Mineral Resources Tasmania
Department of State Growth

Tasmanian Government

MINING PLAN
MINING AND EXTRACTIVE INDUSTRIES

APPLICATION

This form is designed to provide information for a proposed mining, quarrying or extractive industry operation. The information is required to assist Mineral Resources Tasmania (MRT) in assessing the application, drafting appropriate lease conditions, and is used to set a security deposit. Please refer to the *Quarry Code of Practice*, which will be used as the assessment standard. Do not use this form if a major operation is proposed.

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 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.

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 / PTPZ (forestry) Land / Other Crown Land*

What is the current use of the site? .....

Operational status ..... *New application/Transfer*

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 1994*? ..... *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

Attach statement of resource estimation if you have one, noting if the resource is JORC compliant.

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, has a current landowner's compensation agreement been signed?..... *Yes/No*

Attach a copy of the signed agreement.

How will production records be kept? *Sales dockets/Weighbridge dockets*

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.

Attach a copy of your certificate of currency if not already provided to MRT.

OPERATION SUMMARY

What 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 10 and 11)

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) .....

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 13)

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/State Roads?*

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 14)

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 security deposit, 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 □ 100 m) and includes stripping, excavation, overburden, waste, tailings, plant, hardstand and access.

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

All security deposits are periodically reviewed as the scale or nature of the operation and area of disturbance changes.

EXISTING VEGETATION & FAUNA

You may be requested to undertake a flora and fauna survey over all or parts of the application area, as this information may be critical to understanding a potentially significant environmental risk to the proposal.

If a survey is required it must be provided to MRT to assess the lease application.

CLEARING AND PROGRESSIVE REHABILITATION (*Quarry Code of Practice*, pages 15)

The area of disturbance 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 not authorise topsoil removal from the site.

What area 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:.....

.....

.....

CULTURAL HERITAGE SURVEY

You may be requested to undertake a cultural heritage survey (Aboriginal and European) over all or parts of the application area.

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	--- 2002 ---
Bench face		Distance to watercourses and housing	← 350 m →
Dimensions of excavation	← 350 m →		
Location of processing plant	☒	North	N
Topsoil and overburden stockpiles	^ ^ topsoil ^ ^		

QUARRY	DATE
SCALE	DRAWN

NOISE AND DUST CONTROL (*Quarry Code of Practice*, pages 16 and 20)

The primary nuisance associated with quarry operations is noise and dust. Where residences exist adjacent to a quarry, precautions should be taken to reduce the impact of noise and dust. 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 18)

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 20)

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 22)

Weed invasion can be minimised by tackling weed infestations quickly. 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 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 24)

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 pit .....stockpile 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 26)

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 the Environmental Protection Authority (EPA).

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 29)

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:

☐ Removal of plant and rubbish

☐ Removal of buildings

☐ Levelling of bunds and stockpiles

☐ Overburden back filled

☐ Slopes reduced below 3 in 1

☐ Slope distance less than 30 metres

☐ Compacted areas and roads deep ripped

☐ Bench heights reduced to 5 metres

☐ Rippable benches recontoured

☐ Wetlands ponds constructed

☐ Signage/security around remnant benches

☐ Weed identification and control

REVEGETATION (*Quarry Code of Practice*, page 33)

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:

☐ Soil importation* ☐ Soil spreading ☐ Soil tillage/ripping

☐ Direct seeding ☐ Cover/nurse crop ☐ Spreading of seed slash

☐ Tree planting ☐ Fertiliser application ☐ Mulching

☐ Water reticulation ☐ 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:

☐ Monitor drainage, erosion control and plant growth.

☐ Follow up fertiliser ☐ Weed control ☐ Re-sowing for crop failure

Do you understand that a security deposit will be imposed on the extent of rehabilitation required, and also that the security deposit will be reviewed if the rehabilitation liability changes. *Yes/No*

Before the security deposit 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: .....

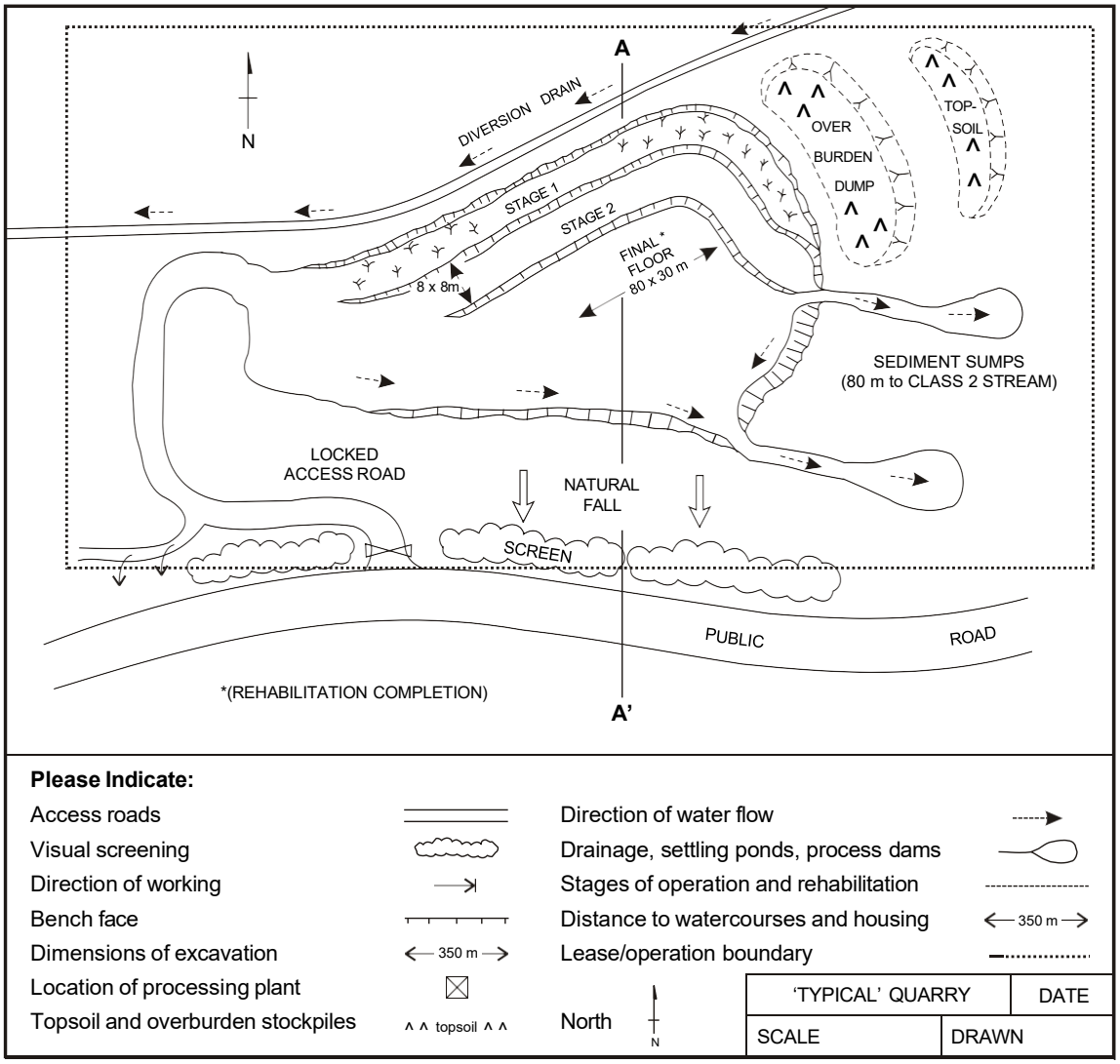
SPARE SITE PLAN

Please Indicate:

Access roads		Direction of water flow	
Visual screening		Drainage, settling ponds, process dams	
Direction of working		Stages of operation and rehabilitation	--- 2002 ---
Bench face		Distance to watercourses and housing	← 350 m →
Dimensions of excavation	← 350 m →		
Location of processing plant		North	N
Topsoil and overburden stockpiles	^ ^ topsoil ^ ^		

QUARRY	DATE
SCALE	DRAWN

SAMPLE SITE PLAN

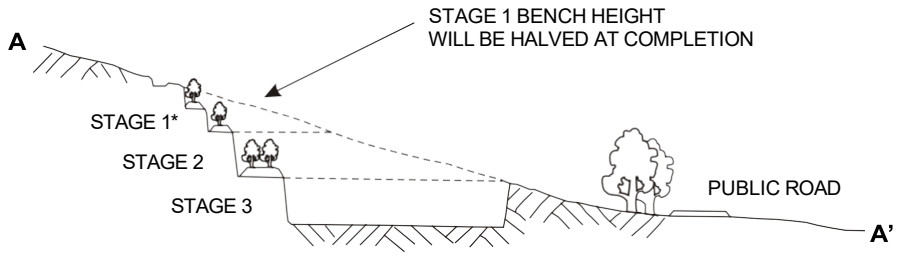


Please Indicate:

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	← 350 m →
Dimensions of excavation	← 350 m →	Lease/operation boundary	
Location of processing plant			
Topsoil and overburden stockpiles	^ ^ topsoil ^ ^	North	N

'TYPICAL' QUARRY	DATE
SCALE	DRAWN

SAMPLE SECTION



* (EXCAVATION COMPLETE)

'TYPICAL' SECTION THROUGH AA'
LOOKING EAST

EII_3

***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 m^3? .....

What *is/will be* the average amount crushed per annum in m^3? .....

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 m^3/10 000–100 000 m^3/100 000–1 000 000 m^3*
Greater than 1 000 000 m^3/not determined

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