

6D Extraction Activity Area

6D 1 Issues, Objectives and Policies

6D 1.1 Local Area Issue

6D 1.1.1 Environmental Effects of Extraction Activities

Issue

Extraction of greywacke rock in the Belmont area of the Western Hills provides an important mineral supply for industrial and construction purposes. The mineral deposits are in close proximity to the urban area of the City, which helps to reduce the time, energy and financial resources spent on transportation and storage.

Extraction activities have the potential to cause adverse effects on amenity values and the receiving environment, such as dust, noise, traffic and water contamination. It is necessary to provide for extraction activities in a manner that avoids or mitigates adverse effects on amenity values of the surrounding area and the receiving environment.

Objective

To ensure that the adverse effects of extraction activities on the receiving environment and local amenity values are avoided, remedied or mitigated.

Policies

- (a) That adverse effects of extraction activities on the receiving environment are avoided or mitigated.
- (b) That adverse effects generated by extraction activities be managed to maintain and enhance the amenity values of the area.
- (c) That buffer strips be provided to reduce any adverse effects of extraction activities on the nearest residential activity areas.
- (d) That industrial activities allied to extraction activities be accommodated in the Extraction Activity Area provided that they are managed to avoid or mitigate adverse effects on the receiving environment and amenity values of the area.

Explanation and Reasons

(a) Mineral Resources

The greywacke mineral supply is an important resource for the City. The close proximity of mineral resources to the urban areas is also advantageous in terms of transport costs. This close location does, however, have implications for future expansion of extraction activities and the generation of adverse effects on the nearby community and environment.

Greywacke rock is the ultimate source of aggregate for concrete production and road making. A certain amount of natural fracturing of the rock is advantageous for aggregate production as it reduces the energy required to remove the rock and crush it to the required size range. The greywacke deposits in the escarpment near Belmont have been shattered by seismic movement along the Wellington Fault. These deposits provide a valuable supply of aggregate and have been identified as suitable areas for the Extraction Activity Area. There are existing quarries in this area, being Winstones, Firths and Dry Creek Quarry.

(b) Management of Adverse Effects:

The effects of extraction activities on hard rock needs to be managed to avoid or mitigate adverse effects on the amenity value of the area and the receiving environment. These adverse effects include noise, dust, vegetation clearance, soil erosion, water quality, and extraction of topsoil. Quarrying can also impact on sites of geological, scientific or special amenity value.

Quarry management plans can be used to avoid, remedy or mitigate the adverse effects of extraction activities in some circumstances. These plans address a range of environmental issues, including topography, flora, fauna, hydrology, water and soil management, visual impacts, noise, dust, traffic, rehabilitation and monitoring. The management of adverse effects is shared jointly with the Regional Council where discharge permits are required. Extraction activities will be a Restricted Discretionary Activity to ensure that the quarry management plan shows compliance with the standards and terms.

(c) Buffer Strips:

Buffer strips will be provided within the boundaries of the site to maintain indigenous vegetation and provide a separation distance from other activity areas. The buffer strip also enhances the amenity values of the interface with other activity areas.

The Extraction Activity Area is also surrounded by areas of low intensity use, which provides a buffer area between the nearest residential development at Kelson. This buffer situation ensures that the future extraction of mineral resources does not become constrained due to the close proximity of residential housing.

(d) Allied Industrial Activities:

Allied industries which utilise the materials quarried on site as the principal raw material shall be accommodated as Discretionary Activities. This ensures that adverse effects on the amenity values of the area and the receiving environment can be managed. This means that factors such as traffic generation, access, hours of operation, dust and visual impact are managed to maintain and enhance the quality of the environment.

6D 1.2 Site Development Issue

6D 1.2.1 Effects on the Visual Quality of the Area

Issue

Extraction activities can impact on the visual amenity values of the area through vegetation clearance, the extent and appearance of the cut face, and the design and external appearance of the buildings and structures. It is necessary to manage the way in which the site is managed, buildings and structures are constructed, and landscaping is provided to maintain and enhance the amenity values of the area.

Objective

To maintain and enhance the visual amenity values of the area.

Policies

- (a) That adverse effects generated by extraction activities be managed to enhance the visual quality of the area.
- (b) That extraction activities retain the indigenous vegetation on the face of the escarpment, particularly in areas of special amenity, as part of the visual backdrop for the City.
- (c) That having taken into account planned future development, progressive rehabilitation measures be provided.
- (d) That the design and external appearance of all buildings and structures be managed to maintain and enhance the amenity values of the area.

Explanation and Reasons

(a) **Site Maintenance:**

The extraction activities and allied industrial activities shall be managed through the use of a quarry management plan to ensure that the visual amenity of the area is maintained. This will be achieved through attention to the design and external appearance of structures and buildings, protection of areas of special amenity and maintenance of buffer strips around the boundary to retain the indigenous vegetative cover.

(b) **The Escarpment:**

The escarpment in Belmont is part of the green backdrop to the City and it is an area of geological and scientific significance. Adverse effects on the visual quality and amenity values of the area will be managed through compliance with landscaping, screening, noise, vibration and dust controls. The areas of special amenity as shown on Appendix Extraction 2(a) and 2(b) which are visible from other parts of the City will be maintained with their indigenous vegetation cover.

(c) **Site Rehabilitation:**

Progressive rehabilitation of the cut face is necessary to control dust problems and the visual quality of the exposed area of extraction activities. A progressive approach also helps in the final rehabilitation of the site when extraction activities cease. Rehabilitation of the top soil is also part of the process as is the re-establishment of

native vegetation cover. Exotic species may be used initially where they provide a nursery crop for native species.

(d) The Quarry Management Plan:

The Quarry Management Plan will be used to specify rehabilitation procedures, maintenance of indigenous vegetative cover, provision of the buffer strip within the boundary, and compliance with the standards and terms.

6D 2 Rules

6D 2.1 Permitted Activities

- (a) Any extraction activity, including ancillary offices and caretaker living quarters.

6D 2.1.1 Permitted Activities - Conditions

(a) Maximum Height of Buildings and Structures:

24.0m - On any part of the area where the ground level is RL 45m or lower at the time of installation or construction of the structure.

12.0m - On any part of the area where the ground level is greater than RL 45m at the time of installation or construction of the structure.

For the purpose of this Rule, RL = MSL, 1949 Geodetic Datum.

(b) Dust:

All outside areas shall be sealed, surfaced, or managed appropriately so that there is no dust nuisance at or beyond the boundary of the site.

All use, handling and storage of goods, raw materials and waste materials shall be undertaken in such a manner so as to prevent adverse effects from dust so that there is no dust nuisance at or beyond the boundary of the site.

(c) Odour:

All activities shall be carried out in such a manner so as to ensure that there is not an offensive odour at or beyond the site boundary.

(d) Light Spill and Glare:

(i) Artificial light shall not result in added illuminance in excess of 8 lux measured at the window of a dwelling on a neighbouring site.

(ii) All activities shall be undertaken so as to avoid all unreasonable light spill beyond the site boundary.

(iii) All activities, buildings and structures shall avoid glare (light reflection) beyond the site boundary.

(e) Vibration:

(i) Blasting shall be carried out in accordance with the operating practices described in Appendix J, Section J5 of AS 2187.2 - 1993 Explosives - Storage, transport and use, Part 2 Use of explosives.

(ii) Blast noise (airblast) created by the use of explosives when measured at a

notional boundary of 20m from occupied dwellings shall not exceed a peak overall sound pressure of 120 dBC (126 dBL).

- (iii) All blasting shall be restricted to between 10.00am and 4.00pm Monday to Saturday (excluding public holidays) except where blasting is necessary because of safety reasons.
- (iv) Blasting shall be confined to two occasions per day except where necessary for safety reasons.
- (v) Where blasting is irregular and the occupiers of neighbouring sites could be alarmed, they shall be advised of pending blasts, at least one hour before any such blast.
- (vi) Monitoring to obtain records and data representative of the effects of blasting on the Quarry Management Area (see Appendix Extraction 3) shall be carried out. This monitoring shall be carried out at such frequency to ensure there is sufficient data (at least 10 blasts) to ensure continued compliance with clauses (ix) and (x) and shall be maintained on an ongoing basis at a frequency of at least 1 in 20 blasts.
- (vii) Every blast shall be recorded with particular attention to details of:
 - Date and time of the blast;
 - Location of blasts; and
 - Blast size and charge mass per delay.

Where vibration monitoring is carried out in accordance with (vi) blasts shall be recorded with particular attention to details of:

Location of monitoring point(s);

- Distance from blast to monitoring point(s);
- Type and serial nos of monitoring instruments and transducers;
- Peak noise level (airblast); and
- Vibration velocity time history and absolute maximum vibration velocity for each of the three components.

The blast records and monitoring results shall be made available to the Council on request.

- (viii) Vibration from blasting shall be measured at appropriate monitoring points established between the closest dwelling and its nearest boundary in accordance with Appendix J4.2.2 of AS2187.2 - 1993.
- (ix) When blasting, the maximum absolute value of the vector sum of three time synchronized velocity components shall not exceed the guideline values for evaluating the effect of short-term vibration in AS 2187.2 - 1993, Table J1.

Table J1 - Recommended Maximum Peak Particle Velocity	
Type of building or structure	Peak particle velocity (v_p) mm/s
Houses and low-rise residential buildings; commercial buildings not included below.	10
Commercial and industrial buildings or structures of reinforced concrete or steel construction.	25

- (x) Evaluation of the effect of vibration on building occupants shall be also carried out in accordance with NZS/ISO 2631: 1997(E) Mechanical vibration and shock - Evaluation of human exposure to whole body vibration; Part 1: General requirements and Part 2: Continuous and shock-induced vibration in buildings (1 to 80 Hz). The multiplying factor of the base curves to be used in evaluating satisfactory magnitudes will be 60 as defined in Table 2 of Annex A in NZS/ISO 2631:Part 2.

(f) Hours of Operation:

For all activities:

6.00am - 10.00pm Monday to Saturday (excl public holidays)

except for administrative activities, the maintenance of plant and machinery, and the loading and unloading and movement of vehicles all of which may occur at any time.

(g) Design and External Appearance of Buildings and Structures:

No structure, sign, excavation or other work is to be sited or left unfinished or allowed to deteriorate in a manner that will cause it to detract from the amenity values of the surrounding land.

(h) Property Access:

There shall be no direct access from State Highway No.2. Property access shall comply with the provisions of Chapter 14A - Transport.

(i) Fire

The use of land and buildings shall, at all times, be in accord with the principles of fire safety as specified by NZS 923:1971. No structure, ditch, trench, or other impediment to the movement of fire service vehicles or equipment shall be built in such a way as to restrict access for fire fighting purposes to any part of the property.

(j) Storage Requirements:

- (i) All activities shall be provided with an outdoor area for storage of goods, materials and waste products. This area shall be clearly defined and shall be clear of vehicle access, manoeuvring and parking areas.
- (ii) All outdoor storage areas shall be of such dimensions as to adequately provide for the storage requirements of the proposed use.
- (iii) Waste management: All storage and disposal of refuse will be carried out in such a manner so as to avoid causing adverse effects beyond the boundary of the site.

(k) Buffer Strip:

A 25m buffer strip of indigenous vegetation shall be maintained within the site along the boundaries of the Extraction Activity Area, shown in Appendix Extraction 1A and 1B.

(l) Protection of Areas of Special Amenity:

Those areas of visual importance and special amenity value along the escarpment, shown in Appendix Extraction 2A and 2B, shall maintain their indigenous vegetative cover and in the case of the 5.0m strip shown in Appendix Extraction 2B adjacent to State Highway No.58, the bund shall be planted.

(m) Rehabilitation:

The quarry shall be progressively rehabilitated taking into account planned future development.

When extraction activities cease, the site shall be rehabilitate by hydro seeding benches and cut faces, and rehabilitation of top soil and revegetation of the quarry floor. This

shall be with native species except where exotic species may be used initially to provide nurse cover for native plants.

(n) Landslide Hazard and Erosion:

All activities shall be undertaken in a way that the susceptibility of land prone to erosion and landslide hazards is not increased.

6D 2.2 Discretionary Activities

- (a) Any allied industrial activity, which utilises the materials quarried in the Activity Area as the principal raw material.
- (b) Except where stated in the General Rules, any Permitted Activity which fails to comply with any relevant Permitted Activity Conditions or relevant requirements of Chapter 14 - General Rules.

6D 2.2.1 Assessment Matters for Discretionary Activities

- (a) The matters contained in sections 104 and 105, and in Part II of the Act shall apply.

6D 2.3 Non-Complying Activities

- (a) All other activities not listed as a Permitted or Discretionary Activity.

6D 2.4 Other Provisions

- (a) Subdivision - See Chapter 11.
- (b) Financial Contributions - See Chapter 12.
- (c) Utilities - See Chapter 13.
- (d) General Rules - See Chapter 14.

6D 3 Anticipated Environmental Results

- (a) Adequate supplies of greywacke available to meet the demands of the district and region.
- (b) Maintenance and enhancement of the visual quality and amenity values of the area, as part of the green visual backdrop to the City.
- (c) Rehabilitation of the site to accommodate other appropriate activities, after extraction activities cease.
- (d) Prevention of increased susceptibility to erosion and landslip.