

**In the Land and
Environment Court
of New South Wales**

No. 10801 of 2007

**Gerroa Environmental
Protection Society**
Applicant

Minister for Planning
First Respondent

Cleary Bros (Bombo) Pty Ltd
Second Respondent

Order

The Court makes the following orders:

1. The appeal is upheld.
2. Approval is granted to application 05/0099 for extraction and processing operations on land comprising Lot A DP 185785 and part of the land in Certificate of Title Vol 5841 Folio 139 subject to the conditions in Annexure A.
3. Exhibits may be returned.

Ordered: 2 September 2008

By the Court

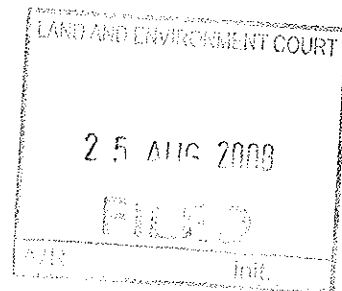
Susan Dixon

Registrar



**IN THE LAND AND ENVIRONMENT COURT OF
NEW SOUTH WALES**

No. 10801 of 2007



GERROA ENVIRONMENT PROTECTION SOCIETY INC
Applicant

MINISTER FOR PLANNING
First Respondent

CLEARY BROS (BOMBO) PTY LTD
Second Respondent

**CONSOLIDATED
CONDITIONS OF APPROVAL**

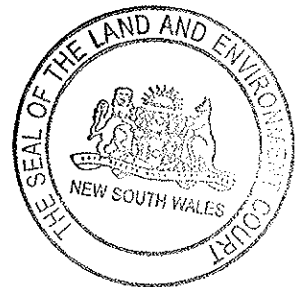
25 August 2008

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DEFINITIONS

AEMR	Annual Environmental Management Report
CCC	Community Consultative Committee
Compensatory Planting	The Compensatory Planting marked 2A.1, 2A.2, 2A.3, 2B.1, 2B.2, 2C.1, 2C.2, 2D, 2E, 5C.1 on the figure in Appendix 3
Conservation Area	The Vegetation Conservation Area shown in the figure in Appendix 4
DECC	Department of Environment and Climate Change
Department	Department of Planning
Director-General	Director-General of the Department of Planning, or delegate
DPI	Department of Primary Industries
DWE	Department of Water and Energy
EA	Environmental Assessment for the project titled <i>Gerroa Sand Quarry Proposed Extension Environmental Assessment</i> Volumes 1 and 2, dated October 2006, prepared by Perram & Partners
East-West Link	Area shown cross-hatched on the figure in Appendix 3
EMP	Environmental Management Plan
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
Extraction Area	The extraction area as shown in the figure in Appendix 1
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Landscape and Rehabilitation Management Plan	The Plan approved by the Director-General under condition 21
Minister	Minister for Planning, or delegate
National Park	Seven Mile Beach National Park
Northern Corridor	Area shown stippled on the figure in Appendix 3
Privately owned land	Land not owned by a public agency or the Proponent or its related companies
Project	The extension and continued operation of the Gerroa Sand Quarry as described in the EA
Project Area	As defined in Vegetation Management Area and Site Plan shown in the figure in Appendix 1
Proponent	Cleary Bros (Bombo) Pty Ltd, or its successors
Relevant Agencies	DECC, Shoalhaven Council and Kiama Council
RTA	Roads and Traffic Authority
Site	Land to which the project application applies
SSF	Swamp Sclerophyll Forest vegetation
Statement of Commitments	The commitments in Appendix 2
Southern Rehabilitation Area	Zones 1.2, 1.3 and 2A.2 on the figure in Appendix 3



SCHEDULE 2 ADMINISTRATIVE

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project in accordance with the:
 - (a) EA;
 - (b) Statement of Commitments; and
 - (c) conditions of this approval.

Note: The layout of the project is shown in the figure in Appendix 1.

3. If there is any inconsistency between the EA, Statement of Commitments and conditions of this approval, the conditions shall prevail to the extent of the inconsistency.
4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
 - (a) any reports, plans, programs or correspondence that are submitted in accordance with this approval; and
 - (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Extraction and processing operations may take place until 31 July 2023.
- 5A. Under this approval, the Proponent is required to rehabilitate the site to the satisfaction of the Director-General. Consequently this approval will continue to apply in all other respects other than the right to conduct extraction and processing operations until the site has been rehabilitated to a satisfactory standard. Inter alia, to avoid doubt, the site has not been rehabilitated to a satisfactory standard unless Conditions 16 and 17 of this approval have been complied with.
6. The Proponent shall not transport more than 80,000 tonnes of product from the site in a year.

Note: This condition applies to the combined production of quarry products from the existing quarry and the quarry extension, and does not include the ancillary extractive material that would be imported onto the site and dispatched with the quarry's products.

Surrender of Consents

7. Within 3 months of the date of this approval, the Proponent shall surrender all existing development consents associated with the Gerroa Sand Quarry, in accordance with clause 97 of the EP&A Regulation.

Note: This approval will apply to all phases and components of the quarry from the date of this approval.

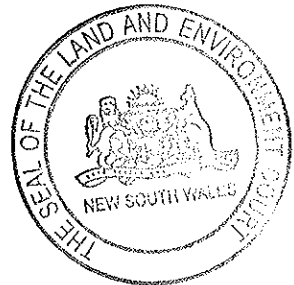
Operation of Plant and Equipment

8. The Proponent shall ensure that all plant and equipment used at the site is:
 - (a) maintained in a proper and efficient condition; and
 - (b) operated in a proper and efficient condition.

Section 94 Contributions

9. The Proponent shall pay a contribution of:
 - (a) 30 cents per tonne of material hauled from the site to Shoalhaven City Council; and
 - (b) 20 cents per tonne of material hauled from the site to Kiama Council,for the maintenance/repair of public roads in accordance with Shoalhaven City Council's *Section 94 Contributions Plan 1993 - Amendment No.71 Berry*, to the satisfaction of the Director-General.

Note: These contribution rates shall be paid and indexed in accordance with the applicable Contributions Plan.



SCHEDULE 3 ENVIRONMENTAL PERFORMANCE

GENERAL EXTRACTION AND PROCESSING PROVISIONS

Identification of Boundaries

1. Within 3 months of the date of this approval, or as otherwise agreed by the Director-General, the Proponent shall.
 - (a) engage an independent registered surveyor to survey the boundaries of the approved limit of extraction;
 - (b) submit a survey plan of these boundaries to the Director-General; and
 - (c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify those limits.

Note: The limit of extraction is shown conceptually on the plan in Appendix 1.

NOISE

Impact Assessment Criteria

2. The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1.

<i>Location</i>	<i>L_{Aeq} (15 min) dB(A)</i>
670 Beach Road	41
11 Bangarrai Street	40
Seven Mile Beach Holiday Park	36
Coralea Property	43
Picnic Area 1	46
Picnic Area 2	43

Table 1: Noise Impact Assessment Criteria

Notes:

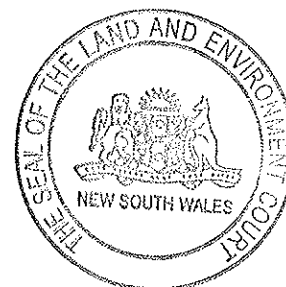
- *To determine compliance with these noise limits, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise level where applicable.*
- *The noise limits apply under meteorological conditions of wind speed up to 3m/s at 10 metres above ground level.*
- *The noise limits do not apply if the Proponent has an agreement with the relevant owner/s of these residences/land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement*

Hours of Operation

3. The project shall only operate:
 - (a) between 7.00am and 6.00pm Monday to Friday;
 - (b) between 7.00am and 1.00pm on Saturdays; and
 - (c) at no time on Sundays or Public Holidays.

Noise Monitoring

4. The Proponent shall prepare and implement a Noise Monitoring Program for the project to the satisfaction of the Director-General. This program must:
 - (a) be submitted to the Director-General within 3 months of the date of this approval;
 - (b) be prepared in consultation with the DECC; and
 - (c) include details of how the noise performance of the project would be monitored, and include a noise monitoring protocol for evaluating compliance with the relevant noise limits in this approval.



AIR QUALITY

Impact Assessment Criteria

5. The Proponent shall ensure that dust generated by the project does not cause additional exceedances of the criteria listed in Table 2 at any residence on privately owned land, or on more than 25 percent of any privately owned land.

<i>Pollutant</i>	<i>Averaging period</i>	<i>Maximum increase in deposited dust level</i>	<i>Maximum total deposited dust level</i>
Deposited dust	Annual	2 g/m ² /month	4 g/m ² /month

Table 2: Long Term Impact Assessment Criteria for Deposited Dust

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Operating Conditions

6. The Proponent shall ensure any visible air pollution generated by the project is assessed regularly, and that quarrying operations are relocated, modified, and/or stopped as required to minimise air quality impacts on privately owned land.

Air Quality Monitoring

7. The Proponent shall prepare and implement an Air Quality Monitoring Program for the project to the satisfaction of the Director-General. This program must:
- be submitted to the Director-General within 3 months of the date of this approval;
 - be prepared in consultation with DECC; and
 - include details of how the air quality performance of the project would be monitored, and include a protocol for evaluating compliance with the relevant air quality criteria in this approval.

METEOROLOGICAL MONITORING

8. During the project, the Proponent shall maintain a suitable meteorological station on (or in close proximity to) the site to the satisfaction of the DECC and the Director-General. This station must satisfy the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* publication.

SURFACE AND GROUND WATER

Discharges

9. The Proponent shall not discharge any water from the quarry or its associated operations except for the purpose of restoring normal pond level after significant rainfall. Any such discharge shall be in accordance with an EPL.

Water Quality Objectives

10. Unless otherwise approved by the Director-General, the Applicant shall aim to meet the water quality objectives in Table 3 for water in the dredge pond and in ground water adjacent the dredge pond.



<i>Pollutant</i>	<i>Unit of Measure</i>	<i>Water Quality Objective</i>
Turbidity	NTU	5-20
pH	pH	6- 8.5
Salinity	µS/cm	<1,500
Dissolved oxygen	mg/L (saturation)	>6 (>80-90%)
Total phosphorus	µg/L	<30
Total nitrogen	µg/L	<350
Chlorophyll-a	µg/L	<5
Faecal coliforms	Median No./100mL	<1000

Pollutant	Unit of Measure	Water Quality Objective
Enterococci	Median No./100mL	<230
Algae and blue-green algae	No.cells/mL	<15,000
Sodium	mg/L	<400
Potassium ion	mg/L	<50
Magnesium ion	mg/L	<50
Chloride ion	mg/L	<300
Sulphate ion	mg/L	<250
Bicarbonate ion	mg/L	<750
Soluble Iron ion	mg/L	<6
Ammonium ion	mg/L	<20

Table 3: Water Quality Objectives

Notes:

- The objectives for dissolved oxygen, turbidity and algae are relevant to surface water only;
- The Department acknowledges that short term exceedances of these objectives may occur during natural events such as heavy rainfall or tidal saline water inflow.

Management and Monitoring

11. The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must:

- be submitted to the Director-General within 3 months of the date of this approval;
- be prepared in consultation with the DWE and DECC; and
- include a:

- Erosion and Sediment Control Plan;
- Surface Water Monitoring Program;
- Ground Water Monitoring Program; and
- Acid Sulfate Soils Management Plan.

include a strategy for the placement of high hydraulic conductivity material progressively during the works. High conductivity material is to be placed at intervals along the length of the pond extension. This material is to be of a hydraulic conductivity, and placed at such intervals and in such places, that will maintain comparable typical groundwater flow through to the Swamp Sclerophyll Forest as existed prior to the proposed excavation. The existing and comparable typical groundwater flow is to be determined in accordance with the calculation based on the existing typical hydraulic gradient and the hydraulic conductivity of the *in situ* strata provided for in condition 14(c) below.

12. The Erosion and Sediment Control Plan shall:

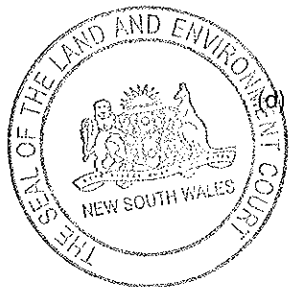
- be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
- identify activities that could cause soil erosion and generate sediment;
- describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters;
- describe the location, function, and capacity of erosion and sediment control structures; and
- describe what measures would be implemented to maintain (and if necessary decommission) the structures over time.

13. The Surface Water Monitoring Program shall include:

- detailed baseline data on surface water quality in the main channel in Foys Swamp;
- surface water impact assessment criteria;
- a program to monitor surface water quality;
- a program to monitor bank and bed stability of the dredge pond;
- a protocol for the investigation, notification and mitigation of identified exceedances of the surface water impact assessment criteria; and
- a program to monitor the effectiveness of the Erosion and Sediment Control Plan.

14. The Ground Water Monitoring Program shall include:

- a statistical analysis of baseline ground water level and water quality data;
- ground water impact assessment criteria, including criteria for assessing any impacts on ground water dependent ecosystems and vegetation;
- a program to monitor:
 - hydraulic conductivity – upon the completion of the landscaping of each 20 metre wide



- extraction zone, tests shall be conducted to ensure that the hydraulic conductivity following the placement of material is similar to the conditions prevailing prior to excavation commencing;
 - impacts on ground water dependent ecosystems and vegetation (from at least 6 boreholes at the edge of the dredge pond); and
 - water levels (at no less than monthly intervals and taken on the same day) in the dredge pond, the drain at the flood gates, monitoring bores WM1, WM1A, WM2A, WM3A, WM4, WM5, 1/Aug07, 2/Aug07, 3/Aug07, 4/Aug07, 5/Aug07 and 6/Aug07 (locations shown on Drawing 6198/208bh Revision A prepared by KF Williams & Associates, 15/2/08), and any additional bores installed at the edge of the dredge pond;
 - the in situ strata at the perimeter of the dredge pond for its current hydraulic conductivity; and
 - groundwater levels under the SSF.
- (d) monthly review of the results of the ground water monitoring by the Proponent's Environmental Officer;
- (e) a protocol for the investigation, notification and mitigation of any identified exceedances of the ground water impact assessment criteria. The protocol shall include the following measures to be undertaken in the event that the water level in any bore lies outside the range of two standard deviations from the mean for more than 6 months and does not follow a trend that can be attributed to climatic effects, as evident in other monitoring bores, undertake the following actions:
- sand extraction shall be halted immediately while further investigations and any necessary remedial action are undertaken;
 - additional water level measurements shall be taken in temporary bores in the vicinity of the affected bore to confirm the ground water levels in that locality;
 - a qualified hydrogeologist shall be engaged to assess the significance of the variance from expected ground water behaviour;
 - if the review of the hydrogeologist considers that action is necessary to maintain the pre-existing ground water regime in the vicinity of the SSF he/she shall be requested to recommend an appropriate remedial action plan. This plan may include adjustment to the placement strategy for panels of high hydraulic conductivity material required by Condition 11(d); and
 - the recommended remedial action plan shall be submitted for the Director-General's approval and subsequently implemented by the Proponent;
- (f) include measures to mitigate, remediate and/or compensate any identified ground water impacts.
15. The Acid Sulfate Soils Management Plan shall:
- (a) be prepared in accordance with the *Acid Sulphate Soils Assessment and Management Guidelines*;
- (b) describe the measures to manage acid sulfate soils;
- (c) include an acid sulfate soils sampling and monitoring program.

LANDSCAPE MANAGEMENT

Planning Agreement

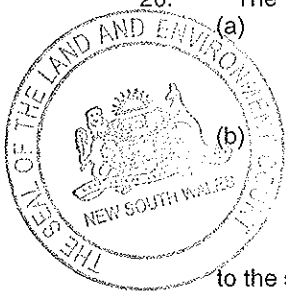
16. Within 3 months of the date of this approval, the Proponent shall:
- (a) enter into a Planning Agreement with the Minister under section 93F of the EP&A Act. This Agreement must be generally consistent with commitments in the terms of the offer made by the Proponent to the Minister on 1 May 2007, and must specifically provide for the:
- (i) implementation of the Compensatory Planting shown in the plan in Appendix 3;
 - (ii) protection of the vegetation in the area shown in Appendix 4 (*Conservation Area*);
 - (iii) identification by survey plan of the Conservation Area shown in the plan titled Vegetation Conservation Area (shown conceptually in Appendix 4);
 - (iv) implementation of the Landscape and Rehabilitation Management Plan for the site; and
 - (v) insurance of the Conservation Area against the impact of fire or vandalism;
- (b) register the Planning Agreement on the title of the land in accordance with the Real Property Act 1900.

Landscaping and Rehabilitation

17. The Proponent shall:
- (a) progressively rehabilitate the site in a manner that is generally consistent with the rehabilitation objectives in Chapter 3.8 of the EA (see Appendix 5);
- (b) ensure that within 4 years of the date of this approval, the additional plantings in the Northern Corridor and Southern Rehabilitation Area are comprised of at least 60% of the plant species recorded for the representative plant communities in the quarry extension area, such as Bangalay Sand Forest and Littoral Rainforest;



- (c) implement the Compensatory Planting in a manner that is consistent with the Landscape and Rehabilitation Management Plan referred to in Condition 21, including the:
- establishment, conservation and maintenance of approximately 23.99 hectares of native vegetation;
 - enhance 5.25 hectares of the vegetation in Areas 4 and 5; and
 - conservation and maintenance of approximately 46.25 hectares of the remnant vegetation on the site (shown conceptually in Appendix 3); and the best practice guidelines set out in:
 - *Bringing the bush back to Western Sydney: Best practice guidelines for bush regeneration on the Cumberland Plain* Department of Infrastructure, Planning and Natural Resources (2003) ("DIPNR (2003)"); and
 - *Recovering bushland on the Cumberland Plains: Best practice guidelines for the management and restoration of bushland* Department of Environment and Conservation (2005) ("DEC (2005)");
 to the satisfaction of the Director-General.
18. Within 12 months of the date of this approval, the Proponent shall densely plant *Banksia Integrifolia* along the 5 metre setback zones to the Littoral Rainforest vegetation and these areas shall thereafter be planted with species as may be specified in the Landscape and Rehabilitation Management Plan.
19. The Proponent shall:
- (a) clearly identify the boundary of the extension area in consultation with a suitably qualified ecologist prior to the commencement of any construction works to ensure that an adequate buffer distance is maintained from the dredging activities/quarry operations to the Conservation Area and SSF;
 - (b) ensure that all dredging activities and associated quarry operations remain within the defined boundary of the Project Area (shown on the plan in Appendix 1);
 - (c) develop a monitoring program and document it in the EMP to demonstrate that the defined boundary of the quarry extension area is maintained and not compromised during operations; and
 - (d) revegetate the buffer area with appropriate native species and be subject to the Landscape and Rehabilitation Management Plan for inclusion in the EMP for its long term restoration and management and be not less than 5 metres wide.
20. The Proponent shall:
- (a) commence the Compensatory Planting and the vegetation screen along the Crooked River Road frontage north of the east-west link (as shown conceptually in Appendix 3), within 12 months of the date of this approval or when sufficient propagation material has been collected; and
 - (b) not sever the east-west link until it can be demonstrated to the satisfaction of the Director General that the established communities represented in the Northern Corridor comprise at least 60% of the native flora species as set out in Appendix 6 and the Northern Corridor is successful according to the criteria in Condition 25;
- to the satisfaction of the Director-General.



In this Condition, "not sever" means that no works of clearing, tree removal or other habitat removal shall take place which will reduce or impede the function of the East-West Corridor to provide connectivity to the National Park from Zone 1.1 as measured by Condition 25(b).

Restriction on clearing of certain land

- 20A Within the area marked "X" on Appendix 1, a person shall not clear any of the land of vegetation or trees without the consent of the Director-General.

Landscape and Rehabilitation Management Plan

- 21 The Proponent shall prepare and implement a Landscape and Rehabilitation Management Plan for the project to the satisfaction of the Director-General.

This plan must:

- (a) be submitted to the Director-General for approval within 3 months of the date of this approval;
- (b) be generally in accordance with the draft Landscape and Rehabilitation Management Plan, dated 20 August 2008 prepared by Kevin Mills & Associates and accepted by the Land and Environment Court as appropriate;
- (c) be prepared in consultation with the DECC by suitably qualified expert/s approved by the Director-General;
- (d) clearly identify the biological purpose of the linkage and describe how its design, dimensions and management will achieve this purpose;

- (e) collect baseline data for the Project Area including flora species, fauna species and ecological function parameters;
- (f) include a figure showing the location, extent and size of areas to be planted/regenerated for each community to be impacted;
- (g) identify strategies to use the natural resources of the impacted areas to their full potential, including:
 - all plant material to be used as a primary source for restoration and rehabilitation should be collected and propagated from relevant communities prior to clearing;
 - all areas proposed for replanting should be assessed initially for their regeneration potential appropriate restoration strategies should follow best practice guidelines as described in DIPNR (2003) and DEC (2005);
- (h) describe in general the short, medium and long-term measures that would be implemented to:
 - rehabilitate the site;
 - implement the Compensatory Planting shown in Appendix 3;
 - manage the remnant vegetation and habitat on the site, including the areas of Bangalay Sand Forest to be retained (shown conceptually in Appendix 3);
 - landscape the site (including the bunds) to mitigate visual impacts of the project; and
 - Upgrade and protect the remaining area of Littoral Rainforest on the eastern side of the pond extension
- (i) describe in detail the measures that would be implemented over the first 5 years and every subsequent 5 year period, to rehabilitate and manage the landscape and vegetation on the site, including
 - setting clear targets to the satisfaction of the Director-General to determine the level of success and make timely changes to management strategies, as necessary;
 - monitoring each vegetation type separately;
- (j) set completion criteria for the rehabilitation of the site (i.e. when plantings are self-sustaining);
- (k) describe how the performance of these measures would be monitored over time; and
- (l) include a Long Term Management Plan.

21A The Proponent shall engage a qualified ecologist, bush regeneration or providence nursery group who will develop a program consistent with the objectives and procedures set out in the draft Landscape and Rehabilitation Management Plan and this program will address the following issues:

- (a) soil testing;
 - (b) on site collection of seed and other propagation material;
 - (c) an assessment of the need to develop plants on the site;
 - (d) a program of successional plantings and management that will achieve the agreed purposes of the planting;
 - (e) targets for short term, medium term and long term planting and management;
 - (f) monitoring requirements;
 - (g) reporting frequency and methodology;
 - (h) consultation with the relevant government agencies;
 - (i) water quality monitoring; and
 - (j) quantitative vegetation monitoring;
- unless otherwise incorporated in the draft Landscape and Rehabilitation Management Plan.



22. The Landscape and Rehabilitation Management Plan must include:

- (a) the objectives for the rehabilitation of the site and implementation of the Compensatory Planting and the vegetation screen along the Crooked River Road frontage north of the east-west link;
- (b) a description of how the rehabilitation of the site and implementation of the Compensatory Planting and how the vegetation screen along the Crooked River Road frontage would be integrated with the surrounding vegetation to provide a comprehensive strategic framework for the restoration and enhancement of the landscape over time;
- (c) a description of the short, medium, and long-term measures that would be implemented to:
 - rehabilitate the site;
 - implement the Compensatory Planting;
 - manage the remnant vegetation and habitat on the site; and
 - landscape the site (including the bunds) to mitigate visual impacts of the project;
- (d) a detailed description of the performance and completion criteria for the rehabilitation of the site and implementation of the Compensatory Planting and the vegetation screen along the Crooked River Road frontage;
- (e) a detailed description of what measures would be implemented over the next 5 years to rehabilitate the site, and implement both the Compensatory Planting and the vegetation screen along the Crooked River Road frontage, including the procedures for:
 - undertaking pre-clearance surveys;
 - conserving and reusing topsoil;
 - collecting and propagating seed for rehabilitation works;
 - salvaging and reusing material from the site for habitat enhancement, particularly tree hollows;
 - controlling weeds and feral pests;
 - controlling access;

- bushfire management;
 - managing any potential conflicts between the proposed rehabilitation of the site and implementation of the Compensatory Planting and any Aboriginal cultural heritage values in those areas;
 - progressively rehabilitate the areas disturbed by sand extraction;
 - implementing revegetation and regeneration within the disturbed and compensatory planting areas, including the establishment of canopy, sub-canopy (if relevant), understorey and ground cover vegetation;
 - reducing the visual impacts of the project; and
 - protecting areas outside the disturbance areas;
- (i) a detailed program to monitor the performance of the rehabilitation of the site and implementation of the Compensatory Planting and the vegetation screen along the Crooked River Road frontage against the relevant objectives and performance and completion criteria (see above);
- (j) a description of the potential risks to successful rehabilitation and/or revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and
- (k) details of who is responsible for monitoring, reviewing, and implementing the plan.
23. Successful establishment of the Northern Corridor shall be measured by the following criteria:
- (a) presence of native flora species;
 - (b) a majority of the flora species recorded from the removed forest occur in the area; (e.g. 60% of flora species recorded in removed forest are present);
 - (c) species from all four layers have been planted and at least 50% of the projected cover has been achieved for each of the shrub and ground cover layers;
 - (d) self-sustaining native plant populations (e.g regeneration of a second generation);
 - (e) no dominance by single flora species (e.g Bracken);
 - (f) weeds are not significantly impacting on the native vegetation;
 - (g) weeds do not represent a majority of the flora species or a higher percentage cover than the native flora species; and
 - (h) impacts such as grazing are excluded from the area.
24. Successful establishment of fauna habitat in the Northern Corridor would be measured by:
- (a) presence of species;
 - (b) a majority of the resident species recorded from the removed forest occur in the area;
 - (c) fauna populations are resident in the area;
 - (d) pest animals are controlled and not impacting upon the fauna or its habitat; and
 - (e) impacts such as grazing are excluded from the area.
25. Prior to the severance of the East-West Link the Proponent shall:
- (a) determine the presence of species in both the east-west link and northern corridor by conducting standard animal survey techniques at least twice in the first year (eg. Elliot trapping for small mammals, pitfall trapping for reptiles, observational surveys for frogs and birds, and spotlighting transects for arboreal animals);
 - (b) determine whether a majority of animal species (particularly those determined to be likely to be impacted by fragmentation) utilising the corridor in the east-west link are present in the conservation area and the northern corridor and the re-created link at the northern boundary; and
 - (c) conduct genetic analysis for a number of key species for whom genetic markers have already been developed (e.g. Brown Antechinus, Bush Rat and at least two skink species) to establish that genetic relatedness exists between individuals within the two corridors, the Conservation Area and National Park).
- If no genetic relatedness exists between individuals in the Conservation Area, northern corridor, east-west link and the National Park, then this demonstrates that neither the east-west link nor the northern corridor is functional and therefore the east-west link can be severed without creating additional fragmentation to animal populations.
- If genetic relatedness exists between individuals in the northern corridor, Conservation Area and the National Park, but not in the east-west link, then this demonstrates that the east-west link is not functional, but the northern corridor is and therefore, the east-west link can be severed without creating additional fragmentation to animal populations.
- If genetic relatedness exists between individuals in the Conservation Area, the east-west link and the National Park, but not the northern corridor, then this demonstrates that the northern corridor is not functional and the east-west link cannot be severed until there is compliance with Conditions 23 and 24.
26. The Long Term Management Strategy must be prepared in consultation with Shoalhaven Council, Kiama Council, DECC, DPI-Fisheries and the CCC, and must:
- (a) define the objectives and criteria for quarry closure and post-extraction management;
 - (b) investigate options for the future use of the site;

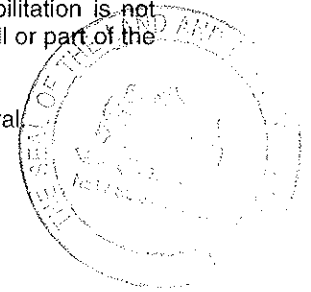


- (c) describe the measures that would be implemented to minimise or manage the ongoing environmental effects of the development; and
- (d) describe how the performance of these measures would be monitored over time.

Note: The Department accepts that the initial Long Term Management Strategy may not contain detailed information on post-extraction management.

Landscape and Rehabilitation Bond

- 27. Within 6 months of the date of this approval, the Proponent shall lodge a rehabilitation bond for the project with the Director-General. The sum of the bond shall be calculated at:
 - (a) \$2.50/m² for the total area to be disturbed by the proposed dredge pond as shown in Appendix 1; and
 - (b) \$1.00/m² for the total area of land to be rehabilitated consisting of Zones 2A.1, 2A.2, 2A.3, 2B.1, 2B.2, 2C.1, 2C.2, 2D and 2E of Appendix 3;or as otherwise directed by the Director-General.
- 28A. The rehabilitation bond shall continue to be retained after completion of the Compensatory Planting to ensure that there shall be a continuation of the Planning Agreement; and
- 28B. The Director-General may at his or her discretion and on advice from an independent environmental auditor release or vary the rehabilitation bond where conditions permit. If the rehabilitation is not completed to the satisfaction of the Director General, the Director General will call in all or part of the rehabilitation bond, and arrange for the satisfactory completion of the relevant works.
- 28C. The bond may be in the form of a Bank Guarantee or as directed by the Director-General.



ABORIGINAL HERITAGE

Aboriginal Site Conservation

- 29. The Proponent shall protect and conserve Area A, as described in the EA (as shown on the plan in Appendix 8, to the satisfaction of the Director-General.

Aboriginal Heritage Management Plan

- 30. The Proponent shall prepare and implement an Aboriginal Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must:
 - (a) be submitted to the Director-General within 3 months of the date of this approval and prior to disturbance of any identified Aboriginal object;
 - (b) be prepared in consultation with the DECC and relevant Aboriginal communities; and
 - (c) include a:
 - description of the measures that would be implemented to protect Area A and that part of Area B proposed to be conserved, as described in the EA (as shown on the plan in Appendix 8);
 - description of the measures that would be implemented for the mapping and salvage or relocation of the archaeological relics in the site including the shell midden deposit situated at the South Western corner of the Extraction Area (as shown on the plan in Appendix 8);
 - description of the measures that would be implemented if any new Aboriginal objects or relics are discovered during the project; and
 - protocol for the ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage on the site.

TRAFFIC AND TRANSPORT

Transport Routes

- 31. The Proponent shall ensure that all truck movements travelling to or originating from areas:
 - (a) south of the site use the Princes Highway, via Beach Road (except as provided for by condition 32 below); and
 - (b) north of the site use the Princes Highway, via Beach Road, Crooked River Road, Fern Street and Belinda Street.
- 32. The Proponent shall ensure that no trucks associated with the project use Gerroa Road, except where the destination lies along or adjacent to that road.



**SCHEDULE 4
ADDITIONAL PROCEDURES**

NOTIFICATION OF LANDOWNERS

1. If the results of monitoring required in Schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria, then the Proponent shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of quarry owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the relevant criteria.

INDEPENDENT REVIEW

2. If a landowner of privately owned land considers that the operations of the quarry are exceeding the impact assessment criteria in Schedule 3, then he/she may ask the Proponent in writing for an independent review of the impacts of the project on his/her land.

If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 3 months of the Director-General advising that an independent review is warranted:

- (a) consult with the landowner to determine his/her concerns;
 - (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to determine whether the project is complying with the relevant criteria in Schedule 3, and identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
 - (c) give the Director-General and landowner a copy of the independent review.
3. If the independent review determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.
 4. If the independent review determines that the quarrying operations are not complying with the relevant criteria in Schedule 3, and that the quarry is primarily responsible for this non-compliance, then the Proponent shall:
 - (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and
 - (b) conduct further monitoring to determine whether these measures ensure compliance; or
 - (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria in Schedule 3, to the satisfaction of the Director-General.

If the additional monitoring referred to above subsequently determines that the quarrying operations are complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.

If the Proponent is unable to finalise an agreement with the landowner, then the Proponent or landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 9).

5. If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 9).



**SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, MONITORING, REPORTING & AUDITING**

ENVIRONMENTAL MANAGEMENT PLAN

1. The Proponent shall prepare and implement an Environmental Management Plan for the project to the satisfaction of the Director-General. This plan must:
 - (a) be submitted to the Director-General within 6 months of the date of this approval;
 - (b) be prepared in consultation with the Relevant Agencies;
 - (c) provide the strategic context for environmental management of the project;
 - (d) identify the statutory requirements that apply to the project;
 - (e) describe in general how the environmental performance of the project would be monitored and managed;
 - (f) describe the procedures that would be implemented to:
 - keep the local community and Relevant Agencies informed about the construction, operation and environmental performance of the project;
 - receive, handle, respond to, and record complaints;
 - resolve any disputes that may arise during the life of the project;
 - respond to any non-compliance;
 - manage cumulative impacts; and
 - respond to emergencies; and
 - (g) describe the role, responsibility, authority, and accountability of the key personnel involved in the environmental management of the project.

ENVIRONMENTAL MONITORING PROGRAM

2. The Proponent shall prepare an Environmental Monitoring Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General within 6 months of the date of this approval, and consolidate the various monitoring requirements in Schedule 3 of this approval into a single document.

- 2A. Within 3 months of the date of this approval, the Proponent shall nominate a suitably qualified and experienced Environmental Officer(s) to perform environmental management duties. The Environmental Officer(s) shall be:
- (a) responsible for reviewing the monitoring programs required under this consent; and
 - (b) responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development.

The Proponent shall notify the Director-General, and Relevant Agencies of the name and contact details of the Environmental Officer, and any changes to that appointment that may occur from time to time.

Note: the Environmental Officer(s) duties need not necessarily be limited to environmental management and may be an existing employee with appropriate qualifications.

INCIDENT REPORTING

3. Within 7 days of detecting an exceedance of the goals/limits/performance criteria in this approval or an incident causing (or threatening to cause) material harm to the environment, the Proponent shall report the exceedance/incident to the Department and any Relevant Agencies. This report must:
 - (a) describe the date, time, and nature of the exceedance/incident;
 - (b) identify the cause (or likely cause) of the exceedance/incident;
 - (c) describe what action has been taken to date; and
 - (d) describe the proposed measures to address the exceedance/incident.

ANNUAL REPORTING

4. Within 12 months of the date of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General, Relevant Agencies and CCC.

This report must:

- (a) identify the standards and performance measures that apply to the project;
- (b) describe the works carried out in the last 12 months;
- (c) describe the works that will be carried out in the next 12 months;
- (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
- (e) include a summary of the monitoring results for the project during the past year;
- (f) include an analysis of these monitoring results against the relevant:
 - impact assessment criteria/limits;
 - monitoring results from previous years; and

- predictions in the EA;
- (g) include an evaluation of the effectiveness of the environmental protection requirements and procedures in the AEMR;
 - (h) identify any trends in the monitoring results over the life of the project;
 - (i) identify any non-compliance during the previous year; and
 - (j) describe what actions were, or are being, taken to ensure compliance.
5. Within 12 months of the date of the commencement of the project, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
 - (a) be conducted by a suitably qualified, experienced, and independent person(s) whose appointment has been approved by the Director-General;
 - (b) include consultation with the Relevant Agencies;
 - (c) assess the environmental performance of the project, and its effects on the surrounding environment;
 - (d) assess whether the project is complying with the relevant standards, performance measures and statutory requirements;
 - (e) review the adequacy of any strategy/plan/program required under this approval; and, if necessary,
 - (f) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval.

Note: The person(s) conducting the audit must have expertise in flora and fauna assessment as well as quarry rehabilitation.

6. Within 1 month of completion of each Independent Environmental Audit, the Proponent shall submit a copy of the audit report to the Director-General, Relevant Agencies and CCC, with a response to any of the recommendations in the audit report.
7. Within 3 months of submitting a copy of the audit report to the Director-General, the Proponent shall review and if necessary revise:
 - (a) each of the environmental management and monitoring strategies/plans/programs in Schedules 3 and 5; and
 - (b) the sum of the Landscape and Rehabilitation Bond (see Schedule 3). This review must consider:
 - the effects of inflation;
 - any changes to the total area of disturbance; and
 - the performance of the rehabilitation against the completion criteria of the Landscape and Rehabilitation Management Plan,
 to the satisfaction of the Director-General

COMMUNITY CONSULTATIVE COMMITTEE

8. Within 3 months of the date of this approval, the Proponent shall establish a Community Consultative Committee (CCC) for the project. The CCC shall:
 - (a) be comprised of:
 - 2 representatives from the Proponent, one of which will be the Environmental Officer nominated under Condition 2A of Schedule 5 ;
 - representatives of both Kiama Council and Shoalhaven Council (if available);
 - 1 representative of the Gerroa Environment Protection Society (if available); and
 - at least 2 representatives from the local community,
 whose appointment has been approved by the Director-General;
 - (b) be chaired by an independent chairperson, whose appointment has been approved by the Director-General;
 - (c) meet at least twice a year, including one meeting shortly after submission of the AEMR under Condition 4 of Schedule 5;
 - (d) review the Proponent's performance with respect to environmental management and community relations;
 - (e) undertake regular inspections of the quarry operations;
 - (f) review community concerns or complaints about the quarry operations, and the Proponent's complaints handling procedures; and
 - (g) provide advice to:
 - the Proponent on improved environmental management and community relations, including the provision of information to the community and the identification of community initiatives to which the Proponent could contribute;
 - the Department regarding the conditions of this approval; and
 - the general community on the performance of the quarry with respect to environmental management and community relations.

Notes:



- *The CCC is an advisory committee. The Department and other Relevant Agencies are responsible for ensuring that the Proponent complies with this approval.*
- *The membership of the CCC should be reviewed on a regular basis (every 3 years).*
- *If possible, an alternate member should be appointed for each of the representatives from the local community.*

9. At its own expense, the Proponent shall:
- ensure that 2 of its representatives attend CCC meetings;
 - provide the CCC with regular information on the environmental performance of the project, including a copy of the AEMR;
 - provide meeting facilities for the CCC;
 - arrange site inspections for the CCC, if necessary;
 - respond to any advice or recommendations the CCC may have in relation to the environmental management or community relations;
 - take minutes of the CCC meetings; and
 - forward a copy of these minutes to the Director-General, and put a copy of these minutes on its website.

ACCESS TO INFORMATION

10. Within 1 month of the approval of any plan/strategy/program required under this approval (or any subsequent revision of these plans/strategies/programs), or the completion of the audits or AEMR required under this approval, the Proponent shall:
- provide a copy of the relevant document/s to the Relevant Agencies and the CCC; and
 - ensure that a copy of the relevant document/s is made publicly available on its website and at the quarry.
11. During the project, the Proponent shall:
- make a summary of monitoring results required under this approval publicly available on its website and at the quarry; and
 - update these results on a regular basis (at least every 3 months).



**APPENDIX 1
VEGETATION MANAGEMENT AREAS AND SITE PLAN**



**APPENDIX 1
VEGETATION MANAGEMENT AREAS AND SITE PLAN**

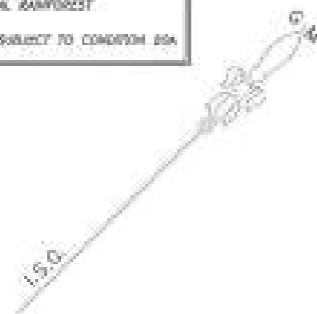


DO NOT SCALE

SOUTH COAST RAILWAY

LEGEND

- DENOTES OFFSET LINE
- DENOTES EDGE OF VEGETATION ZONE
- DENOTES PROTECTION ZONE
- DENOTES EXISTING DRAINAGE POND
- DENOTES PROPOSED DRAINAGE POND
- DENOTES LITTORAL FOREST
- X DENOTES LAND SUBJECT TO CONDITION 50A



2
D.P. 1111012



REV. W AREA 'N' ADDED TO PLAN - 23.08.08

REV.	DESCRIPTION	BY	DATE
1	REVISION 2008 AREA 'N'	W	15-03-08
2	REVISION 2008 AREA 'N'	J.T.	10-3-08
3	REV 'A' & 'B' ADDED TO PLAN	W	21.08.08
4	THE ORIGINAL VEGETATION ZONING MAP D.P. 1111012	W	22.08.08
5	Area 'J' added, for enclosure	W	24.08.08

REV.	DESCRIPTION	DATE
1	AMENDMENT TO ZONE BOUNDARIES	21.08.08
2	Amendment to zone numbering, zones 1 and 5.	24.08.08
3	Amendment to southern area.	25.08.08
4	Amendment to southern area.	25.08.08

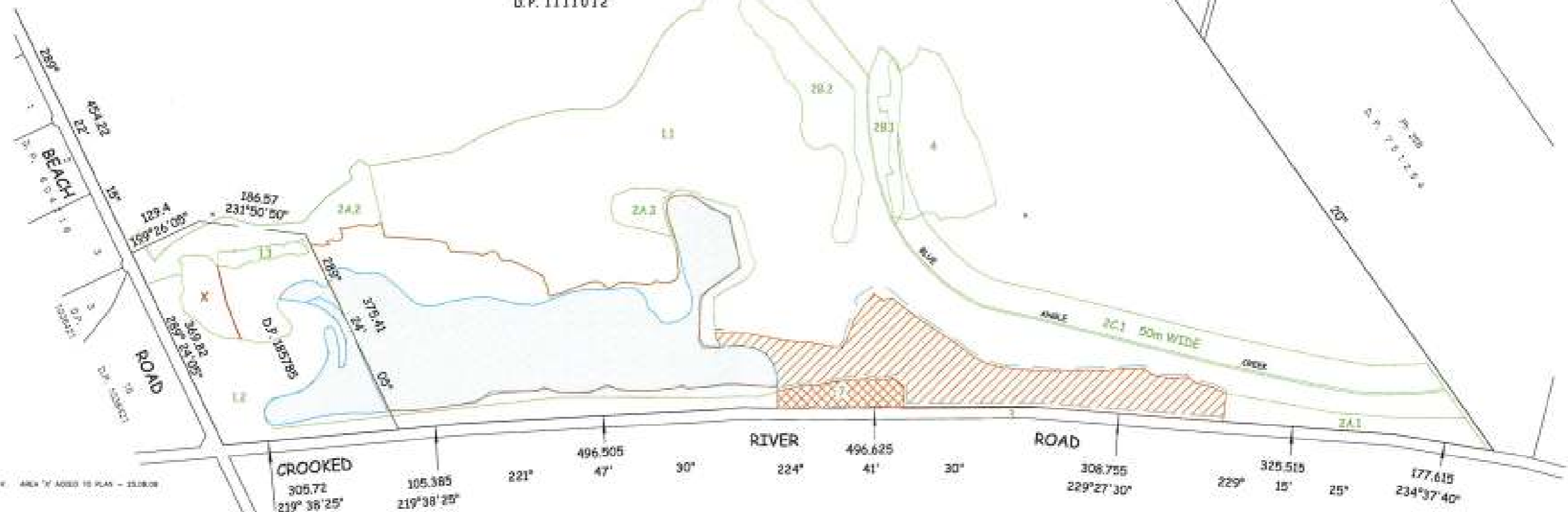
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DATE: 4-3-08	SCALE: 1:4000
DRAWN BY: J.W.	PROJECT STATUS:
CHECKED BY: J.W.	
APPROVED BY: C.J.	

VEGETATION MANAGEMENT AREAS AND SITE PLAN GERROA SAND MINE

JOB NO: **KF106198**
 SPEC NO: **106198/308**
 SHEET 1 OF 1

REV: **K**
 AL



APPENDIX 2 STATEMENT OF COMMITMENTS

- 1) Undertake the extension of the Gerroa sand quarry in a manner consistent with the Environmental Assessment and Statement of Commitments;
- 2) Comply with obligations under any Act;
- 3) Update the Environmental Management Plan (EMP) for the site to include all relevant matters contained in the Environmental Assessment and any requirements emanating from the Land and Environment Court for the project;
- 4) Operate the sand quarry within the requirements of the EMP as updated in 3) above (Note: the existing EMP embraces the requirements of the existing development consent with regard to such matters as environmental management, monitoring, auditing, reporting and community consultation. These requirements will be retained except where superseded in the approval for the current application);
- 5) Survey and mark at regular intervals the approved boundary of the proposed extension and ensure that all activities associated with sand extraction other than rehabilitation or approved mitigation works remain within the marked area;
- 6) Maintain annual production within an upper limit of 80,000 tonnes per year;
- 7) Progressively rehabilitate all areas disturbed by the sand mining operations in accordance with the Environmental Assessment and the EMP;
- 8) Protect from disturbance and maintain existing native vegetation around the periphery of the sand quarry;
- 9) Undertake compensatory planting in the locations identified in the Environmental Assessment and nurture the vegetation and created habitat to maturity in accordance with the Landscape and Rehabilitation Management Plan, to be incorporated in the EMP;
- 10) Protect from disturbance Area A (shown on the figure in Appendix 8), of significance for potential Aboriginal relics;
- 11) Arrange for targeted salvage excavations for Aboriginal artefacts to take place as recommended by Navin Officer and to include the shell midden deposit situated at the South Western corner of the extraction area prior to mining occurring in the nominated locations (shown on the figure in Appendix 8);
- 12) Prior to extending workings into any part of the extension, ensure that a screen of vegetation, with or without bunding, effectively prevents viewing of the land to be disturbed from any publicly accessible locations;
- 13) Ensure that the requirements of the acid sulphate soils management plan are incorporated in the EMP and implemented where indicated to prevent degeneration of water quality in the dredge pond and in groundwater
- 14) Include a section on fish management in the dredge pond in the revised EMP for the site.
- 15) Forward annual production data to the Department of Primary Industries.
- 16) Prior to finalising the revised EMP, forward a draft to DECC for comment.
- 17)
 - a. In surveying the boundary of the extraction area (see 5 above) include a minimum of 5 metres buffer to protect vegetation.
 - b. The external areas of the vegetation shall be fenced so as to exclude access by any farm animals to the satisfaction of the Director-General.
- 18) Include a requirement to monitor compliance with the approved boundary in the revised EMP.
- 19) Revegetate and maintain the buffer area in conjunction with adjoining vegetation, except where the buffer is used for access.
- 20) Update the groundwater monitoring program in the revised EMP.
- 21) Include a tree clearance protocol in the revised EMP incorporating pre-clearing inspection for koalas.
- 22) Incorporate in the revised EMP a standard of revegetation to be achieved to the north and south of the extraction area before the existing east-west link can be severed. Do not completely remove the existing link until a qualified ecologist has confirmed that the required standard of revegetation has been achieved including the establishment of 80% of the plants species representative of the plant communities in the quarry area and in accordance with Appendix 8
- 23) Include a revegetation monitoring program in the revised EMP to include all areas being revegetated as part of the project.
- 24) Define the compensatory vegetation land by survey and include an appropriate plan in the EMP.



- 25) Include a detailed site rehabilitation program in the EMP addressing the matters listed in item 5a) of the submission from DECC dated 22 December 2006 (and shown in Appendix 8).
- 26) Maintain ongoing consultation with the Aboriginal community including notification of approvals and requirements that relate to Aboriginal heritage with an invitation to contribute to any heritage management activities.
- 27) Submit updated site information to DECC's AHIMS register when archaeological salvage is complete.
- 28) Include in the revised EMP, reference to protection of Aboriginal heritage items located in Area A as part of management of that land and consult the Aboriginal community in developing and implementing the management protocols.
- 29) Should any sand mining impacts occur within Area A, consult DECC and the Aboriginal community as soon as possible in developing an appropriate response.
- 30) Investigate and if practicable, install "clacker" reversing alarms on mobile plant within the sand quarry site.



**APPENDIX 3
COMPENSATORY PLANTING**



DO NOT SCALE



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REVISIONS	DESCRIPTION	DATE	APP.	DATE
A	ISSUE FOR PERMIT	04		01-03-08
B	CONTRACT AND SITE WORK	AC		10-03-08
C	FIELD WORK APPROVED BY THE DEPT	SP		21-03-08
D	FIELD WORK	SP		22-03-08
E	FINAL PLAN	SP		25-03-08

Rev F Amendments to this version - 27.03.08
Rev G Amendments to zone numbering - 29.03.08
Rev H East-west link zone added - 29.03.08
Rev I AMENDMENT TO EAST-WEST LINK & NORTHERN CORRIDOR
NORTHERN CORRIDOR SOUTHWARD AREA AMENDED - 18.08.08
Rev J Southern AREA AMENDED - 19.08.08
Rev K Southern AREA AMENDED - 23.08.08
Rev L-1 Southern AREA AMENDED - 25.08.08

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 A.C.N. 500 804 417

PREPARED BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
SCALE 1:10000 POINT SCALE ONLY	

**PLAN SHOWING MANAGEMENT ZONES
GERROA SAND MINE**

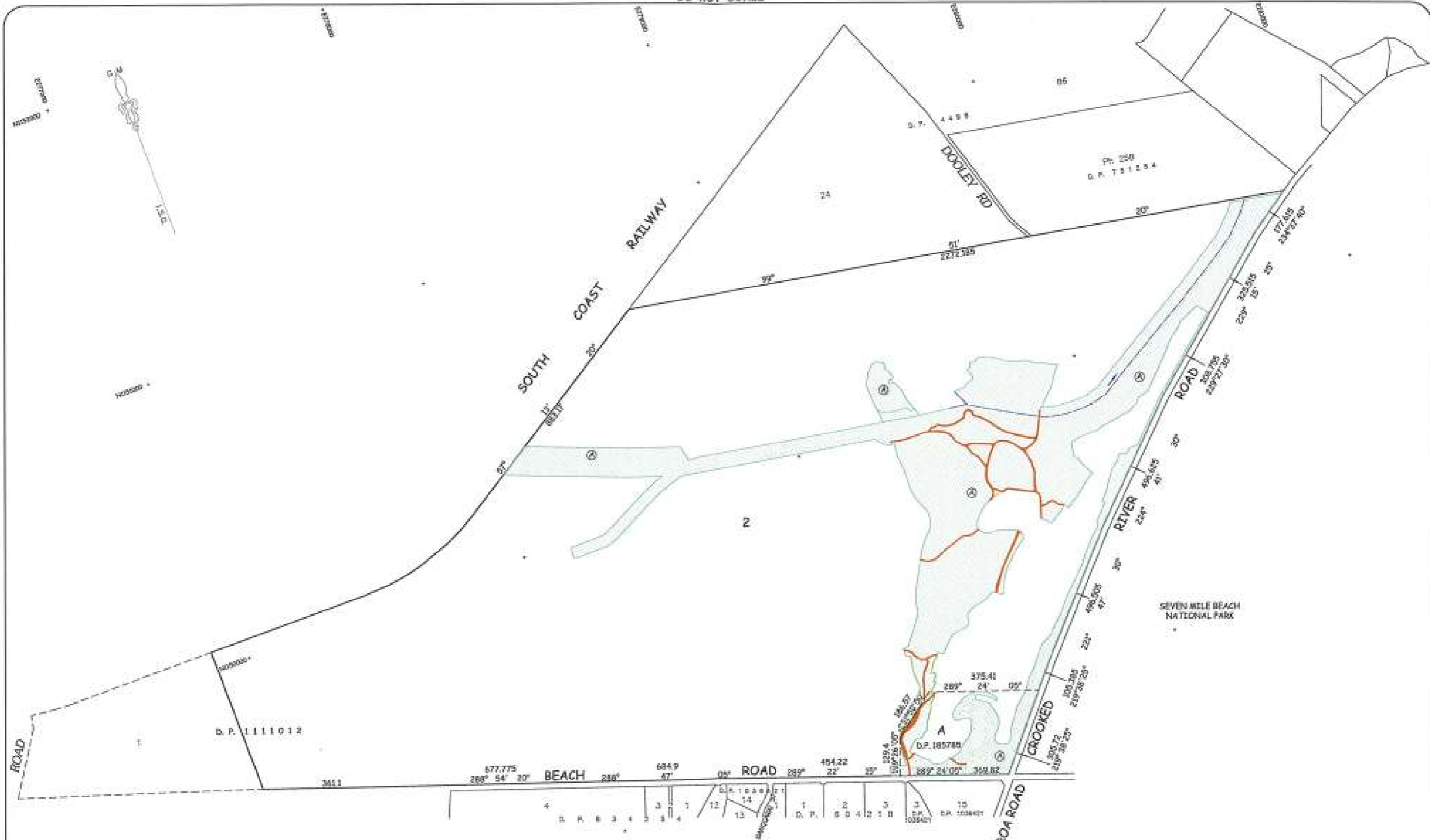
COMPENSATORY PLANTING

ISSUE NO.	KF108198
REV. NO.	6198/308
SHEET	1 OF 1

**APPENDIX 4
VEGETATION CONSERVATION AREA**



DO NOT SCALE



- A CONSERVATION AREA
- DENOTES EXISTING ACCESS TRACES IN USE
- DENOTES 'BLUE ANGLE CREEK'

benchmark
IN QUALITY
AS/NZS ISO 9001

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BOUNDARY OF SOUTHERN AREA AMENDED - 25.08.08

REVISIONS	DESCRIPTION	ISS	APP	DATE
A	Issue issued	SA		2-4-07
B	Revisions	SA		12-4-07
C	Conservation Area Amended	SA		27-7-08
D	Conservation Area Amended	JL		17-2-09
E	Final Issue	SA		21.08.08

REVISIONS	DESCRIPTION
F	Title amended - 22.05.08
G	Zones B & C1 added to conservation area. Southern Area amended - 18.08.08
H	Southern Area Amended - 23.09.08
I	'Blue Angle Creek' added - 21.08.08

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REVISION NO.	DATE
1	22-5-07
2	18-8-08
3	27-7-08
4	17-2-09
5	21-8-08

PLAN OF PROPOSED CONSERVATION AREA OVER LOT A DP 185785 & PT. LOT 2 DP 1111012 BERRYS BEACH & CROOKED RIVER RDS GERROA

PROJ NO: **KF106198**
FRG NO: **106198/507**

DATE STATUS: **VEGETATION CONSERVATION AREA**

SHEET J OF 1

APPENDIX 5 REHABILITATION OBJECTIVES

The objectives of site rehabilitation are as follows:

- after the conclusion of sand mining, leave the site free from all sand mining artefacts including machinery, structures, buildings, signage, products and roads, except as required for rural purposes;
- create safe and stable landforms with a natural appearance designed for low maintenance;
- establish indigenous vegetation on all land areas disturbed by the sand quarry to create wildlife habitat including wetland habitat within and around the shoreline of the dredge pond;
- nurture to maturity vegetation screens and compensatory planting established during the sand mining operation;
- control weed growth within the rehabilitation areas and compensatory planting areas;
- retain a minimum of access tracks for maintenance or as required for ongoing rural use of the property;
- progressively rehabilitate sections of the site when they are no longer required for operations to minimise the extent of work remaining when extraction ceases; and
- continue rehabilitation beyond closure of the sand mine until these objectives have been achieved.



**APPENDIX 6
SPECIES LIST**



APPENDIX 6

PLANT LIST FOR LITTORAL RAINFOREST VEGETATION TO BE REMOVED

Tall Canopy Trees

Banksia integrifolia C
Eucalyptus botryoides C
Eucalyptus pilularis C

"Rainforest Species" (11 species)

Middle Canopy Trees (individual counts)

Clerodendrum tomentosum (3 plants)
Endiandra sieberi (1 plant)
Glochidion ferdinandi (110 plants)

Understorey

Acronychia oblongifolia R
Breynia oblongifolia U
Cayratia clematidea U
Clerodendrum tomentosum R
Eustrephus latifolius R
Ficus obliqua R
Marsdenia rostrata R
Pittosporum revolutum U
Pyrrosia rupestris R

Other species (14 native species)

Acacia maidenii VC
Billardiera scandens R
Commelina cyanea C
Desmodium varians R
Dichondra repens U
Hibbertia scandens R
Imperata cylindrica U
Lomandra longifolia VC
Oplismenus imbecillis VC
Pteridium esculentum U
Rubus parvifolius R
Stephania japonica R
Themeda australis U
Viola hederacea U
**Lantana camara* VC



Subjective assessment of abundance: VC – very common, C – common, U – uncommon, R - rare

NATIVE PLANT LIST FOR AREA OF BANGALAY SAND FOREST TO BE REMOVED

Acacia binervata
Acacia longifolia
Acacia maidenii
Angophora floribunda
Banksia intergrifolia
Breynia oblongifolia
Carex longibrachiata
Cayratia clematidea
Clerodendrum tomentosum
Commelina cyanea
Cynodon dactylon
Desmodium varians
Dianella caerulea
Dichelachne crinita
Dichondra repens
Echinopogon caespitosus
Eragrostis leptostachya
Eucalyptus botryoides
Eucalyptus pilularis
Geranium solanderi
Glochidion ferdinandi
Glycine sp.
Hibbertia scandens
Imperata cylindrica
Isolepis nodosa
Kennedia rubicunda
Lomandra longifolia
Microlaena stipoides
Monotoca elliptica
Oplismenus aemulus
Oplismenus imbecillis
Oxalis exilis
Pteridium esculentum
Rubus parvifolius
Stephania japonica
Themeda australis



**APPENDIX 7
DECC LETTER**



Appendix 7

Our reference : W078914 (D007894751);D000690272134
Contact : Paul Whelan, (02) 4224 4100

Department of Planning
Major Development Assessment
(Attention: Michael Young)
GPO Box 39
SYDNEY NSW 2001



Dear Sir

PROPOSED EXPANSION OF CLEARY BROB SAND MINE GERROA
PROJECT APPLICATION: 05 0099

We are writing in reply to the exhibited Project Application, Environmental Assessment (EA) and accompanying information for the proposed expansion of the Gerroa Sand Quarry received by the Department of Environment and Conservation (DEC) on 8 November 2006.

We have been working through environmental issues relating to this proposal with the proponent and the Department of Planning (DoP) throughout the exhibition period. This has included a meeting between representatives from DoP, the proponent and DEC on 20 November 2006. A letter dated 28 November 2006 was sent to DoP from DEC confirming the outcomes of these discussions. In addition site visits have also been undertaken by DEC with the proponent's representatives on 1 December 2006 and 8 December 2006.

In response to these discussions, DEC has received a subsequent written report from the proponent on 13 December 2006 which further addresses some of the key issues associated with this proposal. In general the outcomes of these discussions have resulted in changes to the proposal in relation to such matters as the adequacy of the compensatory package and proposed management practices to address both ecological and Aboriginal cultural heritage issues.

Based on the outcomes of the above discussions, including a review of the submitted information, the DEC has determined that it is able to support the proposal subject to DoP seeking the additional statement of commitments (SOC) detailed in Attachment 1. These relate to the following two key issues with the development:

1. Biodiversity Conservation; and
2. Aboriginal Cultural Heritage.

We would also appreciate receiving a copy of the submissions received by DoP in response to the exhibition of the EA and the proponent's response to these submissions. We may provide comments on these responses if necessary on matters we regulate to assist DoP in their determination of the development.

Department of Environment and Conservation

In addition, we would also appreciate being provided a copy of the draft Director General's Environmental Assessment report and associated conditions for perusal to ensure the above matters have been addressed. This is because we consider them essential for the development as well as ensuring DEC's effective ongoing regulation of the premises should Approval be granted.


The site is currently licenced for Dredging Works under the Protection of the Environment Operations (POEO) Act 1997 (Environment Protection Licence (EPL) No 4145). This licence may require amendments if development approval is granted. Should the Minister of DoP decide to grant approval the proponent may need to make a separate application to DEC to vary the EPL under the POEO Act 1997 for the proposed extension prior to any construction or operational works commencing on site.

There are also some conditions on the existing EPL which will also relate to the proposed development. These conditions will not be subject to variation, however to ensure that any approval is consistent with the existing licence, DoP should consider these conditions when drafting any approval conditions.

If necessary we would be able to meet at a suitably convenient time with DoP and the proponent to clarify any of the comments provided above and outlined in our attachment.

If you have any questions, or wish to discuss this matter further please contact Paul Weams on 4224 4100.

Yours sincerely


PETER BLOEM
A/Manager Ilwarrara
Environment Protection and Regulation

22/12/06

Alt:

(N:\Part 3A\Drafts\Proposed Cleary Bros Sand Quarry Gamba.doc)



ATTACHMENT 1

The Department of Environment and Conservation (DEC) considers that the draft Statement of Commitments (SOC) detailed in the Environmental Assessment (EA) should be adopted in the development of any proposed approval conditions. In addition, we have also provided the following additional comments and SOC to address issues that have arisen during DEC's assessment of the development.

For the purpose of these comments the following terms have been adopted:

- **Conservation area** This is defined in the EA and refers to the area to the east of the site consisting of *Littoral Rainforest* and significant Aboriginal cultural heritage values including Area A
- **Compensatory package** This refers to the overall conservation measures for the site including areas of remnant Endangered Ecological Community (EEC) such as *Swamp Sclerophyll Forest*, *Bangalay Sand Forest*, *Littoral Rainforest* and *Swamp Oak Floodplain Forest*. It also includes the conservation area and areas of rehabilitation and replanting at the site (the exact area of this package is yet to be defined).

BIODIVERSITY CONSERVATION**1. Boundary of Extension Area**

The footprint of the proposed extension area borders the conservation area and a remnant of *Swamp Sclerophyll Forest* which is an EEC. To avoid any potential adverse impacts to these areas we recommend that an adequate separation distance is maintained from the dredging activities/mine operations. DEC considers it crucial that the edge around these sensitive areas is managed to avoid such impacts. To address this issue we recommend the following additional SOCs:

- a) *The boundary of the extension area must be clearly defined in consultation with a fully qualified ecologist prior to the commencement of any construction works to ensure that an adequate buffer distance is maintained from the dredging activities/ mine operations to the conservation area and Swamp Sclerophyll Forest.*

b) *All dredging activities and associated mine operations must remain within the defined boundary.*

c) *A monitoring program must be developed and documented in the QEMP to demonstrate that the defined boundary of the extension area is maintained and not compromised during operations.*

d) *The buffer area should be revegetated with appropriate native species and should be subject to a vegetation management plan for inclusion in the QEMP for its long term restoration and management.*

2. Hydrology

DEC considers the remnant of *Swamp Sclerophyll Forest* adjoining the proposed extension area is regionally important. *Swamp Sclerophyll Forest* is reliant upon a particular hydrology as defined in the Scientific Determination to exist. Information provided to DEC by the proponent and their ecological consultants during the exhibition process state that current sand mining process have had no significant effect on the ground water quality or level. In addition the current mine has had no significant impact on the adjoining vegetation health and its composition. On the basis of this information, the proposal is unlikely to have a significant impact on this EEC. However to properly validate these conclusions we recommend the development and implementation of a groundwater monitoring program linked to an ecological assessment of the adjoining *Swamp Sclerophyll Forest*.





We recommend the following additional SOC:

- a) *The proponent must develop and implement a groundwater monitoring program as part of the QEMP to demonstrate that dredging activities and associated mine operations will not result in any actual or potential impacts to ground waters and the Swamp Sclerophyll Forest. DEC must be consulted in the development of the plan.*

3. **Fauna habitat and movement, the East-West link**

The proposed sand quarry will sever an east-west link between Seven Mile Beach National Park and a remnant of Swamp Sclerophyll Forest which is situated on Cleary Bros land. This link is likely to be used by fauna as habitat and to move between the two areas. The importance of this linkage has also been highlighted by the recent (unconfirmed) sighting of a Koala in the local area.

The proponent has proposed to compensate for the severing of the east west link with revegetation of a link to the north and south of the proposed footprint which would enable fauna to move between the National Park and the remnant.

In relation to the koala, information provided in the EA indicates that there are some feed trees to the west and east of the site. While information held by DEC revealed that there has been no recorded sightings of koalas in the adjoining Seven Mile Beach National Park, nor has DEC undertaken any survey work for this species, DEC considers that the re-establishment of linkages to the north and south of the site important elements for the project in regards to fauna movement and to act as compensatory habitat. In relation to the southern area this would involve continuation of current rehabilitation activities.

The above measures, however, are dependant on the success of planting a highly modified and cleared area in the north of the site and the period of time it would take for this area to become established. In response to this issue, DEC requested the company provide information on an existing rehabilitated area planted in approximately 1993 located in the northern section of the current east west link in order to evaluate its success. A review of this information which included vegetation survey and site inspection revealed that the site was successfully regenerating.

The company has indicated that this should also be the case to the north of the site and that a replanted area should be able to act as a fauna habitat, and thus a suitable compensatory fauna corridor. In this regard we recommend that the complete removal of the east west link should not occur until the northern and southern vegetated areas have been successfully established.

The submitted information also indicated that the existing link consisted mainly of Blackbutt trees containing very few hollows, however the site does contain a number of large Bangalay trees. Bangalay trees are known to contain large hollows and a higher concentration of hollows which provide potential for fauna habitat. The proposal includes removal of some Bangalay trees. To minimise impact to fauna during the removal of any potential habitat trees we recommend the development of a Tree Clearance Protocol as part of the QEMP. The aim of this measure is to reduce the direct impacts to any tree dwelling fauna species during the construction phase.

To address the above issues we recommend the following SOCs:

- a) *A Tree Clearance Protocol must be developed by a suitably qualified person as part of the QEMP to reduce any direct impacts to any tree dwelling Threatened Species or arboreal mammals during the construction phase. The DEC must be consulted in the preparation of this protocol.*



- b) *The northern and southern rehabilitation areas must be established for fauna movement to the satisfaction of DEC before the East West link is severed.*
- c) *The northern and southern revegetation areas must be monitored for regeneration success as part the QEMP. The DEC must be consulted in the preparation of this monitoring program.*

4. **Compensatory package**

The original proposed compensatory package in the EA did not fully satisfy DEC guidelines. Recent discussions between DEC, Cleary Bros and their ecological consultants have revealed that the Swamp Sclerophyll Forest remnant will now be included as part of the compensatory package. The DEC considers this remnant as regionally significant and as such an appropriate offset for inclusion in the compensatory package. A subsequent report received from Ferram and Partners on 13 December 2000 confirms the remnant is to be included in the compensatory package. However the long term security of this remnant and other areas covered by the compensatory package is a major issue and is yet to be resolved. In this regard we recommend the following SOCs:

- a) *Documentation must be developed defining both the area to be included in the compensatory package and associated management strategies for their protection.*
- b) *The areas covered by the compensatory package must be secured for long term conservation prior to operations commencing through a means agreed to by the DoP Cleary Bros and DEC.*
- c) *Any future development of the land must not compromise the compensatory package for this proposal.*

5. **Site Rehabilitation and End of Mine uses**

DEC understands that Cleary Bros have numerous options for end of mine uses including a proposed golf course and tourist development. There is the potential that these proposals together with the proposed sand quarry could have cumulative impacts on the environment. For this reason any end of mine uses must ensure any areas included in the compensatory package are protected.

While end of mine uses is an important consideration, DEC appreciates that a final land use may not yet be determined. Irrespective DEC considers that rehabilitation should be staged to manage not only exposed areas of the site which contribute to wind blown dust emissions and polluted stormwater runoff, but also to contribute towards progressive revegetation over the life of the quarry. We also consider that opportunities exist as part of staged rehabilitation to implement programs to increase biodiversity values of the land such as the construction of shallow areas within and surrounding the edge of the pond to promote habit for fauna such as wading birds. While a SOC has been recommended for progressive rehabilitation in accordance with the QEMP we recommend the following additional SOC to assist in guiding the development of this plan.

- a) *A site rehabilitation program must be developed by a suitably qualified person and documented as part of the QEMP. The DEC must be consulted in the preparation of this program. The plan must:*
 - (i) *incorporate staged rehabilitation of the extraction area based on best practice and appropriate guiding principles at the time of rehabilitation;*
 - (ii) *be consistent with the Department of Primary Industries - Mineral Resources Rehabilitation and Mine Closure Environmental Policy Implementation Principles*
 - (iii) *detail practices that protects surface and groundwater from pollution*



- (M) detail practices that maintains or improves biodiversity so there is no net impact on threatened species or native vegetation
- (V) detail practices that protects places, objects and features of significance to Aboriginal people
- (W) outline performance criteria/goals/principles for staged rehabilitation during the life of the quarry and post mining.

ABORIGINAL CULTURAL HERITAGE

6. Review of Aboriginal Cultural Heritage Assessment

The site has important and significant aboriginal cultural heritage values. The proposal involves the mining of the dune crest which contains aboriginal cultural heritage items comprised mainly of shell (pip) midden and stone artefacts.

DEC has engaged in discussions with DoP, Cleary Bros and heritage consultants on numerous occasions in regards to the aboriginal cultural heritage values of the site. DEC also visited the site on 8 December 2006 with Cleary Bros and Navin Officer Heritage Consultants to assess and discuss the Aboriginal cultural heritage values. The EA states that the Jerrinja Local Aboriginal Land Council and Jerrinja Consultants have been consulted in regards to the development. Local Aboriginal representatives were also on site during the archaeological subsurface testing program.

Previous reports have identified Area A and Area B as areas of archaeological significance (Paton 1992), as shown in Figure 5.4 of the EA. These areas have been reassessed as part of this current proposal. In the original report by Paton the locations of Area A and Area B were sketched, however, precise grid references were not given. Cleary Bros had surveyors plot their locations based on Paton's descriptions (Navin Officer para. comm.) and as such their locations may not be exact. Reassessment of these areas (Navin Officer 2006) have concluded that there was no material of archaeological significance in Area B, and as such it is likely that mining the proposed area of Area B will have minimal impact on Aboriginal cultural heritage values. Cleary Bros proposed to remove the conservation status for Area B to allow mining to occur in that area. They also propose that Area A be extended to include more of the dune crest and that this area be conserved through a long term agreement.

The proposed sand mining will destroy the pip midden and any other objects of Aboriginal cultural heritage significance present on the dune, further reducing their occurrence within the Seven Mile Beach area. DEC considers these Aboriginal cultural heritage items significant both locally and regionally. In this regard we recommend that a suitable compensation strategy is developed to mitigate against the loss of Aboriginal cultural heritage in addition to the proposed archaeological salvage and conservation of Area A. This compensation strategy should be prepared in consultation with DEC, the DoP, the local Aboriginal community and Cleary Bros. In this regard we recommend that the following additional SOG be added:

- a) The compensation strategy for the mining of areas containing Aboriginal cultural heritage objects must be negotiated prior to operations commencing to the satisfaction of DEC, the DoP, the local aboriginal community and Cleary Bros.
- b) The recommendations provided in the report by Navin Officer Heritage Consultants in Appendix L of the Environmental Assessment must be followed.
- c) The compensatory package must include the area labelled 'Area A' in figure 5.4 of the EA and must be secured for long term conservation prior to operations commencing through a means agreed on by DEC, the DoP and Cleary Bros.
- d) DEC be consulted regarding the research design for the archaeological salvage work that is to be undertaken prior to further sand mining.

- e) *Consultation with the Aboriginal community should be ongoing. The Aboriginal community must be provided with notification of development approvals and requirements as they relate to Aboriginal heritage and be invited to contribute to any further heritage management activities including the archaeological salvage and management of Area A.*
- f) *Once the archaeological salvage is complete, DEC's AHIMS register must be provided with updated site information.*
- g) *As per the Navin Officer report, the protocol for Human Skeletal Remains must be followed.*

The section identified as 'Area A' in Figure 5.4 of the EA has been identified to conserve some of the cultural heritage and threatened species values on site. It is understood that weed eradication and other rehabilitation works will occur in this area. Due to the aboriginal cultural heritage values of Area A the DEC consider it important that any disruption to the area is minimised. In this regard we recommend the following additional SOCs be added:

- h) *The Environmental Management Plan that is to be developed for conservation Area A must include consideration for the protection of Aboriginal heritage items within that area. The management plan should be developed in consultation with the Aboriginal community (Jerrinja LALC and Jerrinja Consultants) and a suitably qualified archaeologist.*
- i) *Any vegetation clearing or other maintenance works within Area A must be undertaken in consultation with the local Aboriginal community.*
- j) *Should any impacts occur within Area A as a result of sand mining related activities (such as erosion impacts) DEC and the Aboriginal community must be advised immediately so as to develop an appropriate strategy to minimise impacts.*



**APPENDIX 8
ARCHAEOLOGICAL AREAS**



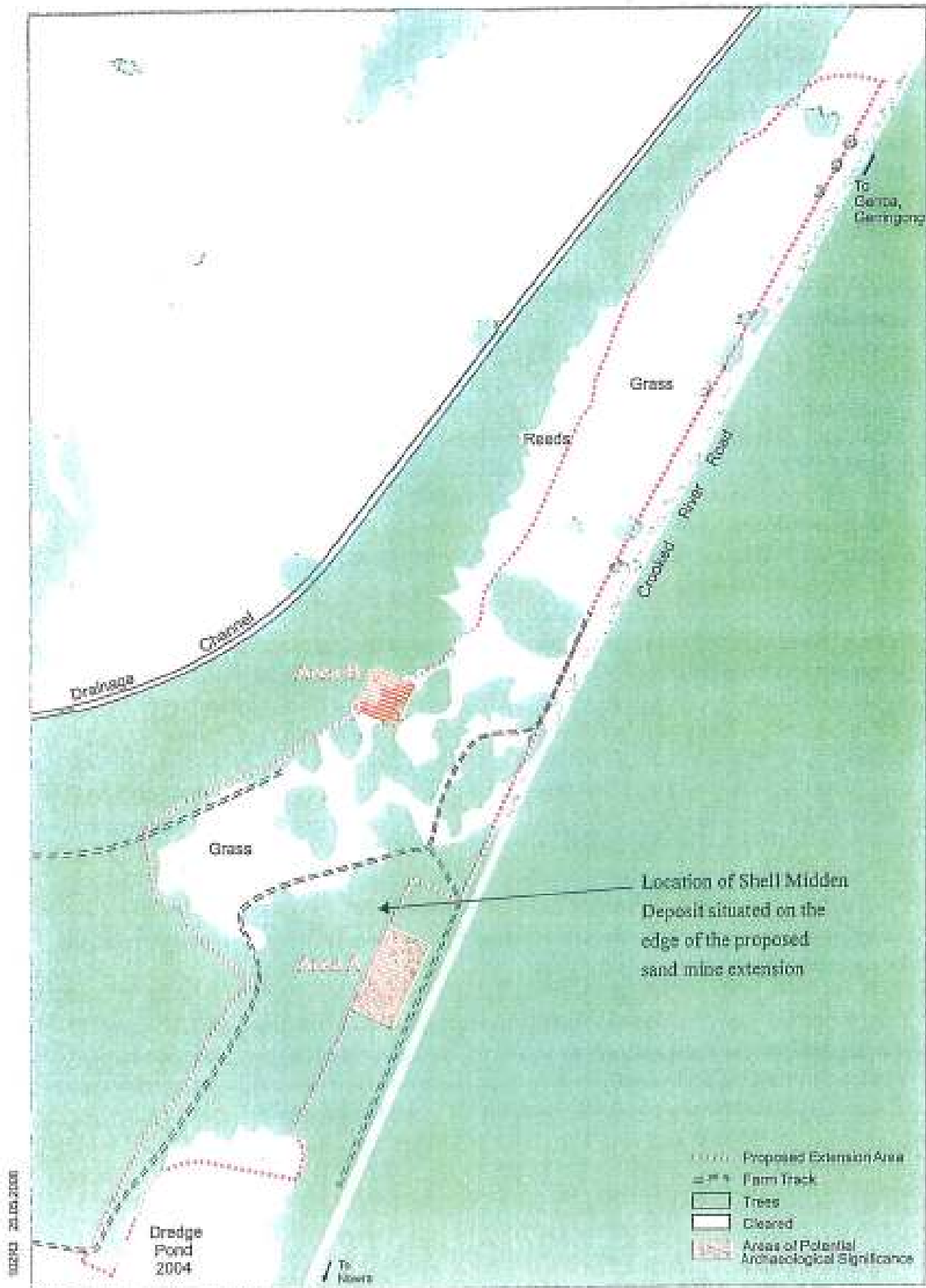


Figure 5.4 Archaeological Areas

**APPENDIX 9
INDEPENDENT DISPUTE RESOLUTION PROCESS**



APPENDIX B
INDEPENDENT DISPUTE RESOLUTION PROCESS

**Independent Dispute Resolution Process
(Indicative only)**

