

ENVIRONMENTAL IMPACT INFORMATION (EII) MINING AND EXTRACTIVE INDUSTRIES

APPLICATIONS AND TRANSFERS

This form is designed to provide information for a proposed quarrying or extractive industry operation and to assess potential environmental impacts of the proposal. The information is required to assist Mineral Resources Tasmania (MRT) in drafting appropriate lease conditions, and to set a rehabilitation bond. Please refer to the *Quarry Code of Practice*, which will be used as the assessment standard. A full Environmental Management Plan is required when a major operation is proposed, or when it is believed that there is a potential for environmental harm.

Council may also accept this form as an environmental effects statement in a permit application.

A plan is also required.

Please provide the following information:

Name of applicant:	
Address:	
Telephone number:	
Mobile number:	
Facsimile number:	
Name of landowner (if private land):	
Landowner phone number:	
Lease application number:	
What type of application is it? (<i>circle</i>)	<div style="display: flex; justify-content: space-around;"> <i>New Grant</i> <i>Transfer</i> </div>
What other mining leases or operations are you involved in?	

Landowners may extract stone, sand and gravel for their own use on that property or sell less than 100 tonnes per annum without a Mining Lease, otherwise a Mining Lease is required.

(Nov 2007)

PLEASE ENSURE THE FOLLOWING INFORMATION IS PROVIDED:

(Circle *italics* as required.)

What is the *Quarry / Mine* called?

Access via:.....

What is the land tenure? *Private land / State Forest / Other Crown Land*

Operational status *New application / Transfer*

What is the current use of the site?

If the operation was pre-existing, who was the previous operator?

If a contractor is to be used, who is the contractor?

Has a Development Application been lodged with Council? *Yes / No*

Has a permit been granted or are there existing use rights?..... *Yes / No*

Is the proposed operation a level 2 activity under the *Environmental Management and Pollution Control Act*? *Yes / No*

MATERIAL TO BE EXTRACTED AND RESOURCES

What product is to be mined? *Sand / clay / gravel / hard rock / alluvial / other minerals*.

Estimated annual production? cubic metres/tonnes

Is there a demonstrated market? *Please provide information?*

.....

Estimated or measured resources cubic metres/tonnes of stone

..... tonnes of ore at% mineral

What size of lease is being applied for? hectares

ROYALTY

Does the Lease area cover any Crown land?..... *Yes / No*

Is it planned to extract minerals owned by the Crown? *Yes / No*

If the lease area covers private land, is a current landowner’s compensation agreement signed?

..... *Yes / No*

How will production records be kept? *Sales docket / Weighbridge docket / if other, please describe*

PUBLIC SAFETY

Safety is an important responsibility of the lessee.

How accessible is the site to the general public? *high risk / low risk*
Are gates or fences *existing / to be installed / required?*

Are there unprotected shafts, excavations, faces, dams or machinery? *Yes / No*

Measures taken to reduce hazards are as follows:

.....
.....

Is the access to hazardous areas controlled? *Yes / No*

PUBLIC LIABILITY INSURANCE

What level of public liability insurance do you carry? \$.....

It is a requirement of the mining lease that a minimum of \$10,000,000 public liability insurance is maintained; larger and/or higher risk operations will be required to carry \$20,000,000 of insurance.

OPERATION SUMMARY

Which methods or equipment are planned to be used?

- Earth moving / drill & blast*
- Crushing / screening / washing*
- Fixed or mobile plant*
- Small underground*
- Alluvial mining.*

Will *waste, overburden stockpiles* or *tailings* be produced?.....

How much experience do you have with this style of operation?.....

Will the operation be: *intermittent* or *continuous*?

If intermittent please describe
.....

SITE SELECTION and PLANNING (*Quarry Code of Practice*, pages 4 and 5)

Careful site selection, after consideration of all possible alternatives, may reduce future problems, particularly with respect to neighbours. New quarries should be located away from existing residences or watercourses. Plant should be situated to minimise noise and dust impact.

How close are watercourses to the excavation or plant area? (minimum 10 m).....

How close is the nearest permanent watercourse? (minimum 40 m).....

Are there any water users down stream of the site? *Yes / No*

How many neighbours are within 300 metres of the quarry or access road?.....

If vibratory screening is proposed, how many neighbours are within 500 metres?.....

If crushing is proposed, how many neighbours are within 750 metres?.....

If blasting is proposed, how many neighbours are within 1000 metres?.....

Visibility is the cause of much public complaint at many, otherwise well managed, quarries. Visibility of the planned quarry from frequently used roads or vantage points, may limit the height of the quarry or require specific working and rehabilitation plans.

Have you considered an alternative site? *Yes / No*

ACCESS (*Quarry Code of Practice*, page 7)

Access to quarry sites is of primary importance and should be considered very early in site planning, because this will constrain management alternatives for the quarry in the future. Often the issues arising at the quarry are different to those posed by the access.

Is there *existing access* / or *new access will be required*?

Has the junction with public roads been agreed with *Council / DIER* ?

What are the truck movements expected per day? Maximum

What are the truck movements expected per week? Maximum

What is the name of the main route of trucks leaving the quarry?.....

How many neighbours are potentially affected by the proposed traffic volume?

Is there potential for dust or noise from trucks to annoy neighbours?.....

Are the access road drains protected against erosion from quarry runoff? *Yes / No*

Will sediments in the water settle out before entering drains on public roads? *Yes / No*

STAGING OF OPERATIONS (Quarry Code of Practice, page 8)

Environmental impact is likely to increase with increasing area of disturbance. The resource should be worked in a systematic manner, generally across or down the slope, so that worked out sections can be rehabilitated as mining progresses. The Inspector will recommend a rehabilitation bond, based on the maximum disturbed area you require. The area you require will be included as a lease condition if the application is granted. Disturbed area is measured in Hectares (1 Hectare = 100 m x 100 m) and includes stripping, excavation, overburden, waste, tailings, plant, hardstand and access etc.

What is the maximum disturbed area you will require for the next 5 years?.....hectares

All rehabilitation bonds are periodically reviewed as the scale or nature of the potential environmental impact changes. Rehabilitation bonds may be reviewed at any time.

CLEARING AND PROGRESSIVE REHABILITATION (Quarry Code of Practice, page 9 and 15)

The impact of an operation should be kept to a minimum, and rehabilitation should be carried out progressively. Clearing should be kept to the minimum absolutely necessary for efficient operations. Topsoil must be protected and the guidelines below should be followed:

- If possible, windrows of topsoil should not exceed one metre in height.
- Topsoil should not be buried or driven on, as this will damage soil structure.
- Overburden should be stripped and stockpiled separately from soils.
- On hillside operations, it is best to store topsoil above or beside the excavation.
- Note that holding a Mining Lease does authorise topsoil removal from the site.

What area of vegetation is to be cleared?.....

What type of vegetation is to be cleared?

What is the topsoil depth?

What is the subsoil depth?.....

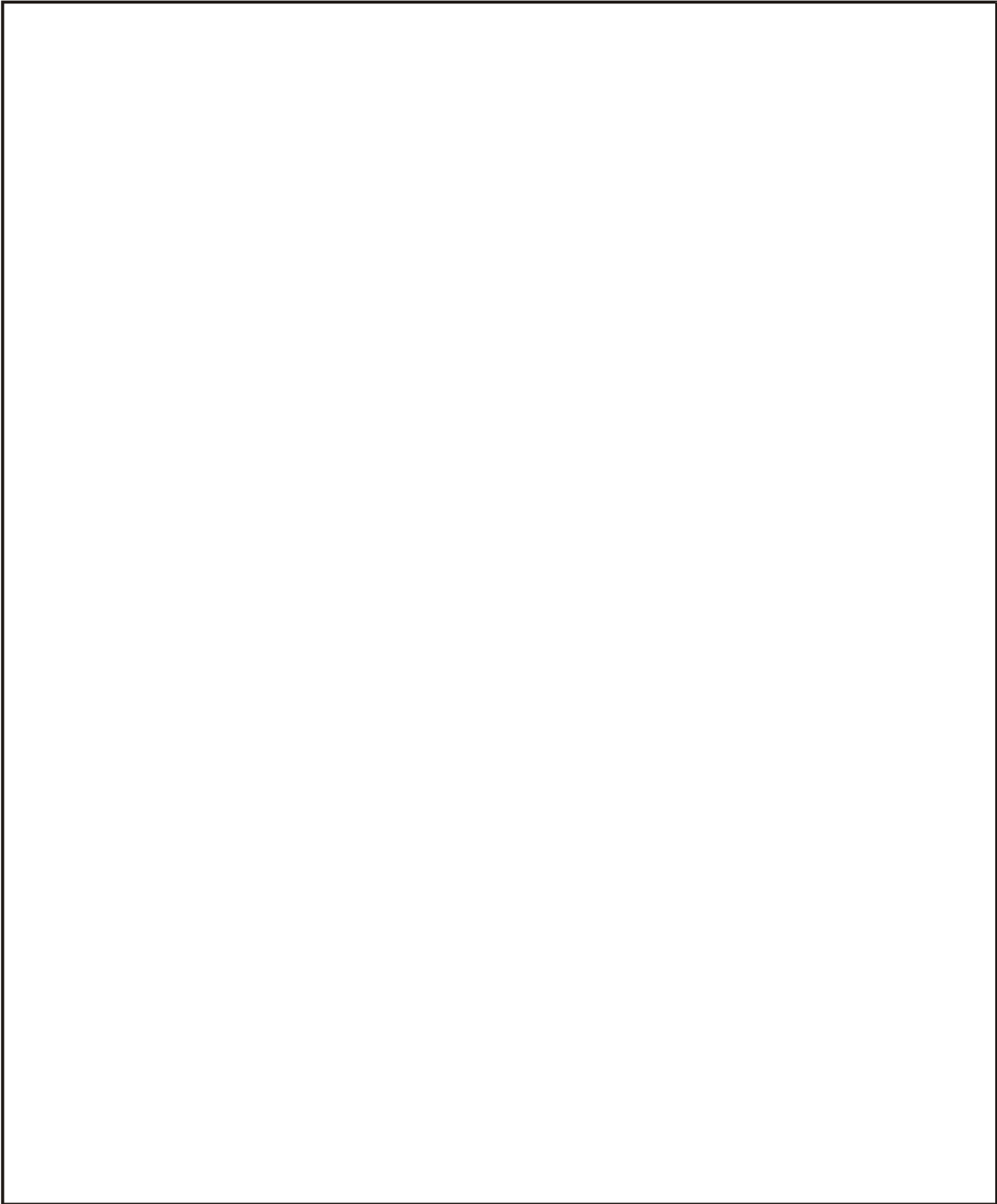
Wherever practical overburden, subsoil and topsoil should be placed directly onto worked out areas, to avoid double handling of soil and maximize the viability of the seed bank.

Is direct replacement of soil possible? Yes / No

Describe the stripping and stockpile arrangement:
.....
.....

Please provide a working plan of the operation using the work sheet below. (A spare planning sheet is included on page 12 and a sample mine plan is included on page 13).

SITE PLAN



Please Indicate:			
Access roads		Direction of water flow	
Visual screening		Drainage, settling ponds, process dams	
Direction of working		Stages of operation and rehabilitation	
Bench face		Distance to watercourses and housing	
Dimensions of excavation			
Location of processing plant		North	
Topsoil and overburden stockpiles			
		QUARRY	DATE
		SCALE	DRAWN

NOISE AND DUST CONTROL (*Quarry Code of Practice*, pages 10 and 13)

The primary nuisance associated with quarry operations is noise and dust. Where residences exist adjacent to a quarry, precautions should be taken to reduce their impact. Visible dust should be confined within the boundary of the premises. Reasonable operating hours are considered to be 7 am to 7 pm weekdays and 8 am to 4 pm weekends.

What are the planned hours of operation on weekdays?am to.....pm

What are the planned hours of operation on weekends?am to.....pm

Tick the measures to be used to reduce nuisance dust and noise:

- Plant located to minimise dust and noise.
- Enclosures, sprays and dust extractors.
- Bund walls for noise and wind breaks for dust.
- Maintenance of roads and machinery for noise, water carts for dust.
- Controlled vehicle speeds (especially near neighbours).
- Drop distance to stockpiles kept to a minimum.
- Covered loads or material not exceeding the tray walls of trucks.
- Alternative transport route considered.
- Other

BLASTING (*Quarry Code of Practice*, page 12)

Will blasting be required?

Yes / No (next section)

Blasting is necessary at some operations. Operators should be aware that blasting may be distressing to the public. Blasting must not take place unless authorised in the Permit issued by Council. Precautions must be taken to prevent fly-rock, noise and vibration.

What is the planned frequency of blasts?.....

Is there potential hazard to residents, traffic or power lines?.....

How close is the nearest hazard?.....

Is there potential hazard caused by excessive noise and vibration?.....

EXCAVATION AND DISTURBANCE BENCHING
(Quarry Code of Practice, page 14)

Will the deposit be benched to win material? *Yes / No (next section)*
How many working faces are planned?.....
What is the planned height of working face/s?

Towards the end of the productive life of the quarry, the uppermost benches should be reduced in height. Where possible benches should be recontoured to form slopes by grading them out or back filling. Slopes greater than 30 metres in length should be broken up with drainage berms along contour to reduce erosion.

What is the final land form shape? *Benches / Recontoured slopes*
What is the planned final face height?
What is the planned final bench width?
What is the planned final slope of faces?
Is the access to the upper benches safe?.....

Orientation of benches should take into account the underlying geology and vantage points from which the quarry is visible. Where practicable, the uppermost benches of the quarry should be established and worked out first. This allows the upper sections of the face, which are often the most visible, to be rehabilitated early in the life of the operation.

Can the uppermost benches be worked first? *Yes / No*

If *No*, describe how the quarry is to be developed
.....
.....
.....

NOXIOUS WEEDS AND PLANT DISEASES (Quarry Code of Practice, page 15)

Weed invasion can be minimised by tackling weed infestations quickly to prevent a large seed bank. Weeds should be managed until such time as native species are re-established. A list of weeds is shown on page 40 of the Code.

What existing weeds are on site at present?
How do you plan to control the weeds on site?.....

Quarries can also spread the root rotting pathogen *Phytophthora cinnamomi* (PC) responsible for the increasing loss of native plant communities in coastal heath and moorland areas. Gravel free of PC may be stipulated for road contracts in sensitive zones.

Does the quarry produce sand or gravel? *Yes / No*
Is the quarry situated in native vegetation? *Yes / No*

Is the elevation less than 800 metres? *Yes / No*
Is rainfall greater than 600 mm per annum? *Yes / No*
Are zones of 'die back' evident in the native heath? *Yes / No*

DRAINAGE AND EROSION CONTROL (Quarry Code of Practice, page 17)

Water leaving quarry premises should be clear and free from contaminants. Water quality may be affected far beyond the premises, affecting downstream neighbours and the environment. Nearly all quarry sites are liable to drainage or erosion problems if run off is not controlled.

- Are there downstream water users? *Yes / No*
- Are clays or other fine material on site? *Yes / No*
- Will the exposed surface easily erode? *Yes / No*
- Given the nature of the catchment above, is a diversion drain required? *Yes / No*

Tick the control measures which are proposed.

- Cut off drain/s?
 - Drains for pitstockpile areas
 - Drains.....for access road
 - Culverts
 - Settling traps for pit
 - Settling traps for stockpile area
 - Settling traps for access road
- (Please show the above, on the plan)

Certain minerals have the potential to cause acid drainage pollution when exposed to air and water. Likely visible signs include the presence of pyrite minerals and iron-rich precipitates. These may be evident in the form of brown staining on rocks or in water.

Is there evidence of pyrite or acid drainage *Yes / No*

If *Yes* the operation should be restricted to the oxidised zone.

WASTE DISPOSAL AND STORAGE (Quarry Code of Practice, page 19)

Quarries should not be allowed to accumulate rubbish, disused plant, waste oil or other waste materials. Oil changes should not be done on site unless hydrocarbon spillage equipment is on hand. Chemicals and fluids must be stored according to Australian Standards. Sewerage must be Council approved and landfills approved by DTAE.

Are the following goods to be stored on site?

- Fuel or oil *Yes / No* How?
- Explosives *Yes / No* How?
- Other *Yes / No* How?

Are oil changes done on site *Yes / No*

What measures will be adopted to control spillage?

.....

How will you dispose of rubbish and scrap?.....

.....

REHABILITATION (*Quarry Code of Practice*, page 22)

The main aims of rehabilitation work are:

- The stabilisation of all worked out areas to minimise ongoing erosion.
- To revegetate worked out areas with suitable plant species.
- To minimise visual impact of disturbed areas.
- To ensure that worked out areas are safe for future uses.

The final land use of the site will determine the final landform, which should blend with the surrounding landscape.

What is the proposed *after use* of the site?.....

What *redevelopment/rehabilitation/revegetation* is proposed?

.....

Will rehabilitation progressively follow extraction? *Yes / No*

If 'No', why not?.....

.....

What stages of rehabilitation have you identified?

.....

Site preparation earthworks are best carried out during early-mid autumn.

Tick the intended rehabilitation site preparation to be used on the check list below:

- | | |
|--|---|
| <input type="checkbox"/> Removal of plant and rubbish | <input type="checkbox"/> Removal of buildings |
| <input type="checkbox"/> Leveling of bunds and stockpiles | <input type="checkbox"/> Overburden back filled |
| <input type="checkbox"/> Slopes reduced below 3 in 1 | <input type="checkbox"/> Slope distance less than 30 metres |
| <input type="checkbox"/> Compacted areas and roads deep ripped | <input type="checkbox"/> Bench heights reduced to 5 metres |
| <input type="checkbox"/> Rippable benches recontoured | <input type="checkbox"/> Wetlands ponds constructed |
| <input type="checkbox"/> Signage / security around remnant benches | <input type="checkbox"/> Weed identification and control |

REVEGETATION (Quarry Code of Practice, page 25)

Are sections of the planned operation visible from main roads etc? Yes / No

What *landscaping / vegetation* will be *planted / retained*, to screen the operation?

.....

Establishment of a self-sustaining cover of vegetation is the best low maintenance stabiliser of disturbed sites in the long term. Generally, the vegetation type that existed before the disturbance or a similar vegetation type will be most successful afterwards. Seed application should be done mid-late autumn whilst tree planting is best carried out in early spring.

Tick the intended revegetation measures to be used on the checklist below:

- | | | |
|---|---|--|
| <input type="checkbox"/> Soil importation * | <input type="checkbox"/> Soil spreading | <input type="checkbox"/> Soil tillage / ripping |
| <input type="checkbox"/> Direct seeding | <input type="checkbox"/> Cover / nurse crop | <input type="checkbox"/> Spreading of seed slash |
| <input type="checkbox"/> Tree planting | <input type="checkbox"/> Fertiliser application | <input type="checkbox"/> Mulching |
| <input type="checkbox"/> Water reticulation | <input type="checkbox"/> Browsing controls | |

* Note that if soil is imported stringent weed control measures must be taken.

Rehabilitation is a process which may take several years to produce a stable and self-sustaining ecosystem. Maintenance of rehabilitation is vitally important and any failures should be rectified quickly.

Identify the intended follow up measures to be used on the checklist below:

- | | | |
|--|---------------------------------------|---|
| <input type="checkbox"/> Monitor drainage, erosion control and plant growth. | | |
| <input type="checkbox"/> Follow up fertiliser | <input type="checkbox"/> Weed control | <input type="checkbox"/> Re-sowing for crop failure |

Do you understand that a security deposit (bond) will be imposed on the extent of rehabilitation required. Also that the bond will be reviewed if the rehabilitation liability changes. Yes / No

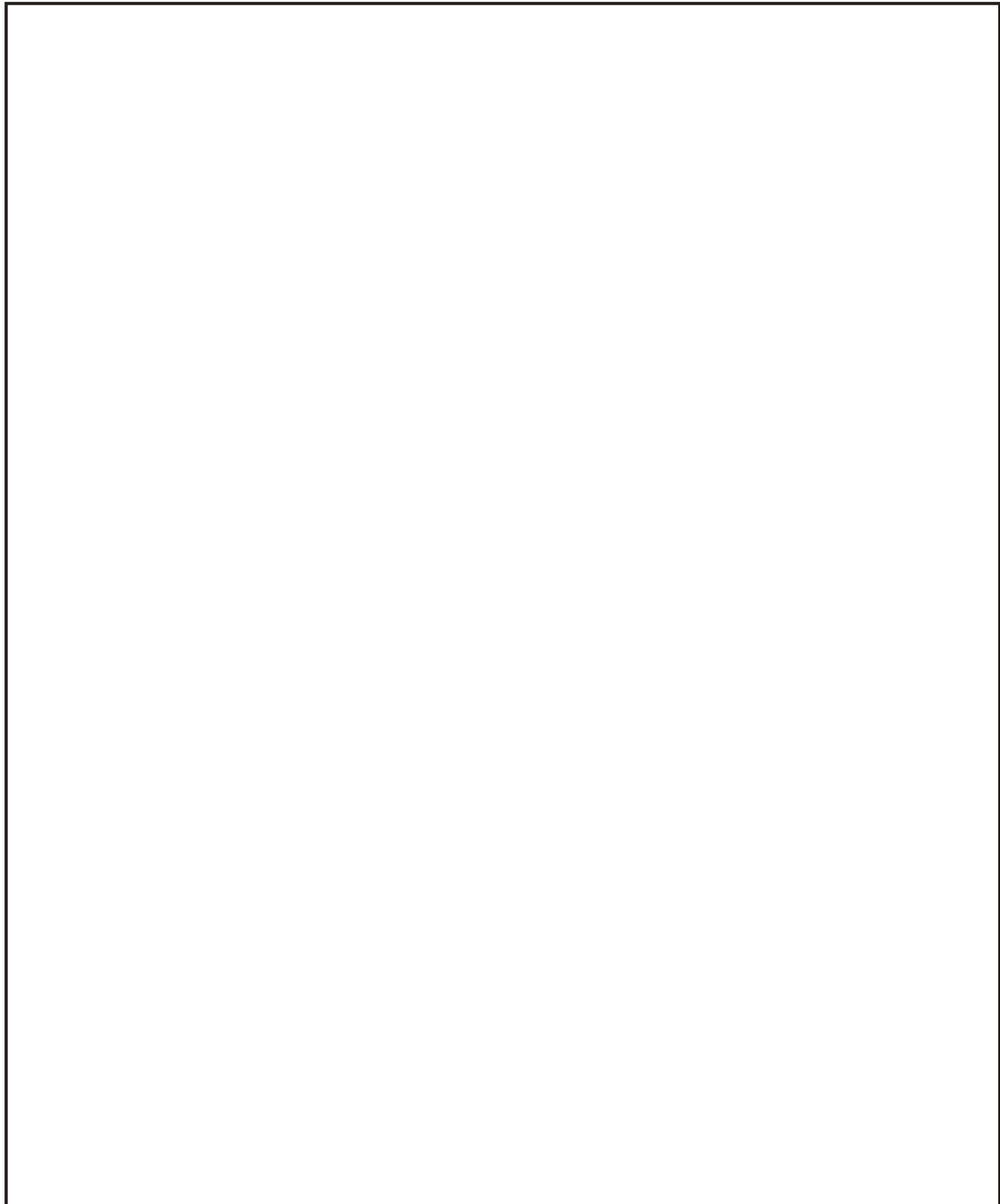
Before the bond is released the minimum standards below are to be achieved:

- The rehabilitated area should be safe and self sustaining.
- The area must be suitable for the planned final use or rehabilitation objective.
- Rehabilitated areas should be visibly free of active erosion and noxious weeds.
- Revegetation is established and effective over the whole site.

Evaluation of revegetation will be dependent on factors including tree density, species diversity, and vegetative cover. A copy of this document should be retained. Your performance will be measured against it.

Signed:..... Date:

SPARE SITE PLAN



Please Indicate:

Access roads



Visual screening



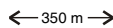
Direction of working



Bench face



Dimensions of excavation



Location of processing plant



Topsoil and overburden stockpiles



Direction of water flow



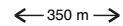
Drainage, settling ponds, process dams



Stages of operation and rehabilitation



Distance to watercourses and housing

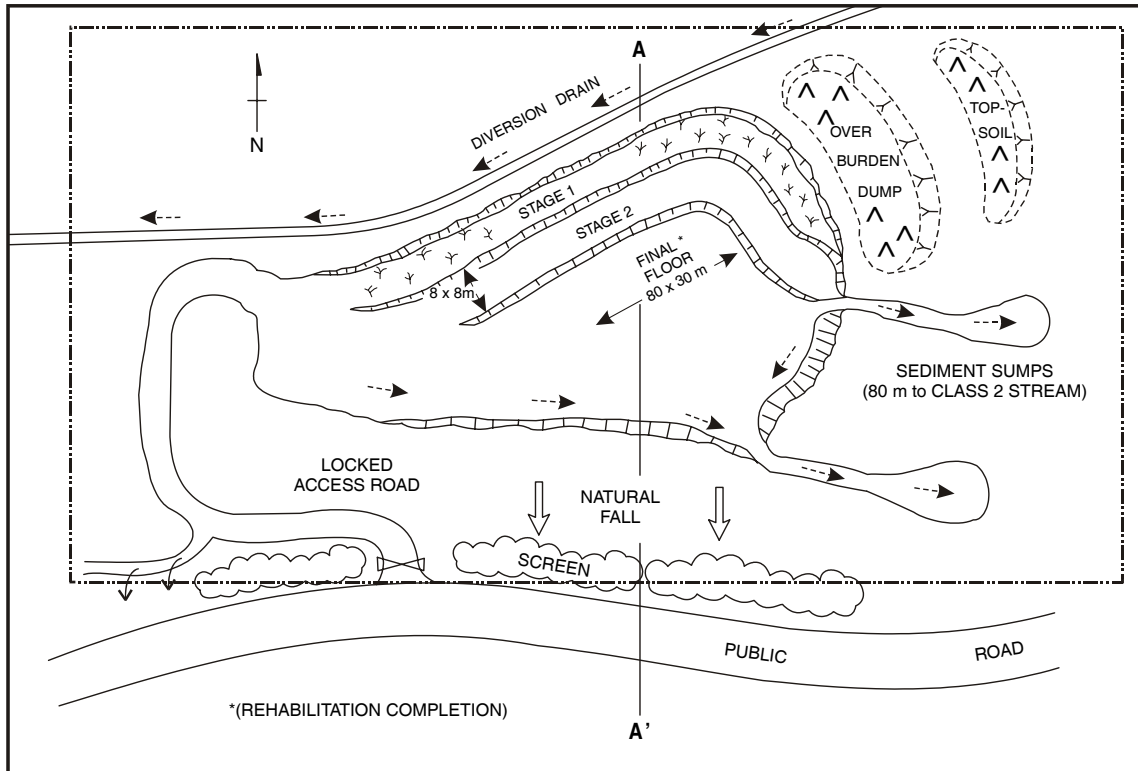


North



QUARRY	DATE
SCALE	DRAWN

SAMPLE SITE PLAN

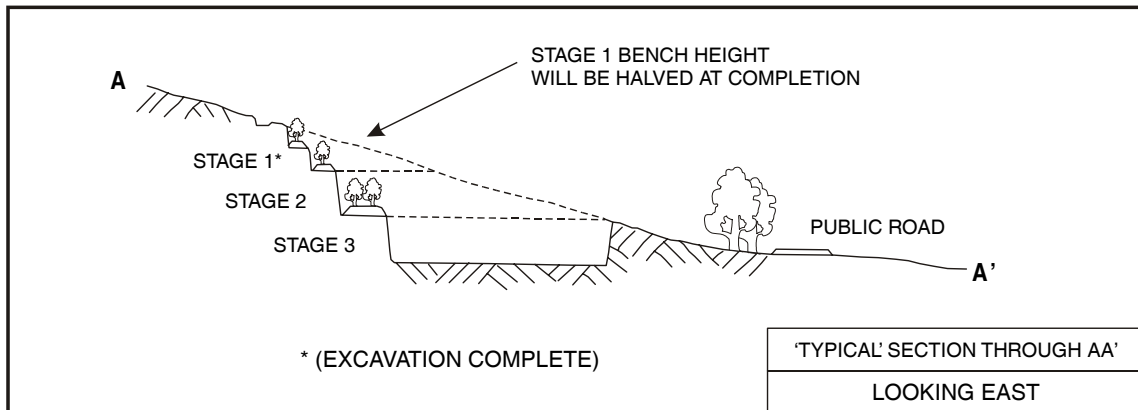


Please Indicate:

Access roads		Direction of water flow	
Visual screening		Drainage, settling ponds, process dams	
Direction of working		Stages of operation and rehabilitation	
Bench face		Distance to watercourses and housing	
Dimensions of excavation		Lease/operation boundary	
Location of processing plant			
Topsoil and overburden stockpiles		North	

'TYPICAL' QUARRY		DATE
SCALE	DRAWN	

SAMPLE SECTION



E11.3

Inspectors assessment — Application/Transfer

Joint inspection	<i>Land owner / Council / DTAE</i>		
Location accurate	<i>GPS..... Yes / No</i>		mE
Co-ordinates	<i>Quarry / Posted Notice / Per Doc</i>		mN
Resource	<i>Measured / Estimated</i>		
Market estimate	<i>Reasonable / Speculative</i>		
Royalty	<i>Recorded Yes / No</i>		
Public safety	<i>Considered Yes / No</i>		
Public safety measures required	<i>Satisfactory</i>		
Type of operation	<i>Blast / Crush / Screen / Excavate / Alluvial / Mining</i>		
Is the plant well maintained / located	<i>Yes / No (Transfer)</i>		
Watercourses far enough away	<i>Yes / No</i>		
Residences far enough away	<i>Yes / No</i>		
Visibility well screened	<i>Yes / No / Background</i>		
Access satisfactory	<i>Yes / No</i>		
Site selection	<i>Supported / Not supported</i>		
Staging	<i>Considered / Agreed</i>		
Clearing	<i>Excessive / Agreed</i>		
Soil conservation satisfactory	<i>Yes / No</i>		
Operating hours standard	<i>Yes / No</i>		
Potential nuisance	<i>Nil / Noise / Dust / Traffic</i>		
Blasting risks	<i>Noise / Vibration / Fly rock / NA</i>		
Blasting prohibited	<i>Yes / No</i>		
Excavation problems	<i>Nil / Operating / Future</i>		
Weed control satisfactory	<i>Yes / No</i>		
Phytophthora cinnamomi	<i>Symptoms / Susceptible / Free</i>		
Drainage controls required	<i>Satisfactory / Diversion / Silt trap</i>		
Waste disposal and storage satisfactory	<i>Yes / No</i>		
Rehabilitation effective	<i>Yes / No / Progressive / Backlog</i>		
Is the planned operation practical	<i>Yes / No</i>		
Further information required	<i>EMP Level 2 permit / Watercourse / Phytophthora / Acid drainage</i>		
Current Disturbance	Rehabilitation	Unrehabilitated Area	
Earthworks on disturbed area (spreading soil, drainage works)ha × \$2,500	\$	
Extra for compacted / hard areas (roads, benches, recontouring, ripping)ha × \$1,500	\$	
Extra for soil importation (where stockpiled soil is inadequate)ha × \$1,500	\$	
Revegetation and maintenance (sowing, planting, weeds, erosion)ha × \$1,000	\$	
Area of Crown land <i>leased</i> (Crown land attracts a premium)ha × \$200	\$	
Mobilisation costs (total per unit per trip)hrs × \$100	\$	
Difficult conditions (high faces, oversize rock dumps)		\$	
Deductions (such as agreed rehabilitation work programs)		less \$	
<i>Bond calculation to reflect costs to MRT</i>			
Unrehabilitated area not to exceed	hectares	\$	
Royalty follow up required <i>Yes / No</i>	Public liability insurance required \$10,000,000 / \$20,000,000	<i>more / same / less</i> <i>minimum \$5000</i>	
Application Supported <i>Yes / No</i>	Term years Review years		

Comment / special conditions

.....

.....

.....

Inspector

Date

***CONSTRUCTION MATERIALS (CONMAT) REGISTER:**

(Please attach materials testing results if available)

What is the rock type? *Dolerite / quartzite / basalt / shale / granite / other*.....

What is the material? *Fresh rock / weathered rock / gravel / sand / clay / fines*

What is the overburden depth?.....

What *is / will be* the average annual production in m³?.....

What *is / will be* the average amount crushed per annum in m³?.....

Extraction *Loader (free digging) / Excavator (hard digging) / Dozer (ripping required)*

Drill and blast (hard rock)

Sizing *Crushed (maximum size mm) / Screened (maximum size mm)*

As Extracted (maximum size mm)

Use *Aggregate / road base / road blending / road sheeting / road sealing /*

general road material / crushed stone / concrete sand / building sand/

general sand / silica / building stone / bricks / other

Reserves *Less than 10 000 m³ / 10 000–100 000 m³ / 100 000–1 000 000 m³*

Greater than 1 000 000 m³ / Not determined

*Office Use: Forward this page to Clive Calver, Mineral Resources Tasmania, PO Box 56 Rosny 7018