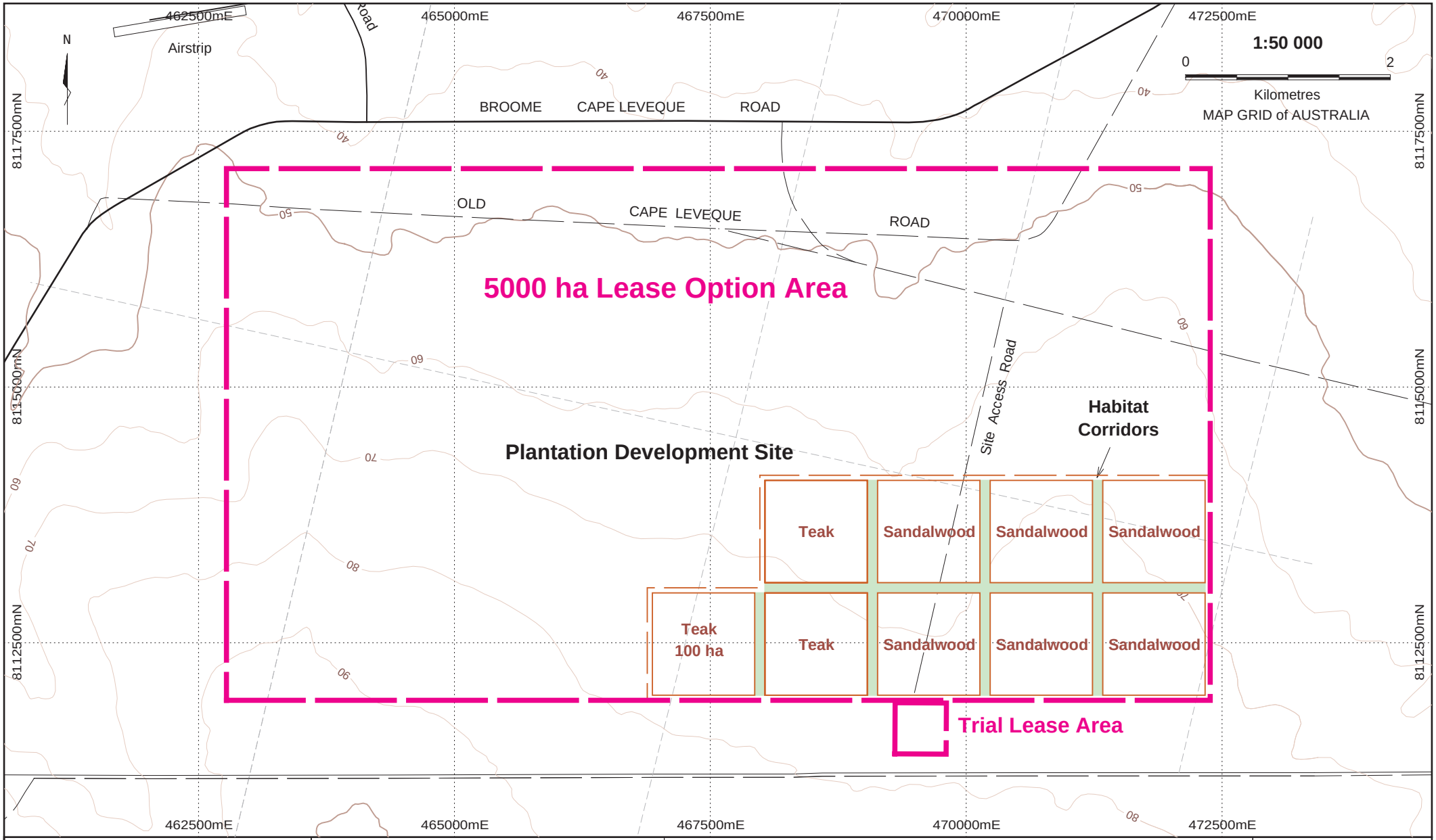
Response: ***The Proponent acknowledges that many of the figures were confusing and has corrected the figures to relate to Stage 1 of the project only. These revised figures are provided in Appendix A.***

As previously discussed the Department would appreciate the opportunity to review the water related public submissions received to ensure that all water issues have been identified and managed under the RIWI Act prior to the issuing of a groundwater licence. Attached is a copy of the flow chart that has previously been discussed with yourself and the proponents detailing the alignment of the Departments regulatory process and the EPA's PER process.

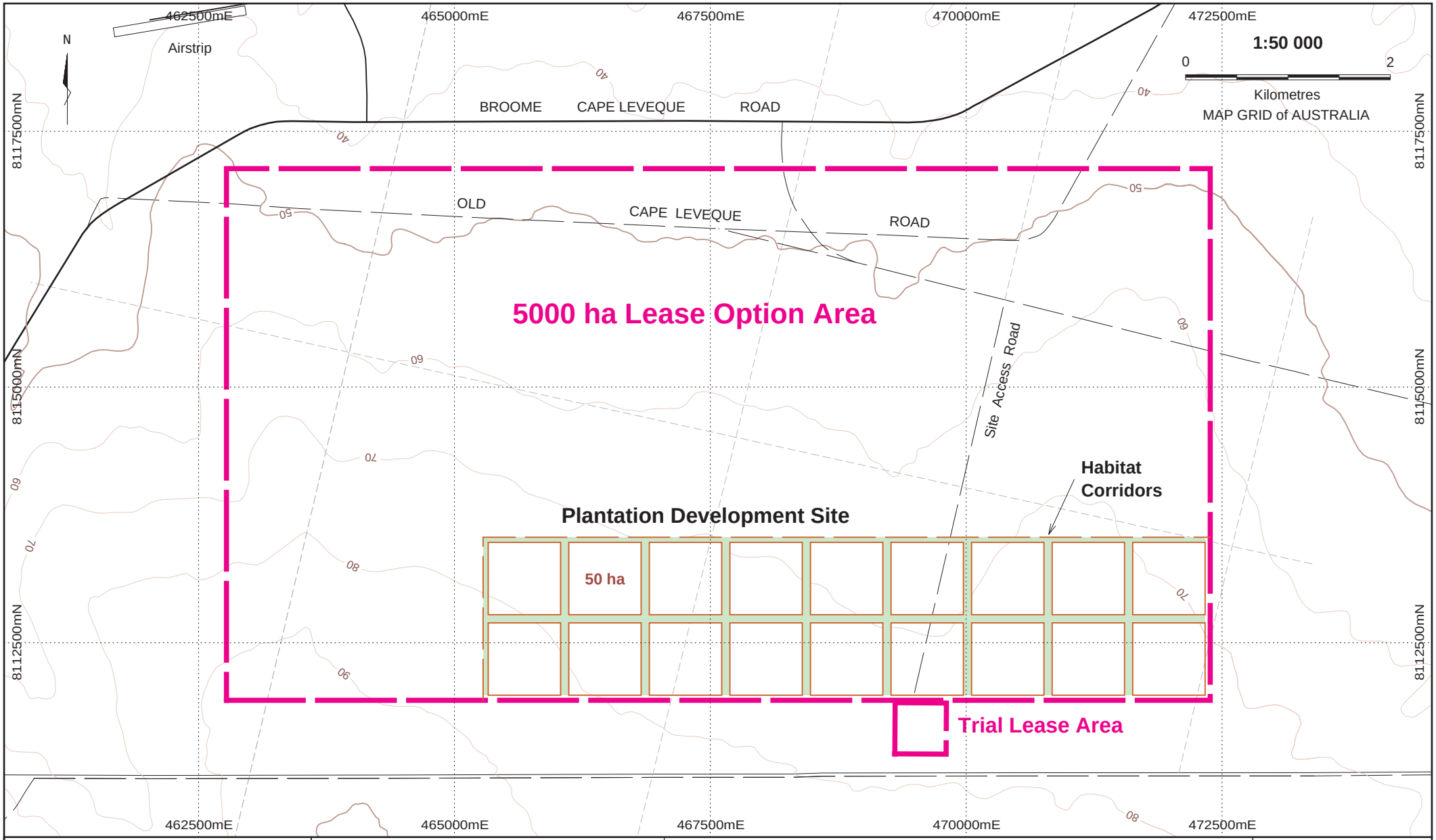
Response: *There has been three years of input from the DoE into the groundwater exploration, modelling, monitoring, preparation of the Groundwater Licence Operating Strategy and the PER document. It is now important that the TTP application is progressed and that any delays caused by a review of water related submissions are kept to a minimum.*

APPENDIX A

Amended Figures



JOHN BRENNAN AND ASSOCIATES Project Managers	Client: **TROPICAL TIMBER PLANTATIONS PTY LTD**	**PLANTATION DEVELOPMENT PLAN** **100 ha PLOT WITH 80m WIDE HABITAT CORRIDORS**	Date: 8 March 2004
			Scale: 1: 50 000
	Project: **BEAGLE BAY PROJECT**		Figure No. **3.1**
Author: J.B. / S.C. — Drawn: S.Coleman		A4	Plan No. **BB-008**



JOHN BRENNAN AND ASSOCIATES Project Managers	Client: TROPICAL TIMBER PLANTATIONS PTY LTD	PLANTATION DEVELOPMENT PLAN 50 ha PLOT WITH 80m WIDE HABITAT CORRIDORS	Date: 14 February 2005
			Scale: 1: 50 000
	Project: BEAGLE BAY PROJECT		Figure No. 3.2
Author: J.B. / S.C. — Drawn: S.Coleman		A4	Plan No. BB-009

10m wide Access Tracks

80m wide Habitat Corridor

40m wide Retained Native Vegetation

80m wide Habitat Corridor

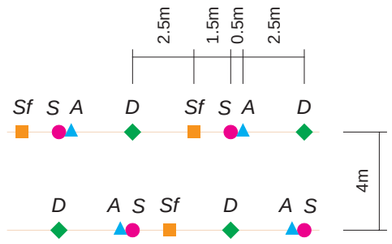
Sandalwood Plot

Plot rows 4 metres apart

Legend

- D - *Dalbergia latifolia*
- S - *Santalum album*
- Sf - *Sesbania formosa*
- A - *Acacia trachycarpa*

Planting Arrangement



10m wide Access Tracks

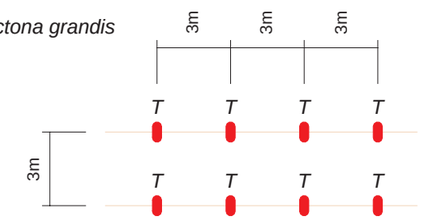
TeakPlot

Plot rows 3 metres apart

Legend

- T - *Tectona grandis*

Planting Arrangement



4m wide Access Tracks

N

1:5 000

0 250

Metres

80m wide Habitat Corridor

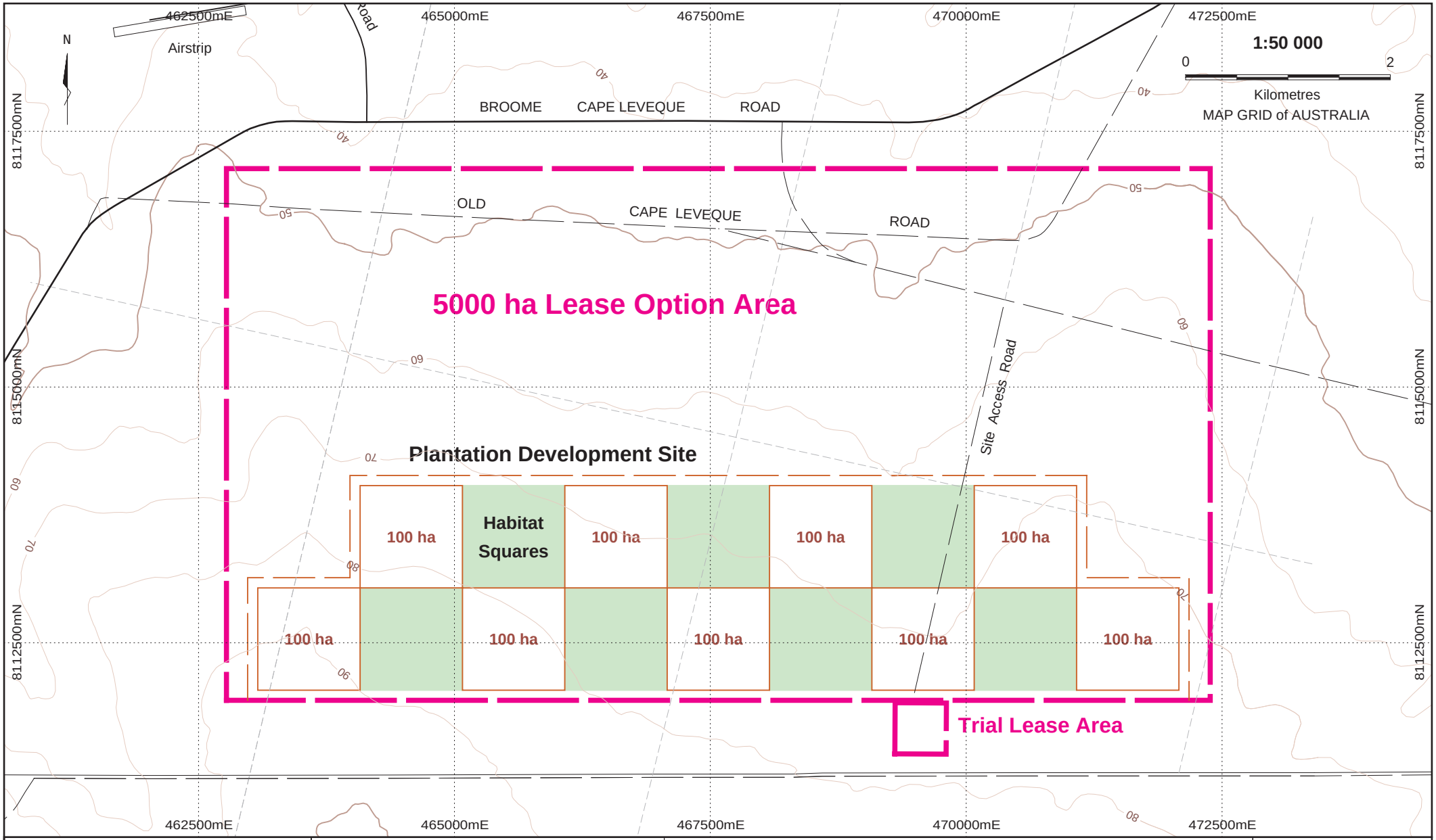
40m wide Retained Native Vegetation

JOHN BRENNAN AND ASSOCIATES

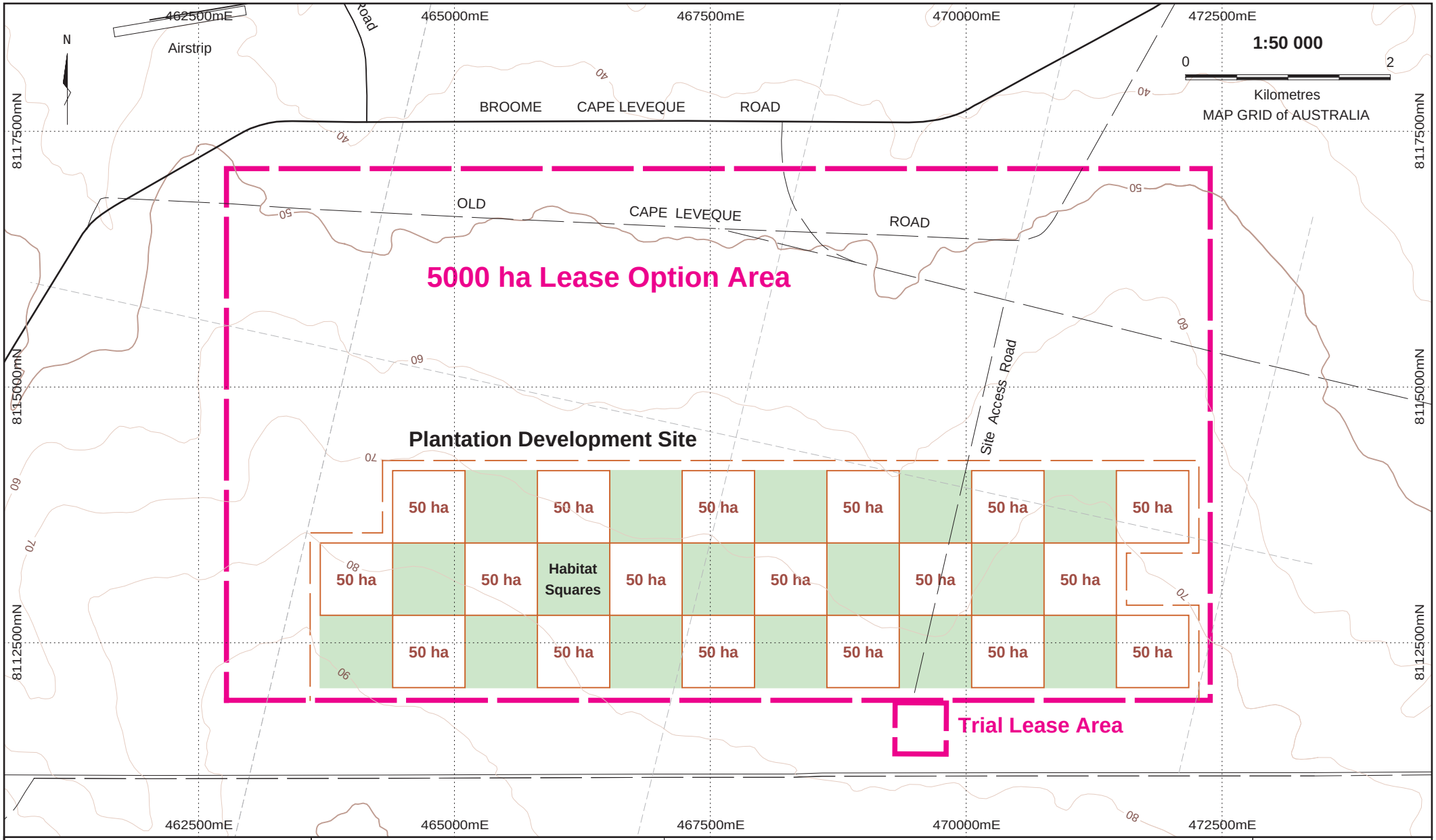
Plot Layout

A3

Client: **TROPICAL TIMBER PLANTATIONS PTY LTD**		
		Date: 10 August 2005
Project: **BEAGLE BAY PROJECT**		Scale: 1: 5 000
		Figure No. **3.3**
Author: J.B. / S.C.	Drawn: S.Coleman	Plan No. **BB-019**



JOHN BRENNAN AND ASSOCIATES Project Managers	Client: TROPICAL TIMBER PLANTATIONS PTY LTD	PLANTATION DEVELOPMENT PLAN 100 ha PLOT WITH 100 ha HABITAT SQUARES	Date: 14 February 2005
			Scale: 1: 50 000
	Project: BEAGLE BAY PROJECT		Figure No. 3.4
Author: J.B. / S.C. — Drawn: S.Coleman		A4	Plan No. BB-010



JOHN BRENNAN AND ASSOCIATES Project Managers	Client: **TROPICAL TIMBER PLANTATIONS PTY LTD**	**PLANTATION DEVELOPMENT PLAN** **50 ha PLOT WITH 50 ha HABITAT SQUARES**	Date: 14 February 2005
			Scale: 1: 50 000
	Project: **BEAGLE BAY PROJECT**		Figure No. **3.5**
Author: J.B. / S.C. — Drawn: S.Coleman		A4	Plan No. **BB-011**

Figure 5.1

HYDROGEOLOGICAL SETTING

I:/296.0/Projects/Surfer/Beagle Bay Hydro 250K.srf

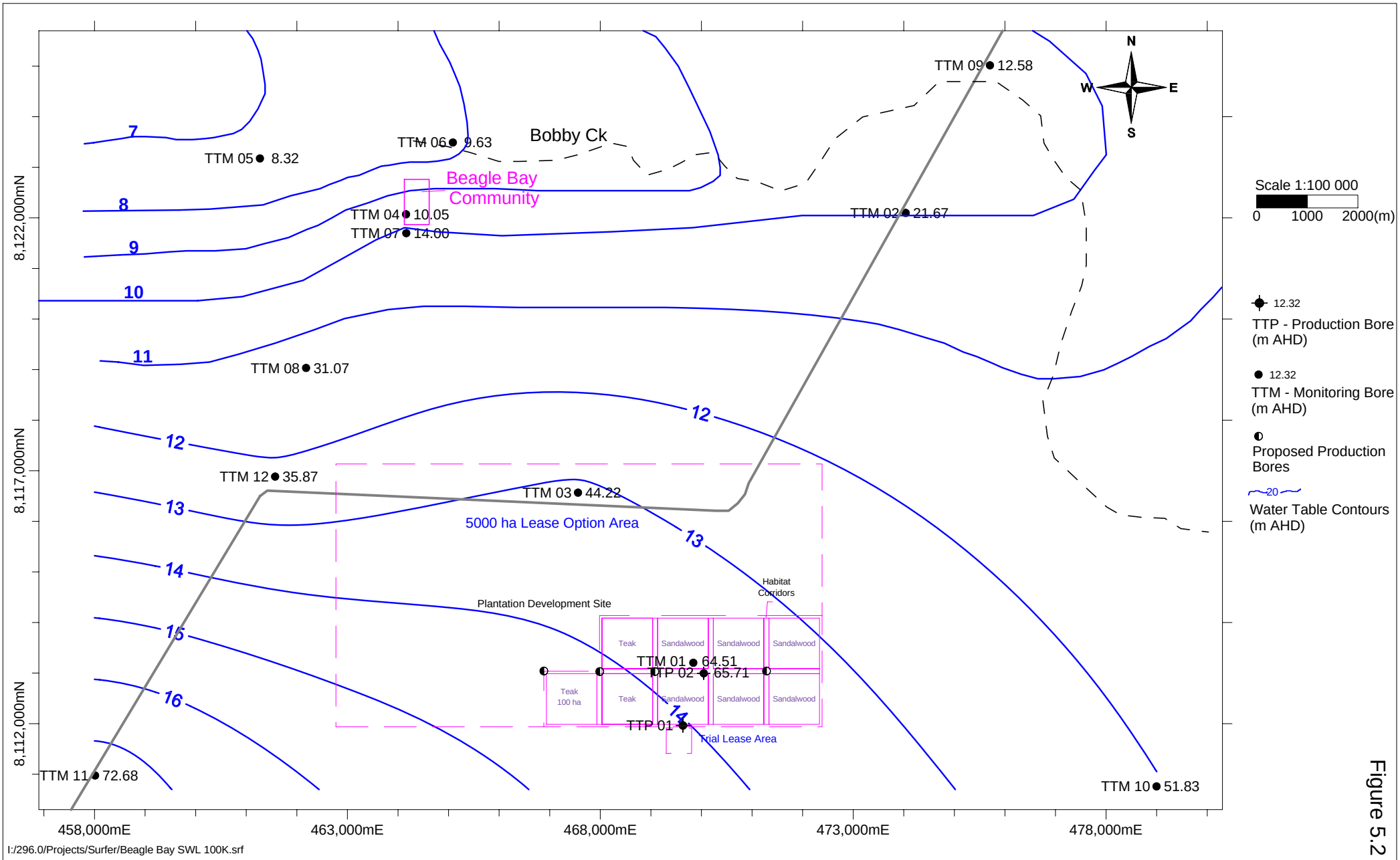
CLIENT: Tropical Timber Plantations

PROJECT: Beagle Bay Project

DATE: March 2004

Dwg. No: 296.0/5.1

Rockwater Pty Ltd



I:/296.0/Projects/Surfer/Beagle Bay SWL 100K.srf

Figure 5.2

CLIENT: Tropical Timber Plantations

PROJECT: Beagle Bay Project

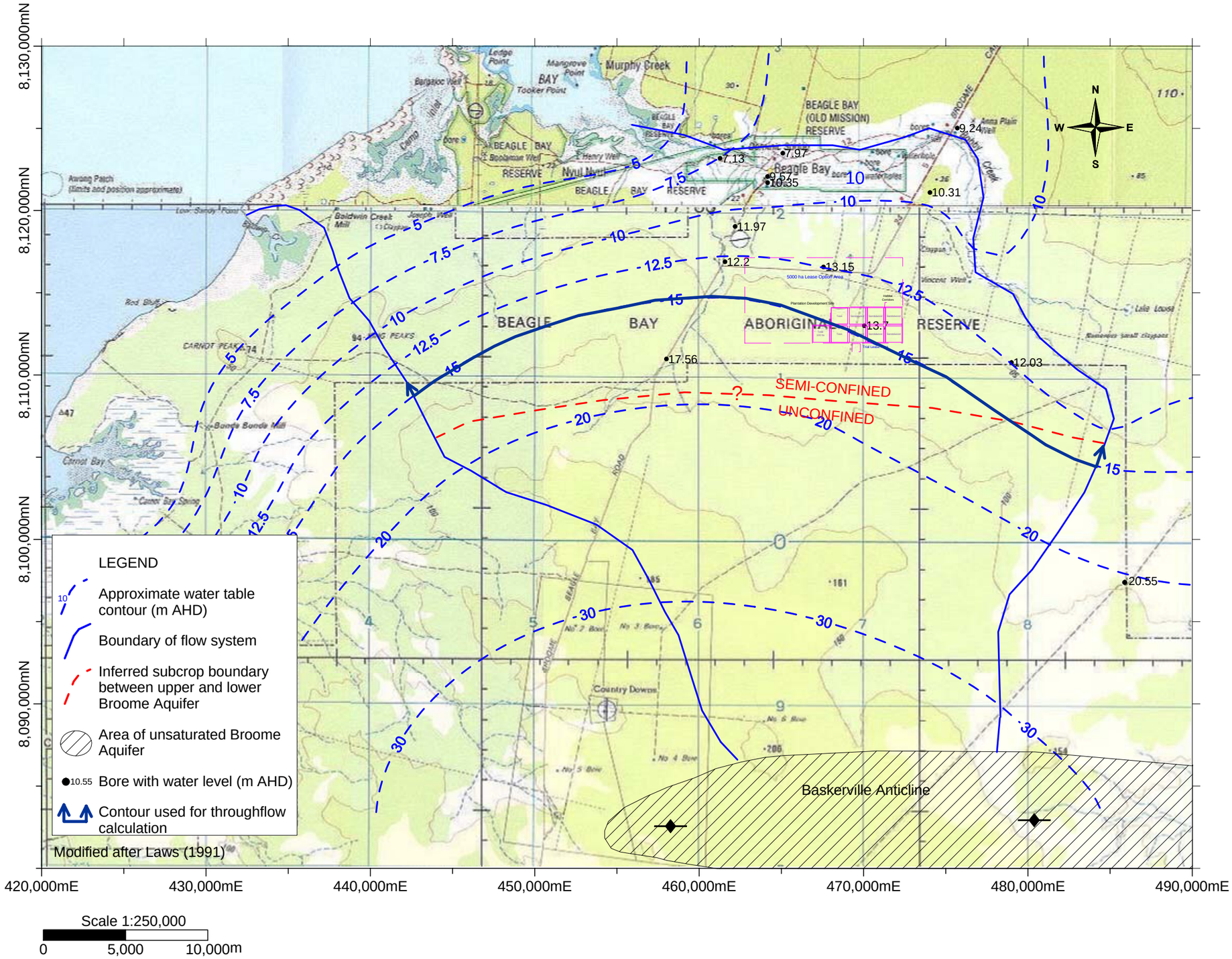
DATE: March 2004

Dwg. No: 296.0/5.2

WATER TABLE CONTOURS (JAN 2004) AND PROPOSED PRODUCTION BORES

Rockwater Pty Ltd

Figure 5.3



MODEL CALCULATED GROUNDWATER LEVELS AND MEASURED VALUES (m AHD)

I:/296.0/Projects/Surfer/calcsswls.srf

CLIENT: Tropical Timber Plantations

PROJECT: Beagle Bay Project

DATE: March 2004

Dwg. No: 296.0/5.3

Rockwater Pty Ltd

JOHN BRENNAN AND ASSOCIATES

REGIONAL SPRINGS
GENERAL LOCATIONS

A3

Client: **TROPICAL TIMBER PLANTATIONS PTY LTD**		Revision No. **6**
		Date: June 2005
Project: **BEAGLE BAY PROJECT**		**Scale:** 1:500 000
		Figure No. **5.5a**
Author: J.Brennan	**Drawn:** S.Coleman	Plan No. **BB-016**

INDIAN OCEAN

KING SOUND

Cape Leveque

Thomas Bay

Lombadina

Spring Site

One Arm Point
Aboriginal Community

Cygnet Bay

Steel Star
(flowing spring)

Goonjarlan

Deep Water Point

Cunningham Point

Gudumul

Spring Site

Pender Bay

Middle Lagoon

Tappers Inlet

Weedong Well
and Lake

Spring Sites

Beagle Bay

Salt Swamp 2

Salt Swamp

Camp Inlet

Bulaman Lake 2

Bulaman Lake

Spring Sites

See BB-017
for enlargment

Beagle Bay
Aboriginal Reserve
(350 000 ha)

Beagle Bay
Community

Bobby's Creek
ephemeral
drainage system

5000 ha Lease
Option Area

Lake Louisa

Road

Country Downs Station

Disaster Bay

Spring
Sites

Lake Paterson

Malaburra Spring

Woolnong Spring

Kallumbarrit Springs

Wahja Springs

Midgeguna Spring

Carnot Bay

Bunda Bunda Spring

Jabir Jabir Spring
(flowing)

Cape Leveque

Country Downs Homestead

Jangan Spring

Fraser

River

Spring Sites

Bungarragut Ck

Fraser River South

Broome

Wonganut Springs

To Broome 53 km

Derby

DERBY

HWY

8150000mN

8100000mN

400000mE

450000mE

500000mE

550000mE

N

SCALE 1 : 500 000

0 25

Kilometres

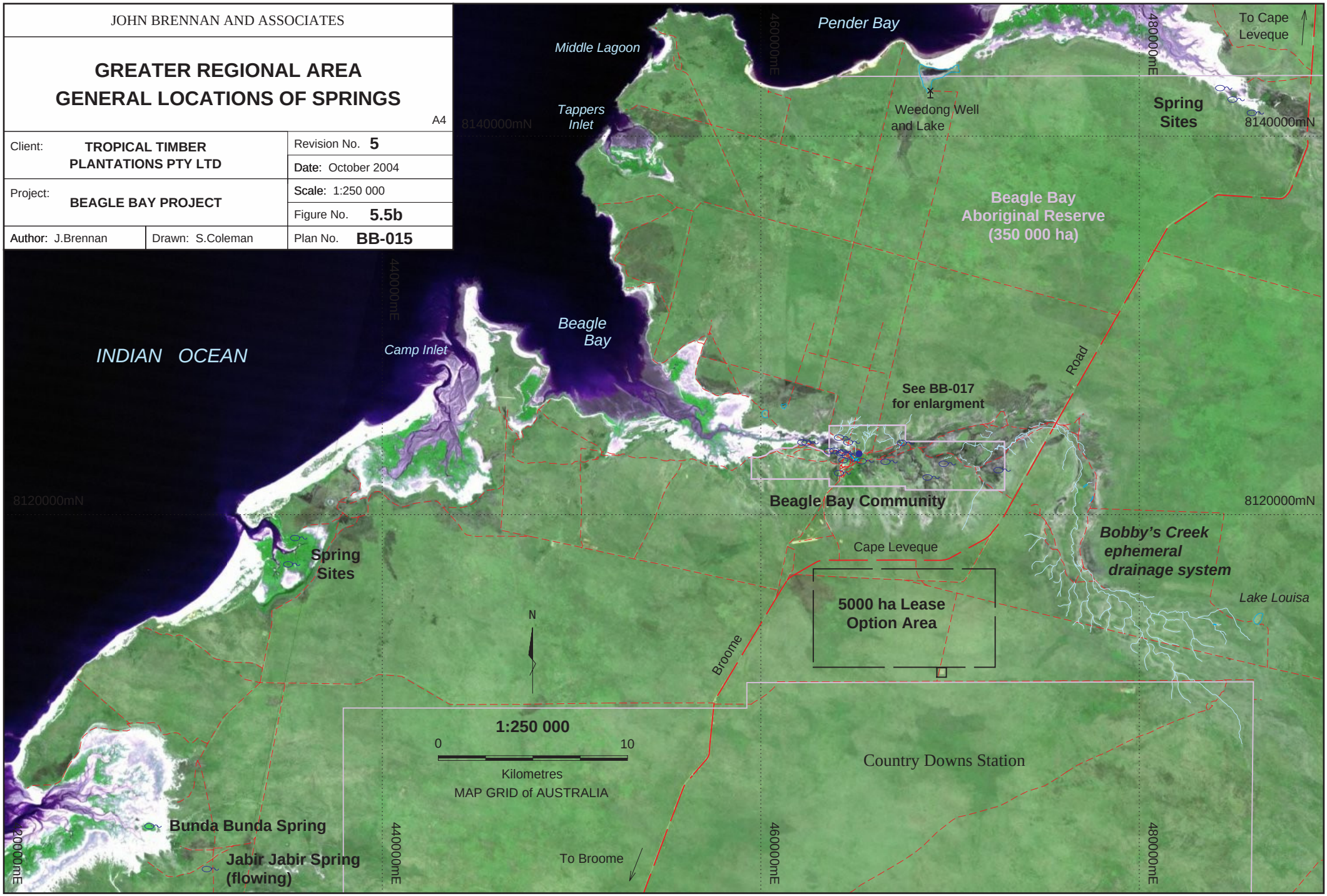
MAP GRID OF AUSTRALIA
GRID BASED ON
TRANSVERSE MERCATOR PROJECTION

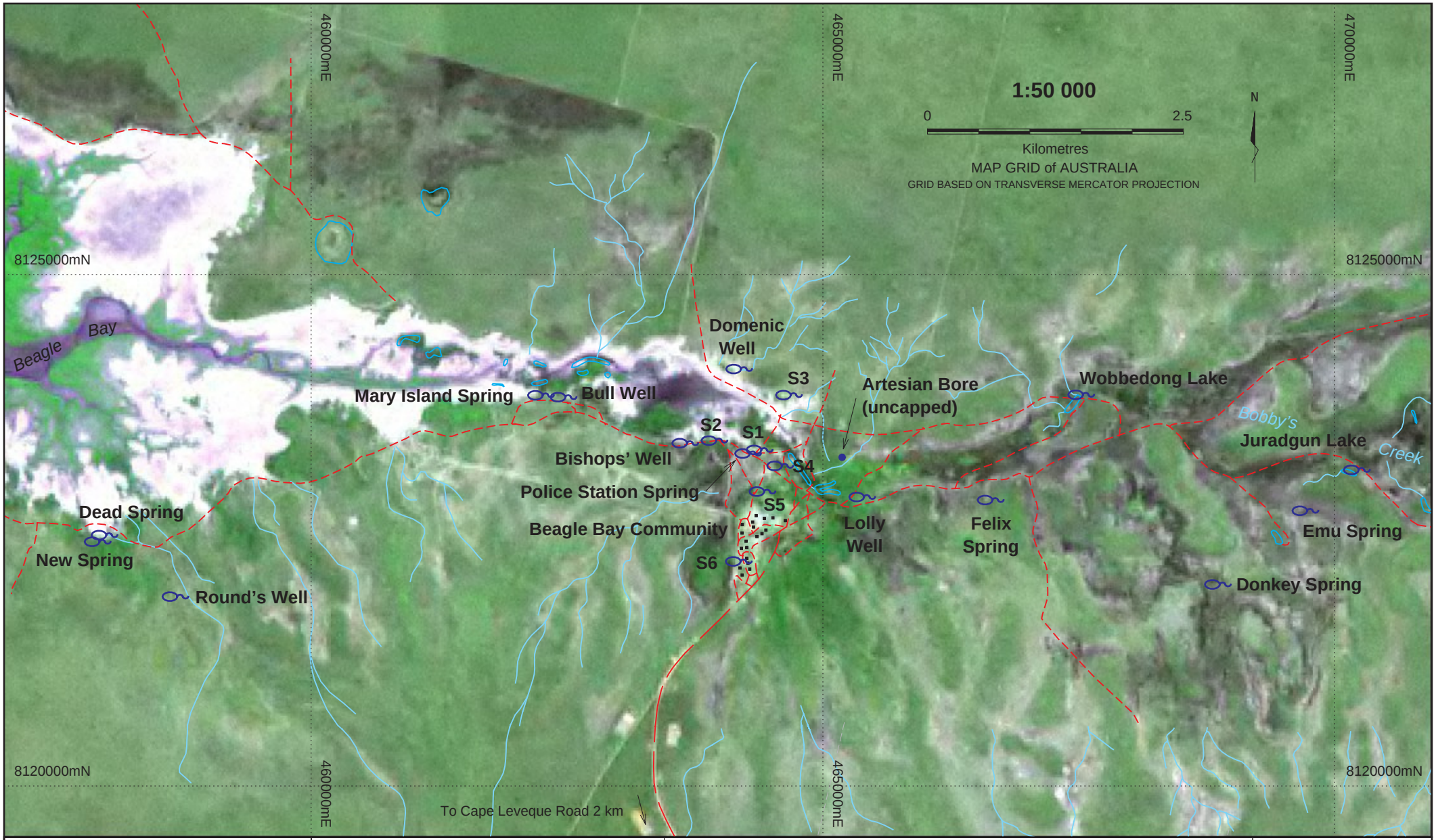
JOHN BRENNAN AND ASSOCIATES

GREATER REGIONAL AREA
GENERAL LOCATIONS OF SPRINGS

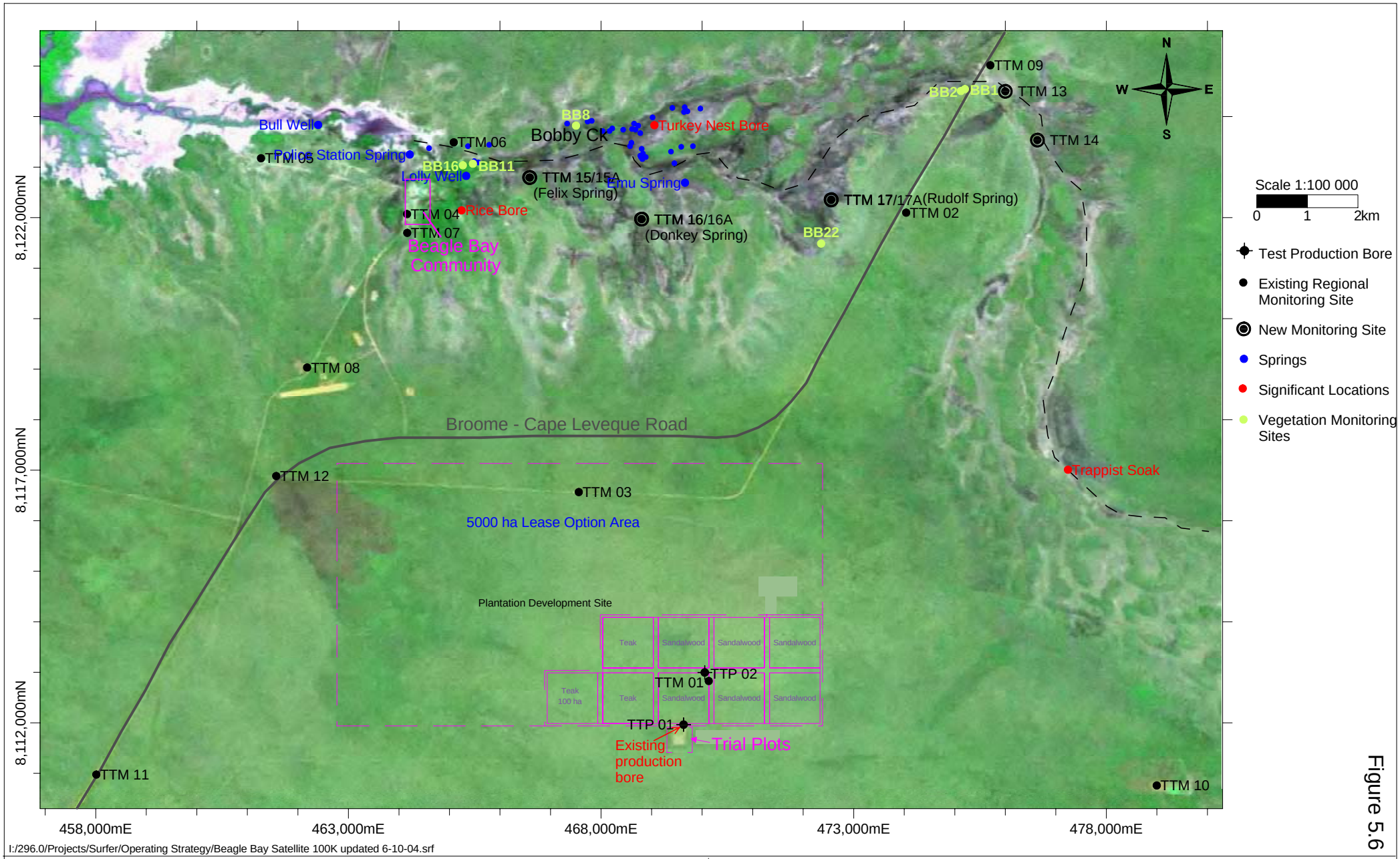
A4

Client: TROPICAL TIMBER PLANTATIONS PTY LTD	Revision No. 5
	Date: October 2004
Project: BEAGLE BAY PROJECT	Scale: 1:250 000
	Figure No. 5.5b
Author: J.Brennan / Drawn: S.Coleman	Plan No. BB-015





JOHN BRENNAN AND ASSOCIATES Project Managers	Client: TROPICAL TIMBER PLANTATIONS PTY LTD	**GREATER BEAGLE BAY AREA GENERAL LOCATIONS OF SPRINGS**	Date: June 2005
	Project: BEAGLE BAY PROJECT		Scale: 1:50 000
			Figure No. **5.5c**
Author: J.B. / S.C. — Drawn: S.Coleman		A4	Plan No. **BB-017**



I:/296.0/Projects/Surfer/Operating Strategy/Beagle Bay Satellite 100K updated 6-10-04.srf

Figure 5.6

CLIENT: Tropical Timber Plantations Pty Ltd

PROJECT: Beagle Bay *Big Tree Country* Project

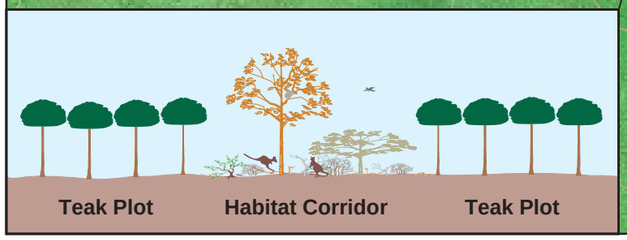
DATE: January 2005

Dwg. No: 296.0/05/5.6

LOCATION OF MONITORING SITES

Rockwater Pty Ltd

460000mE
465000mE
470000mE
475000mN
8120000mN
8115000mN
8110000mN
Beagle Bay 1 km
To Cape Leveque
Site 5
N
1:50 000
0
2.5
Kilometres
MAP GRID of AUSTRALIA
GRID BASED ON TRANSVERSE MERCATOR PROJECTION
Beagle Bay Access Road
Airstrip
Seismic Line
Site 13
Site 23
BROOME CAPE LEVEQUE ROAD
OLD CAPE LEVEQUE ROAD
Site 18
Site 12
Site 4
Site 3
5000 ha Lease Option Area
Site 19
Site 16
Site 17
P3 *Phyllanthus aridus*
Site 2
Vincent Well
ACCESS TRACK
Habitat Corridors
Site 22
Plantation Development Site
Nested Site
Site 1
Site 20
Site 24
Nested Site
Teak
Sandalwood
Sandalwood
Sandalwood
Teak 100 ha
Teak
Sandalwood
Sandalwood
Sandalwood
Nested Site
Site 21
Site 11
Trial Lease Area
Fence Line
Site 15
Nested Site
Site 9
Site 10
Site 8
Site 7
Site 6
Site 14
Country Downs Station



Legend
- Flora Survey Location Sites
- Greater Project Area

JOHN BRENNAN AND ASSOCIATES
Project Managers

Author: M.L. / S.C.
Drawn: S.Coleman

Client: TROPICAL TIMBER PLANTATIONS PTY LTD

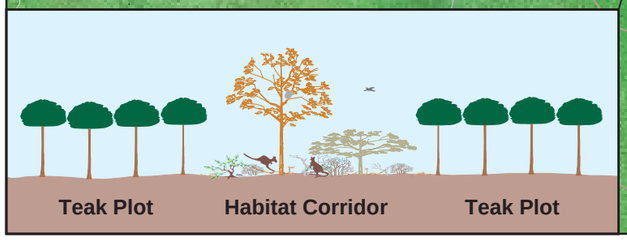
Project: BEAGLE BAY PROJECT

BEAGLE BAY PLANTATION FLORA SITE LOCATIONS

A3

Date: 19 January 2004
Scale: 1:50 000
Figure No. 5.7
Plan No. BB-004

460000mE
465000mE
470000mE
475000mE
8120000mN
8115000mN
8110000mN
N
1:50 000
0
2.5
Kilometres
MAP GRID of AUSTRALIA
GRID BASED ON TRANSVERSE MERCATOR PROJECTION
Beagle Bay 1 km
To Cape Leveque
Beagle Bay Access Road
Airstrip
Seismic Line
BROOME CAPE LEVEQUE ROAD
OLD CAPE LEVEQUE ROAD
Site 4
5000 ha Lease Option Area
Plantation Development Site
ACCESS TRACK
Habitat Corridors
Site 1
Site 2
Site 3
Site 5
Site 6
Teak
Sandalwood
Teak 100 ha
Trial Lease Area
Vincent Well
Fence Line
Country Downs Station



Legend
- Fauna Survey Location Sites
- Greater Project Area

JOHN BRENNAN AND ASSOCIATES
Project Managers

Author: J.B. / S.C.
Drawn: S.Coleman

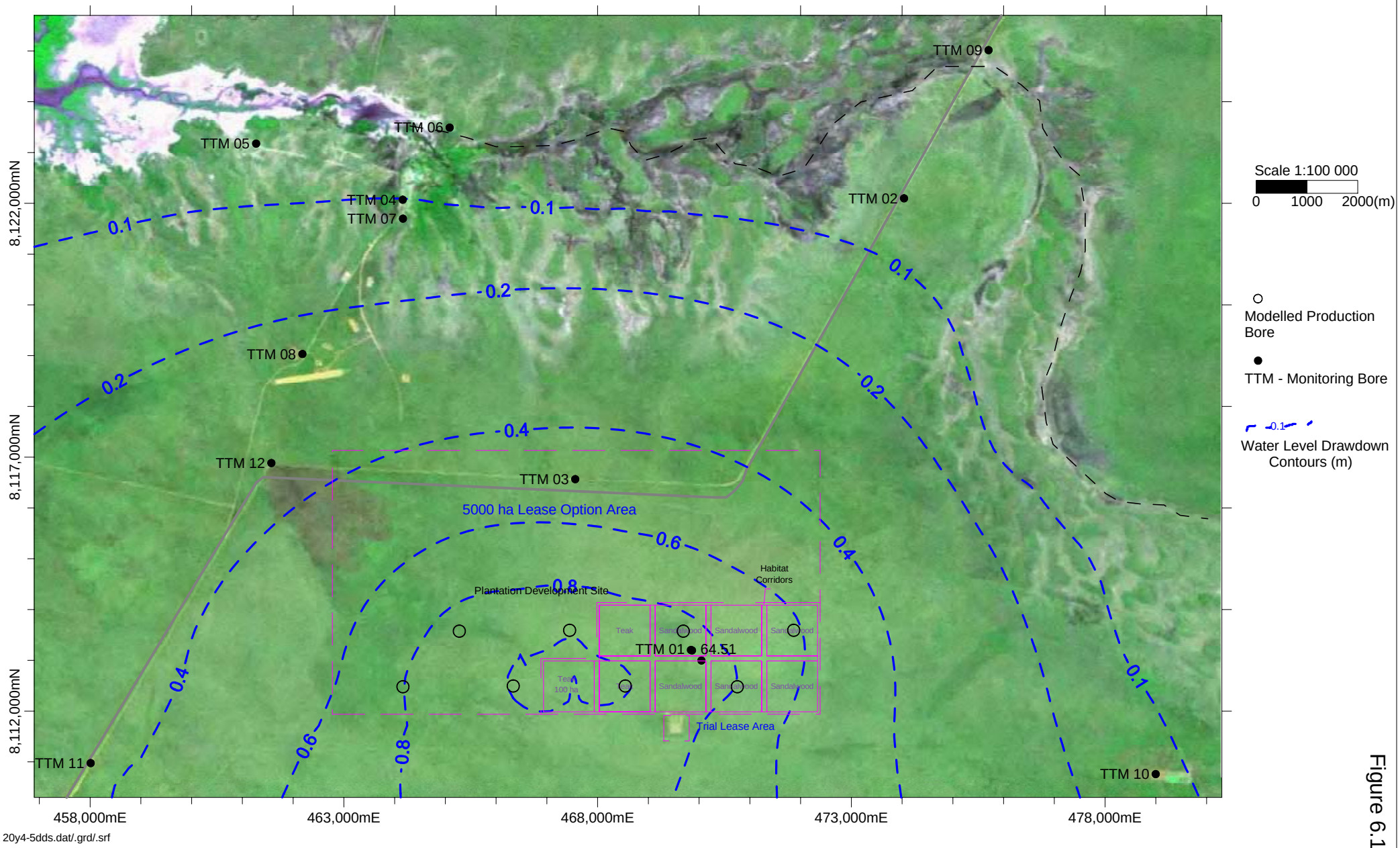
Client: TROPICAL TIMBER PLANTATIONS PTY LTD

Project: BEAGLE BAY PROJECT

BEAGLE BAY PLANTATION
FAUNA SITE LOCATIONS

A3

Date: 19 January 2004
Scale: 1:50 000
Figure No. 5.11
Plan No. BB-003



20y4-5dds.dat/.grd/.srf

Figure 6.1

CLIENT: Tropical Timber Plantations

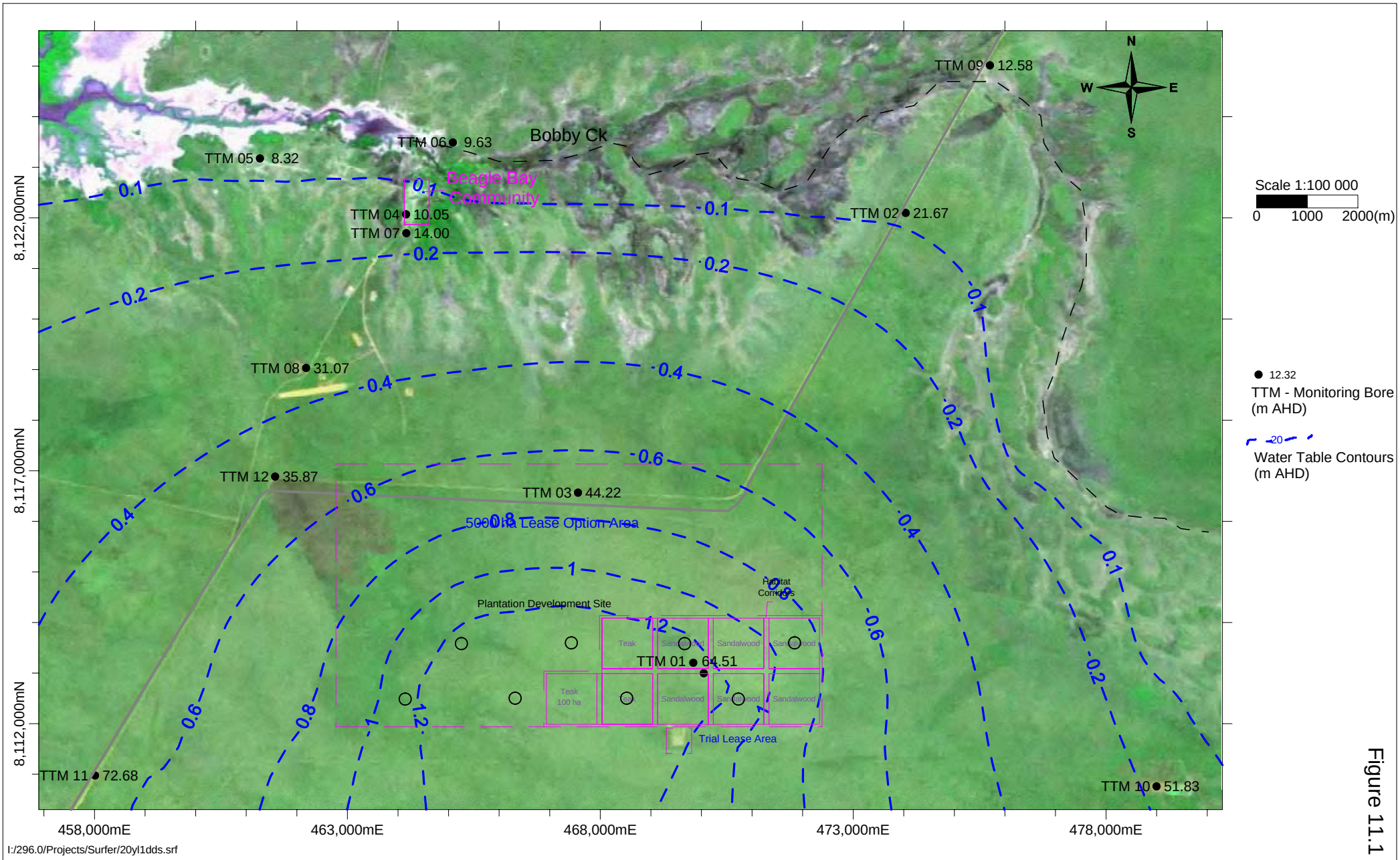
PROJECT: Beagle Bay Project

DATE: December 2004

Dwg. No: 296.0/6.1

MODEL-CALCULATED GROUNDWATER LEVEL DRAWDOWNS (m) LAYER 1 AFTER 20 YEARS PUMPING AT 4.5 GL/yr

Rockwater Pty Ltd



I:/296.0/Projects/Surfer/20yl1dds.srf

Figure 11.1

CLIENT: Tropical Timber Plantations

PROJECT: Beagle Bay Project

DATE: March 2004

Dwg. No: 296.0/11.1

MODEL-CALCULATED GROUNDWATER LEVEL DRAWDOWNS (m) AFTER 20 YEARS PUMPING, LAYER 1

Rockwater Pty Ltd

APPENDIX B

Stakeholder Consultation Table

DATE	STAKEHOLDER GROUP	CONSULTATION FORMAT	ISSUES RAISED
	Minister for Industry and Resources	Project Stage 2 Briefing Meeting	
28.1.03	Kimberley Regional Fire Management Project	Project update	
28.1.03	BBC Councillors & CEO	Project update	• Groundwater investigations and PER progress
5.3.03	Kimberley Development Commission (KDC)	Project Briefing Meeting	
10.3.03	Department of Environment (DoE)	Project Briefing Meeting	• Likely requirements for groundwater investigations. • Impact on mound springs.
10.3.03	Member for the Kimberley	Project Stage 2 Briefing Meeting	• Employment and training. • Culture and heritage.
13.03.03	Environmental Protection Authority (EPA)	Project Briefing Meeting	• Project Overview and Summary
13.3.03	EPA	Project Stage 2 Briefing Meeting	• Land clearing. • Water resources and usage. • Pest management. • Mound springs. • Threatened ecological communities.
13.3.03	AusIndustry	Project Stage 2 Briefing Meeting	
14.3.03	Department of Industry and Resources	Project Stage 2 Briefing Meeting	• Government assistance to project. • Project costs / revenues. • Infrastructure. • Transport. • Marketing.
21.3.03	Department of Conservation and Land Management (CALM) Kununurra and Broome	Project Stage 2 Briefing Meeting	
25.3.03	Forest Products Commission (FPC)	Project Stage 2 Briefing Meeting	• Tropical forestry potential. • Information sharing. • Collaborative projects. • Carbon trading. • Foreign investment.

DATE	STAKEHOLDER GROUP	CONSULTATION FORMAT	ISSUES RAISED
28.3.03	Kimberley Primary Industry Association (KPIA)	Project Stage 2 Briefing Meeting	• New industry potential. • Local regional economics. • Employment and training. • Transport and infrastructure. • Government assistance. • Research & Development.
28.3.03	Broome Shire	Project Stage 2 Briefing Meeting	• Planning. • Infrastructure. • Transport.
1.4.03	Office of Major Projects (OMP)	Project Stage 2 Briefing Meeting	
3.4.03	Broome Chamber of Commerce (BCC)	Project Briefing Meeting	• Project Overview and Summary
3.4.03	Broome Chamber of Commerce (BCC)	Project Stage 2 Briefing Meeting	• New Kimberley industry potential. • Employment. • Training. • Local contractor and suppliers opportunities. • Use of Broome port. • Export income.
7.4.03	Broome Shire Council	Project Briefing Meeting	• Project Overview and Summary
7.4.03	Broome Shire	Project Stage 2 Briefing Meeting	• New Kimberley industry potential. • Employment. • Training. • Local contractor and suppliers opportunities. • Use of Broome port. • Export income.
7.4.03	Beagle Bay Community Inc Annual General Meeting (BBC)	Project Stage 2 Briefing Meeting	• Employment opportunities. • Workers transport. • School children involvement. • Time to project commencement.
11.4.03	Broome Growers Association (BGA)	Project Stage 2 Briefing Meeting	• Industry potential.
16.4.03	OMP	Project Stage 2 Briefing Meeting	• OMP assistance in agency liaison. • Marketing and promotion.

DATE	STAKEHOLDER GROUP	CONSULTATION FORMAT	ISSUES RAISED
17.4.03	Kimberley Land Council (KLC)	Project Stage 2 Briefing Meeting	• Aboriginal employment. • Financial outcomes for Beagle Bay.
17.4.03	Star Radio	Project Stage 2 Briefing Meeting	• Public meeting announcements.
22.4.03	Burrdunk (Beagle Bay Company)	Project Stage 2 Briefing Meeting for Directors	
24.4.03	Beagle Bay Elders	Project Stage 2 Briefing Meeting	
24.4.03	KPIA, BCC, OMP, DEP, DIA, ALT, Broome Shire, Dampier Peninsula Communities, ABC, GWN, Broome Advertiser, KLC, Kimberley Regional Fire Management Project, FPC, Agriculture WA, Kimberley, CALM, WRC, DOIR, Office of Aboriginal Economic Development (OAED), ACC, Carol Martin, Tom Stephens, Kimberley College of TAFE.	Invitations to public meeting and copy of public consultation leaflet.	
28.4.03	ABC	Project Stage 2 Briefing Meeting	• Interview regarding Public Meeting.
1.5.03	General Public	Public Meeting.	
1.5.03	General Public	Pamphlet in local paper Reply paid comment submission opportunity	• Commendation on project concept. • Land clearing. • Traditional ownership. • Sustainability. • Plantation layout and fire hazard. • Economic sustainability. • Water use. • Plant susceptibility to disease. • Chemical application.
1.5.03	Australian Conservation Foundation, Environs Kimberley (EK)	Project Stage 2 Briefing Meeting	• Emphasis on environmental management plans.
1.5.03	Public Meeting - Broome Civic Centre		• Wide-ranging inputs.
1.5.03	Member for Mining and Pastoral Area	Project Stage 2 Briefing Meeting	• Economic benefits to region.
20.5.03	Minister for the Environment	Project Stage 2 Briefing Meeting	•

DATE	STAKEHOLDER GROUP	CONSULTATION FORMAT	ISSUES RAISED
21.5.03	Minister for Regional Services and Local Govt.	Project Stage 2 Briefing Meeting	
25.5.03	Minister for Ag, Forestry & Fisheries		• Site visit • Introduction to elders. • Briefing.
26.5.03	ABC		• News item regarding the public response to public comment submissions.
28.5.03	Broome Advertiser		• EK press release article- concerns regarding pesticides / water usage. • Land clearing.
12.6.03	BB, Australian and Torres Strait Islander Services (ATSIS)	Project Update	
18.6.03	Rotary Club of Broome	Project Stage 2 Briefing Meeting	• Questions re investment opportunities. • BB involvement. • Export. • Potential spin-offs for Broome. • Employment opportunities.
29.6.03	Environs Kimberley		• Site visit • Briefing & discussions re pest/fertiliser management. • Water use. • Land clearing. • Host selection. • Effects on mound springs. • BB involvement.
3.7.03	BB, OAED		• Project up-date regarding the Scoping Document and Groundwater Investigation Program
23.7.03	Catholic Diocese of Broome		• Site visit. • Project briefing. • Discussion regarding employment & training opportunities for Beagle Bay people.
24.7.03	Member for Mining & Pastoral Area		• Site visit.

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			• Briefing & discussions regarding pest/fertiliser management. • Water use. • Land clearing. • Beagle Bay involvement.
28.7.03	Deputy Commissioner for Soil & Land Conservation	Up-date Meeting	
6.8.03	OMP	Up-date Meeting	
6.8.03	Member for Mining and Pastoral Area	Up-date Meeting	• Up-date regarding Groundwater Investigation Program.
7.8.03	BB Peoples meeting	Community Meeting	
13.8.03	BB Staff, Council, community members, Ecologia, Rockwater, CALM Broome, ALT/DIA, Broome Shire, EK, OAED, KC TAFE, ATSIS, DET, Mowanjum Community CEO, KPIA, Talbot & Olivier, DPI Broome, DLG & R, KACC	Stakeholder Meeting	• Briefing on environmental management (Ecologia) and groundwater resources & investigations (Rockwater). • Wide-ranging discussions included: o methods of land clearing, o transport/frequency, o water resources, o flora & fauna surveys, o decommissioning processes, o pesticide/herbicide monitoring, o fertiliser application, o potential weediness of tree species, o project finance & structure of venture companies, o role of ALT/DIA, o local employment opportunities/ CDEP or wages, o numbers of jobs, o type of work/training, o mound springs/salt-water interface issues.
2.9.03	WRC, BBC, DIA	Briefing re groundwater investigations requirement.	• Inspection of some mound springs

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18.9.03	Aboriginal Lands Trust Members, DIA staff	Up-date Meeting	• Project status and development proposals
19.9.03	CoS - Minister Agriculture, Forestry, etc	Up-date Meeting	• Project update
9.10.03	CALM	Plantation layout meeting	• Meeting to discuss plantation layout, wildlife corridors, etc
15.10.03	FPC	Up-date Meeting	• Inspection of trial crops
24.10.03	KDC - Kimberley Investment Tour, KDC Staff, National & international bankers & stockbrokers	Project overview presentation	
25.10.03	State Ministers for Tourism and the North West Federal Minister for Transport & Regional Services	Project briefing	
13.11.03	EK	Project up-date	•
24.11.03	OAED	Project update and site inspection	•
27.11.03	Beagle Bay Burrdunk (BBB)	Update meeting	• Current status of project, appointment of BBB Project Manager, general development plans.
5.12.03	President - Broome Chamber of Commerce	Project up-date	
11.12.03	BCC - AGM Members and executive	Project up-date	
30.12.03	OAED	Project update	• Appointment of BBB Project Manager
19.1.04	Broome Advertiser	News item in Broome Advertiser	• Current status of project
23.1.04	Goolarri Media TV Production Staff	Production of 5 minute TV segment to go to air on GTV 35 daily for 3 months	
16.04.04	DoE, CALM, Rockwater, EPA, Ecologia	PER update meeting	• Validity of modelling used in Groundwater Investigations. • Lack of ecological investigations into wetland systems north of the plantation site. • Effects of drawdown from groundwater pumping on wetland systems.
21.05.04	DoE	Meeting	• Discussions on works required for the Environmental Water Requirements of the Wetland

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			Systems north of the plantation site.
01.06.04	Minister for Industry and Resources	Project Update	
21.06.04	Australian Greenhouse Office	Discussion on Carbon Credits	
23.06.04	ONF Land Management	Project Briefing	
26.07.04	Department of Business, Industry and Resource Development – Northern Territory	Project Briefing	• Forestry
27.07.04	Department of Business, Industry and Resource Development – Northern Territory	Project Briefing	• Entomology
29.07.04	Greening Australia – Northern Territory	Project Briefing	
30.07.04	KPIA – Kununurra	Project Update	
12.08.04	Department of Indigenous Affairs - Broome	Project Update	
12.08.04	EK	Project Update	
16.08.04	BBB members	Project Update	
01.09.04	DoE	Meeting	• Monitoring of wetland areas
03.09.04	OAED	Meeting	• Project Update
21.09.04	OAED	Site Visit	• Review of trial plantation
06.10.04	BBC	Meeting	• Project update