



# Drill and Blast near Aboriginal Heritage Sites Procedure

EA-PRO-00005

## 1 Purpose and Scope

### 1.1 Purpose

This procedure has been prepared to provide clear direction to Roy Hill employees and Contractors to protect Aboriginal heritage sites during drill and blast operations.

### 1.2 Scope

This document pertains to all Roy Hill employees, Contractors and their personnel. The scope of this procedure applies to all activities in the drill and blast process with the potential to impact on Aboriginal heritage sites.

## 2 Procedure

### 2.1 Pre-Blast

- All drill and blast personnel will have undertaken the Aboriginal heritage induction before commencing work.
- Where possible, drill and blast should commence in areas where no Aboriginal heritage sites have been located, to allow experience and knowledge to be gained of the geology and suitable methods of protection for Aboriginal heritage sites.
- The Drill and Blast Superintendent will submit a blast management plan to the Manager Community Development at least 14 days in advance of proposed works. The plan will cover issues such as:
  - timeframes of drilling program (start and completion);
  - locations for Drill and Blast operations including blast exclusion zones;
  - any access tracks, entry/egress points required including blast guard positions;
  - reference to any Ground Disturbance Permit which has been lodged for the works;
  - drill and blast methods being used and provision for recording vibration levels (if located within 100m of an Aboriginal heritage site);
  - suitable protective measures to be used for any Aboriginal heritage sites located in the vicinity of the drill/blast zone;
  - response plan relating to misfire/fly rock where it could impact an Aboriginal heritage site.

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- The Community Development team will review the management plan and seek additional information if required.
- Maps will be made available to the Drill and Blast Superintendent by the Community Development team which show Aboriginal heritage sites and the area of impact.
- Prior to the blast, the Community Development team will inspect relevant Aboriginal heritage sites to ensure the protection in the blast plan is in place. Aboriginal heritage sites in the vicinity of the works will be photographed. When the photographs are taken, the GPS (Global Positioning System) coordinates of the photographer's position and the direction of the photograph will be recorded.

## 2.2 Post Blast

- Following the "all clear", the Community Development team will inspect the area and make a photographic record, noting the camera position with the GPS coordinates and photograph direction.
- If there is an intrusion of blast material into the site, or damage to any of the cultural material, the Drill and Blast Superintendent will be notified. A member of the Community Development team and the Drill and Blast Superintendent will inspect the area. A photographic record will be made, the location of the blast material or site damage will be recorded with a differential GPS which will provide more accurate spatial coordinates than a standard GPS.
- Where vibration recordings are required a copy of the readings will be provided to the Manager Community Development within five days of the blast by the Drill and Blast Engineer.

## 2.3 Breaches

This procedure is deemed to have been breached if:

- any area within an Aboriginal heritage site is damaged, disturbed, altered, modified or impacted. This includes the entire site area, and is not restricted to cultural materials within the site;
- an Aboriginal heritage site has been entered without authorisation; or
- an Aboriginal heritage site is photographed without the consent of the Manager Community Development.

Any breach of this procedure must immediately be reported as an incident in ISMS by the Drill and Blast Superintendent and the Manager Community Development who will then follow and complete the Incident Investigation and Reporting Procedure (100RH-0000-HS-PRO-2004)

## 2.4 Investigation and Enforcement

Any reported or identified breach of this procedure must be investigated. If an Aboriginal heritage site has been impacted, the matter must be reported to the Department of Aboriginal Affairs (DAA) and the relevant Native Title Group for the area by the Manager Community Development.

The Aboriginal Heritage Act 1972 (AHA) provides for penalties to be applied where an Aboriginal heritage site has been impacted. In addition to these formal statutory penalties, Roy Hill will not accept any impact to an Aboriginal heritage site, where it occurs in breach of this procedure. Any person found to have breached this procedure may have their accommodation rescinded with ramifications for their continued work with Roy Hill.

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## 3 Adverse Impacts on Aboriginal Sites as a result of Drill & Blast Operations

An adverse impact is when a site has been excavated, damaged, concealed or in any way altered. Fly rock, dust, vibration and people all have the potential to adversely impact on an Aboriginal heritage site.

### 3.1 Fly rock

- There must be no impact on Aboriginal heritage sites. No fly rock may encroach the boundaries of a site. This is to protect all features of the site which may not be visible.

### 3.2 Dust

- Dust can obscure engravings, grinding patches and artefact scatters which constitutes concealment.
- The long term impacts of dust on features of Aboriginal heritage sites is unknown, hence best practice is to prevent dust from accumulating on a site.

### 3.3 Vibration – air and ground

- Air and ground vibrations may have an impact on Aboriginal heritage sites. Engravings are particularly susceptible to the impact of vibrations.

### 3.4 People

- Walking on exposed rock surfaces causes the surfaces to break and crumble over time. Exposed rock surfaces may contain Aboriginal heritage sites in the form of engravings. Engravings may be difficult to identify due to a variety of factors such as the natural degradation of rock surfaces, the build-up of desert varnish and light conditions.
- Moving of artefacts compromises the integrity of an Aboriginal heritage site.
- Rock shelters are fragile environments and should not be entered.
- Entering any Aboriginal heritage site may in itself constitute an adverse impact.

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## 4 Activities for mitigation of adverse impacts on Aboriginal Heritage Sites

The choice of method for protection during drill and blast operations may vary according to site type and environmental conditions.

### 4.1 Fly rock

- It is critical that all known causes of fly rock be considered and factored into the blast plan.

### 4.2 Dust

- During drilling, dust that is blowing towards an Aboriginal heritage site must be controlled. It is the responsibility of the Drill and Blast Supervisor to ensure that the drill rig is suitably equipped.
- Dust from blasting is difficult to control. Blasting should not take place if it is obvious that the prevailing wind will deposit dust over an Aboriginal heritage site.

### 4.3 Blast Matting/Sandbagging

- Any Aboriginal heritage site less than 200 metres from a blast will require an adequate measure of protection. This is to be determined by the Drill and Blast Supervisor and may include the use of blast mats/sandbags.
- All engraving sites must have additional protective blast matting or sand bagging during drill and blast operations.
- In areas of artefact scatters, blast matting and sand bagging may not be practical. Protection must then rely on blast design.
- The personnel responsible for placement of sand bags and mats within the Aboriginal heritage sites will be determined by the Manager Community Development.

### 4.4 People

- No one is to enter an Aboriginal heritage site without permission unless they are a recognised custodian of Aboriginal cultural heritage in that area or member of the Roy Hill Community Development team.
- All Roy Hill staff and Contractors must drive on cleared and graded tracks or roads.
- All refuse must be contained and not allowed to be blown outside the work area.

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## 5 Accountabilities

Role	Responsibility
Community Development team	<ul style="list-style-type: none"> <li>Roy Hill's Community Development team will identify Aboriginal heritage sites.</li> <li>The spatial data for Aboriginal heritage sites will be made available to Roy Hill's Geographic Information System (GIS) Department.</li> <li>Roy Hill's Community Development team will ensure that the boundaries of Aboriginal heritage sites adjacent to construction areas are physically demarcated to alert all personnel of the site extents.</li> <li>Roy Hill's Community Development team will maintain a record of all Aboriginal heritage sites.</li> <li>Roy Hill's Community Development team will review the drill and blast management plan and if required assist the Drill and Blast Superintendent to install any protective measures deemed to be appropriate at Aboriginal heritage sites.</li> </ul>
Drill and Blast Superintendent	<ul style="list-style-type: none"> <li>Where a blast exclusion zones encroach an Aboriginal heritage exclusion zone. The Drill and Blast Superintendent will deliver a drill and blast schedule and management plan 14 days prior to blasting for review by the Community Development team.</li> <li>The release schedule will provide expected time lines of blasting and include any requirements for the Community Development team.</li> <li>The Drill and Blast schedule is a live mining operational document and may require changes. Where changes are required the Drill and Blast Engineer will notify the Community Development team.</li> </ul>
Drill and Blast Engineer	<ul style="list-style-type: none"> <li>The blast exclusion map should address these extra points:                             <ul style="list-style-type: none"> <li>Location of firing locations, monitoring and support equipment, including access to and from these position both pre and post blasting that could encourage the Aboriginal heritage exclusion zone</li> <li>Location of blast guards and access to and from final blast guard positions</li> <li>Distance from the closes blast hole to be fired to any Aboriginal heritage site</li> <li>Any requirement from the Community Development team</li> </ul> </li> </ul>
Blast Controller	<ul style="list-style-type: none"> <li>The Blast Controller is responsible for all notifications and blast activity within the blast execution zones as per the Roy Hill Explosives Management plan.</li> <li>The Blast Controller will finalise the exclusion map with input from the Community Development team prior to releasing the blast notification.</li> </ul>
Contractors – Drill and Blast	<ul style="list-style-type: none"> <li>Where a blast exclusion zone encroaches on an Aboriginal heritage exclusion zone, the contractor will deliver to the Drill and Blast Superintendent a drill and blast schedule and management plan 21 days prior to drill and blast operations for review.</li> <li>The schedule will provide expected time lines of drilling and blasting activities and include any requirements from Community Development team.</li> <li>The Drill and Blast schedule is a live mining operational document and may require changes. Where changes are required the Contractor will notify the Roy Hill Drill and Blast Superintendent.</li> </ul>
GIS Mapping	<ul style="list-style-type: none"> <li>Roy Hill's GIS Department in consultation with the Community Development team will provide maps showing Aboriginal heritage sites in relation to proposed works. These maps will be available to all persons requiring them.</li> </ul>

Table 1 – Accountabilities

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## 6 Definitions

Term	Definition
<i>Aboriginal Heritage Act (1972) (AHA)</i>	An Act to make provision for the preservation on behalf of the community of places and objects customarily used by or traditional to the original inhabitants of Australia or their descendants, or associated therewith, and for other purposes incidental thereto.
Aboriginal cultural material	An object of Aboriginal origin that has been declared to be so classified under Section 40 of the AHA. This is material that is of: <ul style="list-style-type: none"> <li>• Sacred, ritual or ceremonial importance;</li> <li>• Anthropological, archaeological, ethnographical or other special or national or local interest; or</li> <li>• Outstanding aesthetic value.</li> </ul>
Aboriginal heritage site	A place in operation under section 5 of the AHA. This applies to <ul style="list-style-type: none"> <li>• Any place of importance and significance where persons of Aboriginal descent have, or appear to have, left any object, natural or artificial, used for, or made or adapted for use for any purpose connected with the traditional cultural life of the Aboriginal people, past or present;</li> <li>• Any sacred, ritual or ceremonial site, which is of importance and special significance to persons of Aboriginal descent;</li> <li>• Any place which, in the opinion of the Aboriginal Cultural Material Committee (ACMC), is or was associated with the Aboriginal people and which is of historical, anthropological, archaeological or ethnographic interest and should be preserved because of its importance and significance to the cultural heritage of the state; and/or</li> <li>• Any place where objects to which this Act applies are traditionally stored, or to which, under the provisions of this Act, such objects have been taken or removed.</li> </ul>
Adverse impact	Any Aboriginal heritage site which is excavated, damaged, concealed or in any way altered has suffered an adverse impact.
Blast mat	A mat made of durable material, placed over the area or material being blasted to prevent scattering of blast-generated debris.
Contractors	Roy Hill contractors and subcontractors
Drill and Blast Supervisor	The person responsible for the drill and blast operations.
Fly rock	Material thrown beyond the blast site by the blast.
Vibration	Oscillatory motion on the ground caused by the passage of seismic waves originating from a blast.

Table 2 – Definitions

## 7 References

Document number	Title
100RH-0000-HE-PRO-2001	Aboriginal Heritage Incident Procedure
100RH-0000-HS-PRO-2004	Incident Investigation and Reporting Procedure
100RH-0000-HE-SPC-001	Cultural Heritage Management Plan Specification
100RH-0000-HE-GUI-2003	Aboriginal Heritage Management Specification

Table 3 – References

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## 8 Review

This document will be reviewed annually. Reviews are to examine the appropriateness of this Procedure, taking into consideration corporate, system and compliance requirement changes. The updated Procedure should be sent to:

- Drill and Blast Superintendent
- Drill and Blast Engineer

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