

APPENDIX 4

Environment Protection Procedures



Jandra Quarry Environmental Protection Procedures Manual

June 2000



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Introduction

The following manual contains Environmental Protection Procedures (EPP's) to be used to direct activities at CSR's Jandra quarry where they relate to environment protection and minimising the impact of the operation on the environment.

The primary aim of the EPP's are:

- to ensure that the consent conditions for the quarry are met by having a set of clear instructions for operational personnel at the Jandra quarry;
- to ensure measures necessary to manage the environmental impacts associated with quarry activities occur in a planned and coordinated way.

The EPP's are to be read in conjunction with the consent conditions for the project (issued 30 March 2000 by the NSW Minister for Urban Affairs and Planning) and the Environmental Management Plan Overview (dated June 2000).

The structure of the EPP is described in the page following the manual contents. There are several EPP's for each environmental management plan area.

The review of the EPP's - to ensure they keep pace with operational changes and changes in environmental practice - is specified in EPP number M1.5.

As a minimum the EPP's are to be reviewed every two years.

The EPP Manual has the following main sections:

- **EPP's under each environmental management plan heading**
- **A Compliance Table**
- **An EPP Monitoring Table**
- **Consent Conditions relevant to the Jandra Site**

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Title	Use of Temporary Erosion and Sediment Controls
Category	Soil and Water Management
Reference	S&WM1.1
Consent Conditions Ref	25, 49-61
EMP overview Ref	Sections 3.3, 3.3.1 (A)

OBJECTIVES

- To collect and treat stormwater from disturbed areas during construction and operation.

OTHER PROVISIONS

- The management of stormwater runoff is, where practical, to follow the following principles
 - ⇒ Stormwater from undisturbed areas is to be directed away from disturbed areas,
 - ⇒ The smallest area possible is to be disturbed
 - ⇒ All areas to be disturbed are to be assessed for need for temporary sediment filters and traps. These are to be constructed in the first phase of clearing activities.
 - ⇒ Disturbed areas are to be progressively rehabilitated (see Rehabilitation EPPs)
- In general sediment control filters are to be used:
 - ⇒ below small disturbed areas with a maximum size of 0.6 hectares,
 - ⇒ along the boundary of construction sites, and,
 - ⇒ on the uphill side of any vegetation.

PROCEDURES

1. Identify area to be disturbed and identify the requirement for and type of sediment filters and traps to be used (refer figures 3.2 and 3.3 of the EMP Overview). Consult the topographical and drainage plan for the area (Figure 3.1 EMP Overview - attached).
2. All areas to be disturbed are to be marked prior to construction commencing. Operators are to be briefed on the extent of the works and erosion controls.
3. Where required, construct identified diversions channels around construction area.

Jandra Quarry Environmental Protection Procedure S&WM1.1 (con't)

4. Constructed temporary sediment controls in accordance with Figures 3.2 and 3.3 of the EMP Overview.
5. Inspect temporary sediment controls for blockages, sediment build-up and breakages quarterly and after major rain fall events. Repair as required.
6. Removed sediment controls only when construction is completed and all exposed areas have been adequately stabilised or rehabilitated.

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Use of Permanent Erosion Controls
Category	Soil and Water Management
Reference	S&WM1.2
Consent Conditions Ref	26, 49-61
EMP overview Ref	Sections 3.3, 3.3.1 (KK)
OBJECTIVES <ul style="list-style-type: none">To collect and treat stormwater from disturbed and other hard-stand areas through the use of permanent control features.	
OTHER PROVISIONS <ul style="list-style-type: none">Any permanent diversion banks are to be constructed with overburden material and typically have the following dimensions:<ul style="list-style-type: none">⇒ 0.3 to 0.8 metres high,⇒ 0.6 to 1.5 deck width and,⇒ batter slopes no higher than 2 horizontal to 1 vertical.Sediment control features have been identified in the EMP Overview, as with their design capacity and construction (refer EMP Overview pages 3.8 - 3.12). The location of these facilities is identified in Figure 3.1 of the EMP Overview (attached).Note that the general principle for water management and the use of permanent control features is to divert clean runoff around the site and to recycle any collected runoff in the mill and other quarry processes.	
PROCEDURES <ol style="list-style-type: none">Prior to the commencement of each Stage of operations identify the permanent water control features required for that phase.Construct the control features prior to the commencement of the Stage.Install temporary sediment controls along the outside of banks of newly constructed facilities until exposed areas have been adequately stabilised.Inspection of permanent erosion controls for blockages, sediment build-up and breakages quarterly and after major rain fall events.	

Jandra Quarry Environmental Protection Procedure S&WM1.2 (con't)

5. As required repair any areas of erosion and clean out sediment build-up.

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Management of Sediment Pond Water
Category	Soil and Water Management
Reference	S&WM1.3
Consent Conditions Ref	24, 26, 49 - 61
EMP overview Ref	Sections 3.3, 3.3.1 (X)(X)

OBJECTIVES

- To capture stormwater run-off from disturbed areas and to minimise concentration of fines in overflow waters.

OTHER PROVISIONS

- Water from sediment ponds is to be used where ever possible for quarry demand.
- Excess water from the in-pit sump (Dam 1) is to be regularly discharged when water quality criteria is met in order to maintain the required freeboard.
- Note relating to the bywash dam and pump (covered by specific consent conditions (57-62). DLWC advised that under the Departments Harvestable Rights Policy dams not exceeding 13.05 megalitres do not require licensing under Part 2 of the Water Act (refer letter dated 1/11/2000).**

PROCEDURES

- The level of freeboard required in a sediment dam is to be identified with an appropriate marker peg.
- If water is required to be discharged from the sediment dam take a water sample to determine pH, suspended solids, conductivity and oil and grease.
- When asphalt plant is in operation, additional monthly monitoring required for Dam 1 for: pH, total dissolved solids, total suspended solids, total petroleum hydrocarbons, polynuclear aromatic hydrocarbons, mononuclear aromatic hydrocarbons and BOD (refer EPP Monitoring Table).
- Re-monitor pond water in accordance with EPP S&WM1.6 to ensure discharge criteria can be met.
- If suspended solids are greater than 50 mg/L then flocculation may be required.
- Inspect all controls including trickle pipe valve and filter medium quarterly and following

Jandra Quarry Environmental Protection Procedure S&WM1.3 (con't)

major rain events.

7. Monitor volume of sediment in the catchment dams and remove accumulated sediment if it is greater than 10% of the volume.

REPORTING

Reporting of the implementation of this procedure and water quality monitoring results is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 11 May 2001

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Management of Water Run-off from the Asphalt Plant
Category	Soil and Water Management
Reference	S&WM1.4
Consent Conditions Ref	26
EMP overview Ref	Sections 3.3.2
OBJECTIVES <ul style="list-style-type: none">To capture and manage stormwater run-off from the asphalt plant, pugmill and pre-coating operations.	
OTHER PROVISIONS <p>The following design features must be in place for the operation of the pugmill, pre coating facility and asphalt plant:</p> <ul style="list-style-type: none">The pugmill and pre-coating facility are to be situated on a concrete pad.The asphalt plant is to be situated on a handstand pad.Run-off from pre-coat areas to be diverted to sediment/evaporation ponds for treatment.Run-off from pre-coating area to be directed through a grease trap.	
PROCEDURES <ol style="list-style-type: none">Inspect grease trap monthly and pump out as required.Monitor site facilities dam (Dam 2) monthly when asphalt plant is operational. (Note monitoring parameters and discharge limits are recorded in EPP Monitoring Table.	
REPORTING <p>Reporting of the implementation of this procedure and water quality monitoring results is to occur in the Annual EMP Report prepared as part of consent condition 12(d).</p>	

Jandra Quarry Environmental Protection Procedure S&WM1.4 (con't)

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Management of Fuels and Lubricants
Category	Soil and Water Management
Reference	S&WM1.5
Consent Conditions Ref	14, 24
EMP overview Ref	Sections 3.7, 3.71, 3.72
<p>OBJECTIVES</p> <ul style="list-style-type: none"> To protect soil and water from fuel and lubricant contamination. <p>OTHER PROVISIONS</p> <ul style="list-style-type: none"> Additives, fuels, chemicals and oils to be stored in a roofed and bunded area sized to contain spillage of 110% of the total liquid storage. Specialised absorbent material to be kept on site for rapid containment of spills. All new personnel are to be briefed as to these management procedures and the location of absorbent materials. <u>In the case of a spill the rapid containment kit is located in the "General Storage Container".</u> <p>PROCEDURES</p> <ol style="list-style-type: none"> Additives, chemicals and oils stored are to be stored at all times in a locked and bunded shipping container. Fuel and pre-coat materials are to be stored at all times in a roofed and bunded area. Quarterly inspections are to be conducted of all bunded areas. Any absorbent material used in a clean up of a spill must be either sent away for cleaning in accordance with manufacturers requirements or disposed of in accordance with EPA requirements. 	

Jandra Quarry Environmental Protection Procedure S&WM1.5 (con't)

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Monitoring Water Quality
Category	Soil and Water Management
Reference	S&WM1.6
Consent Conditions Ref	
EMP overview Ref	Sections 3.9
<p>OBJECTIVES</p> <ul style="list-style-type: none"> To monitor water quality and meet statutory discharge requirements. <p>OTHER PROVISIONS</p> <ul style="list-style-type: none"> A licence and metering will be required under Part 2 of the Water Act if the total capacity of dams on the property, not used for environmental purposes, exceeds the harvestable right which is 13.05 megalitres (refer DLWC letter dated 1/11/00). Current dam capacities and use do not warrant licensing and metering. The four water quality monitoring points are shown on Figure 3.11 in the EMP Overview and attached (three dams and a creek at the western property boundary). Note that monitoring results are required to be reported annually to various authorities (see EPP M1.5). Monitoring frequency is detailed in the EPP Monitoring Table <p>PROCEDURES</p> <ol style="list-style-type: none"> Prior to any discharge from Dam 1, 2, or 3, water quality is to be determined. Flocculant may need to be added (see S&WM1.3). Water quality is to be monitored for pH, suspended solids, conductivity and oil and grease. When asphalt plant is in operation, additional monthly monitoring (Dam 1) required for : pH, total dissolved solids, total suspended solids, total petroleum hydrocarbons, polynuclear aromatic hydrocarbons, mononuclear aromatic hydrocarbons and BOD. When water quality meets water discharge quality criteria, discharge can occur. 	

Jandra Quarry Environmental Protection Procedure S&WM1.6 (con't)

5. Water quality is to be monitored at licensed discharge point upon discharge (at western property boundary) at a time during discharge.
6. Attach outcomes from monitoring to this EPP.

REPORTING

Reporting of the implementation of this procedure and water quality monitoring results is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 11 May 2001

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Vegetation Clearing
Category	Flora and Fauna Management
Reference	F&F1.1
Consent Conditions Ref	47, 48 (d) to (l) Note that this EPP has been forwarded to the NPWS and Council for comment (1/6/00).
EMP overview Ref	Section 4.3.3, Appendix C
<p>OBJECTIVES</p> <ul style="list-style-type: none"> To minimise the impact on flora and fauna from clearing activities. <p>OTHER PROVISIONS</p> <ul style="list-style-type: none"> <u>NOTE: A qualified ecologist is required to implement parts of this EPP.</u> <u>NOTE: This EPP must be completed in full for each stage (I to IV) of the quarry development.</u> As required by consent conditions, clearing is to occur during September, October, March, April or May, wherever practical. This is to avoid the summer breeding season. A list of possible threatened and protected fauna species in the area is listed in Appendix C of the EMP Overview (and it attached) as with general principles for relocating these species. <u>*** Please refer now to this list of possible threatened and protected fauna species and their management. These have been prepared by a qualified ecologist.</u> Only trees on land directly required for operations are to be cleared. All efforts are to be made to retain large habitat trees. Vegetation on the ridgeline of the quarry development are to be kept as a visual shield where practical. All employees involved with land clearing are to be briefed on these procedures. 	

Jandra Quarry Environmental Protection Procedure F&F1.1 (con't)

PROCEDURES

1. Fencing is to be erected to delineate the total extraction limits for a particular expansion stage for the quarry. This is to ensure that no clearing occurs outside these areas. Fencing is to be relocated for any new expansion phase.
2. A pre-clearance fauna and flora assessment by a qualified ecologist targeting key habitat areas (eg hollow trees and logs, watercourses). This is to be undertaken by a qualified ecologist over one day and two nights immediately prior to clearing activities.
3. During the survey all potential roosts (hollow trees) and any trees occupied by Koalas (not expected) are to be clearly marked.
4. All non-habitat trees are first to be removed.
5. Cuttings of good specimen of species identified for revegetation in the are to be obtained and directly relocated to areas under revegetation (see EPP R1.1). Suitable trunks, limbs and large rocks are also to be directly relocated to revegetation/rehabilitation areas.
6. All potential (ie identified) roost trees are then to be removed preferably a day after the clearing of non-habitat trees (to allow any possible fauna to disperse). The trees are to be removed by first nudging or placing saw cuts in the tree. Time is to be allowed for any nesting animal to move off. The tree can then be felled. This should be done in the afternoon to assist relocation.
7. Inspect the tree for any injured wildlife. Collect the tree for use in revegetation/ rehabilitation elsewhere.
8. Consult appropriate fauna specialist over any injured wildlife (access to such an individual should be pre-arranged).

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Jandra Quarry Environmental Protection Procedure F&F1.1 (con't)

Title	On-site vehicle movements
Category	Flora and Fauna Management
Reference	F&F1.2
Consent Conditions Ref	48 (a)
EMP overview Ref	4.4

OBJECTIVES

- To minimise the impact on fauna from on-site vehicle movements.

OTHER PROVISIONS

- All new employees are to be briefed on these procedures, in particular the likely movements of wildlife during the early morning and late afternoon.

PROCEDURES

1. The maximum speed limit in the operational areas of the quarry is to be 40km/hr.
2. Wildlife crossing signs are to be erected on any roads flanked by several metres of vegetation and roads near revegetation wildlife corridors.
3. The incidents of road kills are to be recorded and attached to this EPP.

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Management of Buffer Land
Category	Flora and Fauna Management
Reference	F&F1.3
Consent Conditions Ref	47
EMP overview Ref	None

OBJECTIVES

- To ensure the protection of buffer land surrounding the immediate operational areas of the quarry.

OTHER PROVISIONS

- For the purposes of this EPP, 'Buffer land' is defined as land outside that immediately required for operations, contains native vegetation and is owned by CSR. It does not include areas identified to be revegetated (figure 4.1 EMP Overview and attached).
- The buffer zone may be used for the non-intrusive collection of seeds for revegetation.

PROCEDURES

1. The boundary area of works proposed at the quarry are to be clearly fenced and identified on a site map.
2. No rubbish, used quarry machinery, quarry stockpiles or the like are to be placed in the buffer zones.
3. The importance of not disturbing the buffer zone is to be communicated to all new employees.

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Jandra Quarry Environmental Protection Procedure F&F1.3 (con't)

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Establishment and Monitoring of Wildlife Corridors
Category	Rehabilitation Management
Reference	R1.1
Consent Conditions Ref	46, 48 r - t
EMP overview Ref	Sections 4.3, 5.6, 5.7.2
<p>OBJECTIVES</p> <ul style="list-style-type: none"> To re-establish vegetation in the two wildlife corridors. <p>OTHER PROVISIONS</p> <ul style="list-style-type: none"> There are two areas of wildlife corridor to be revegetated at the Jandra quarry: the Access Road Corridor and the Eastern Block Corridor. These are shown in Figure 4.1 of the EMP Overview (attached). The re-establishment of vegetation in the corridors is to commence concurrently with the commencement of stripping for stage 1 of the expansion at Jandra quarry. All seeds and seedlings required for re-establishment of vegetation need to be endemic to the area. Seeds can be collected from the quarry buffer zone. A key aim from the revegetation activities is to achieve 20 to 25% <i>Allocasuarina</i> spp. January /February is the best season for germination of these species. Note screening is required to be established at the Mowbray property. This is to be completed in consultation with the landowner. <p>PROCEDURES</p> <ol style="list-style-type: none"> The area around mature existing trees in the corridor zones is to be lightly scarified to a distance of between 0.25 to 0.75 of the height of the tree (to a maximum of 10 metres). Natural seeding is proposed for these areas. The scarified areas are to be weeded and mulched. 	

Jandra Quarry Environmental Protection Procedure R1.1 (con't)

3. Vegetation cuttings from clearing activities elsewhere in the quarry are to be placed in the scarified areas.
4. Hollow logs, tree limbs and rocks from vegetation clearing activities (see EPP F&F1.1) are to be liberally placed throughout the corridors.
5. Artificial nest boxes are to be dispersed throughout the revegetated area.
6. Areas which have not been scarified are to be replanted with local endemic species in line with recommended species in Table 5.1 of the EMP Overview.
7. Annual planting programs are to be scheduled for February/March. A mixture of direct seeding and the tubestock are to be used in line with section 5.6.6 of the EMP Overview.
8. Seedlings are to have appropriate tree guards in place. Spot spraying for weeds may be required (section 5.7.2. EMP Overview).
9. In the two years following replanting and direct seeding activities, the health of the two corridors is to be assessed. Five yearly surveys are then required.
10. The surveys are to be carried out in a way which addressed the variables identified in consent conditions 48 r to t (ie variable which are able to determine the health of the ecosystem).
11. Failed areas are to be replanted in the following season.

REPORTING

Reporting of the implementation of this procedure and outcomes from the monitoring of rehabilitation is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Jandra Quarry Environmental Protection Procedure R1.1 (con't)

Title	Topsoil Stripping and Management
Category	Rehabilitation Management
Reference	R1.2
Consent Conditions Ref	n/a
EMP overview Ref	Section 5.5
OBJECTIVES <ul style="list-style-type: none">To ensure valuable top-soil resources are conserved and afforded appropriate protection during storage.	
OTHER PROVISIONS <ul style="list-style-type: none">In the case of Jandra topsoil refers to the top 20cm of soil. Material below this has a high stone content and will be stored with the weathered overburden.Quarry planning is to aim to have top soil remove during low rainfall months, these being typically autumn months.Some topsoil can be directly used on rehabilitation areas (it is a seedbank in itself). This is to be determined in accordance with the status of the rehabilitation plan (see EPP R1.3).New employees are to be made aware of the location of topsoil stockpiles.	
PROCEDURES <ol style="list-style-type: none">Topsoil is to be stripped immediately prior to the area being required for a particular stage of the quarry expansion. To protect the soil during stripping, the topsoil must be moist prior to stripping (ie not over-dry or over-wet). Watering may be required prior to stripping.Topsoil stockpiles are to be located at the top of the ridge line north of the quarry pit (Figure 5.1 EMP Overview - attached). They are to be located at least 5m from standing vegetation or roads.	

Jandra Quarry Environmental Protection Procedure R1.2 (con't)

3. The stockpiles are to be a maximum height of 1.2m and have batters of 1(V) to 3(H). The surface is to be left rough and immediately revegetated with a cover crop.
4. The presence of the topsoil stockpiles is to be clearly marked on site maps and signposted.
5. The volume (and balance) of topsoil is to be quantified annually and recorded with this EPP.

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Rehabilitation Planning
Category	Rehabilitation Management
Reference	R1.3
Consent Conditions Ref	n/a
EMP overview Ref	Section 5.3
OBJECTIVES <ul style="list-style-type: none">To ensure the Jandra site is progressively rehabilitated and left with a self sustaining ecosystem of vegetation typical for the area.	
OTHER PROVISIONS <ul style="list-style-type: none">The revegetation of wildlife corridors is a separate activity to the rehabilitation program for the quarry (see EPP R1.1).This EPP relates to rehabilitation of disturbed (and disused) areas in the quarry, in particular overburden stockpiles and quarry benches as well as some minor landscaping.Species composition, revegetation techniques and preparation of surfaces have already been identified and specified (Section 5.6 of the EMP Overview).The regions requiring rehabilitation are identified in Figure 5.1 of the EMP Overview (attached).Planting is to be scheduled, as far as possible, for summer/early autumn. Standard rehabilitation techniques are to be used, ie surface contouring, ripping, seeding using direct means and/or use of tubestock, use of mulch/topsoil and stored tree limbs/rocks from previous clearing activities.	
PROCEDURES <ol style="list-style-type: none">Rehabilitation activities are to be planned a year in advance and developed at the time of annual quarry planning.	

Jandra Quarry Environmental Protection Procedure R1.3 (con't)

2. Prior to the commencement of the planning cycle, the success of the previous year's rehabilitation is to be assessed.
3. At the beginning of the annual quarry planning cycle disturbed areas no longer required for use are to be quantified and rehabilitation works costed. The scope of annual for rehabilitation work is to be specified.
4. A schedule of rehabilitation works for the year are then to be prepared taking into consideration the need to have revegetation mostly concluded by late summer / early autumn.
5. At five year intervals the health of any rehabilitated ecosystem is to be assessed in line with consent condition 48 r - t.
6. Rehabilitation of the quarry floor area. Is to be included in the future planning. (refer NPWS letter dated 13 July 2000).

REPORTING

Reporting of the implementation of this procedure and outcomes from the monitoring of rehabilitation is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 17 May 2001

Manager Responsible: Kevin Worth (Quarries Manager)

Jandra Quarry Environmental Protection Procedure R1.3 (con't)

Title	Protection of identified cultural heritage sites
Category	Cultural Heritage Management
Reference	CH1.1
Consent Conditions Ref	62 - 65
EMP overview Ref	Section 6
<p>OBJECTIVES</p> <ul style="list-style-type: none"> To ensure the protection and/or appropriate management for identified on-site cultural heritage sites. <p>OTHER PROVISIONS</p> <ul style="list-style-type: none"> This EPP relates to the management of cultural heritage sites identified in the EIS for the Jandra quarry (named J1 to J7). These sites are identified in Figure 6.1 of the EMP Overview (and attached). All new employees are to be briefed on the location and identifying markings for these sites and the protection status of J4 (protected under the <i>Heritage Act 1977</i>) and J7 (protected under the <i>National Parks and Wildlife Act 1974</i>). <p>PROCEDURES</p> <ol style="list-style-type: none"> Sites J1 to J7 are to be appropriately identified on quarry plans and physically identified in the field (note that Site J6 will not be affected under the current development consent). Update: procedure completed prior to commencement of excavation works in November 2000. A consent to destroy is to be obtained from the National Parks & Wildlife Service for sites J1, J2, J3 and J5 in consultation with the Taree-Purflett and Forster Local Aboriginal Land Councils. Update: procedure completed prior to commencement of excavation works in November 2000. A Consent to Destroy and Permit to Salvage was issued by NPWS On 3/10/00. Refer Consent # 57/CDS/2000. 	

Jandra Quarry Environmental Protection Procedure CH1.1 (con't)

3. Once the consent to destroy has been obtained, the land councils are to be offered the opportunity to salvage any relics identified at the sites. This offer needs to be put in writing and followed up.

Update: procedure completed prior to commencement of excavation works in November 2000. Representatives from both Forster and Taree-Purfleet LALC's inspected the sites.

4. A list of any Aboriginal relic salvaged from the site is to be record and attached to this EPP. The details are to be supplied to the NP&WS.

List of relics retrieved to date: Robert Paulson from the Forster LALC advised that a scatter of relics and artefacts were retrieved from sites J1 and J6 and relocated well outside the proposed excavation area at large trees and along the northern boundary fence line.

REPORTING

1. Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d). A list of any Aboriginal relic salvaged from the site is to be record and attached to this EPP with details are to be supplied to the NP&WS.

See point 4 above.

Date: 18 May 2001

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Management of unearthed cultural heritage sites
Category	Cultural Heritage Management
Reference	CH1.2
Consent Conditions Ref	62 - 65
EMP overview Ref	Section 6

OBJECTIVES

- To ensure the appropriate management of any unearthed (and currently not identified) cultural heritage sites during excavation processes at the quarry.

OTHER PROVISIONS

- All employees who are involved with excavation activities are to be briefed on this EPP and the requirement to watch for unearthed cultural items. Such employees are to be briefed on what to look for (in terms of relics) prior to the commencement of each stage of the quarry development.
- This is required to be enacted during vegetation clearing, the removal of topsoil and weathered overburden.

PROCEDURES

1. The Purfleet /Taree Local Aboriginal Land Council is to be advised in writing prior to earthworks commencing for each stage of the quarry extension offering the opportunity to undertake monitoring of excavation activities.
2. In the event that a suspected archaeological site is unearthed work is to stop immediately in the general vicinity of the area and the area pegged off and if possible roped off. No further activity is permitted in the vicinity of the area.
3. If considered necessary, expert advice is to be sought to determine whether the suspected relic is a relic.
4. If advice confirms that no relic is present, work can continue in the area.

Jandra Quarry Environmental Protection Procedure CH1.2 (con't)

5. If advice confirms the existence of a relic, or if this is self-evident, the NP&WS are to be contacted immediately and advised of the site. No further activity is permitted in the general vicinity until further advice from the NP&WS (Northern Heritage Unit in Coffs Harbour).

Note that the NP&WS will require a site inspection and may ask for the Local Land Councils to be informed and involved.

6. Any relics which may be subsequently removed from the site are to be listed with this EPP and a list supplied to the NP&WS.

REPORTING

1. Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d). Any relics which may be subsequently removed from the site are to be listed with this EPP and a list supplied to the NP&WS.

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Hours of Operation
Category	Noise and Blast Management
Reference	N&BM 1.1
Consent Conditions Ref	29 to 32
EMP overview Ref	Sections 7.2 and 7.3

OBJECTIVES

- To ensure that operations occur within approved hours.

OTHER PROVISIONS

- Work outside nominated hours is allowed only in accordance with Conditions 30 and 31. These are essentially for safety or emergency situations. The EPA and affected residents are to be notified where possible.
- Operation hours are can be varied with the written consent of the EPA where it is satisfied that the amenity of residents is not adversely affected.
- All new employees are to be made aware of the hours of operations contained in this EPP.

PROCEDURES

1. Hours operation:

6am to 6pm Monday to Friday
6am to 3pm Saturday

Ancillary operations: Re-fuelling, servicing and maintaining plant:

6am to 9pm Monday to Saturday

Blasting Operations:

9am to 5pm Monday to Friday
9am to 3pm Saturdays

Jandra Quarry Environmental Protection Procedure N&BM1.1 (con't)

Note: No work to be carried out on public holidays.

REPORTING

Reporting of the implementation of this procedure is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)

Title	Noise Monitoring
Category	Noise and Blast Management
Reference	N&BM 1.2
Consent Conditions Ref	43
EMP overview Ref	Sections 7.2.2

OBJECTIVES

- To appropriately monitor and record noise emissions from the operations to ensure compliance with statutory requirements.

OTHER PROVISIONS

- Received operational noise levels at residences should not exceed the rating background level by more than 5dB(A) or 50 dB(A) whichever is the lower.
- Monitoring frequency details are contained in the EPP Monitoring Table.

PROCEDURES

1. Noise monitoring is to be undertaken by qualified and experienced persons and in accordance with AS 1055 (1989).
2. Monitoring is to be carried out annually by sampling continuously over 72 hours.
3. Monitoring is to occur at locations identified in Figure 7.1 in the EMP Overview (attached).
4. Results of the monitoring are to be appended to this EMP and reported to authorities in line with EPP M1.5.

REPORTING

Reporting of the implementation of this procedure and the results of monitoring is to occur in the Annual EMP Report prepared as part of consent condition 12(d).

Jandra Quarry Environmental Protection Procedure N&BM1.2 (con't)

Date: 1 June 2000

Manager Responsible: Kevin Worth (Quarries Manager)