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6. Environmental Impact Study, Hobart Quarries Pty Ltd, Giblin Street quarry: Summary, conclusions and recommendations.

D.E. Leaman

R.C. Thomas

The first meeting of the Study Group, held on 19 March 1974, formulated guide lines for the implementation of an environmental impact study on the operations of the Hobart Quarries and by implication the coating plant belonging to the Hobart City Council. An earlier study by Mr Pottinger concluded that the quarry was incompatible with its surroundings but did not recommend any solutions to the problem.

The terms of reference of the Study Group can be summarised as follows:

- (A) Investigate the impact that the operations of the quarry and the coating plant have on its surroundings with special regard to:
 - (1) Effects of blasting
 - (2) Noise
 - (3) Dust
 - (4) Traffic
 - (5) Damage and discomfort arising out of previously mentioned factors.
- (B) Evaluate the complaints against the quarry operation.
- (C) Examine solutions to the complaints.
- (D) Consider the future of the quarry.
- (E) Consider the principle of compensation if the quarry was required to close.
- (F) Consider guide lines for future developments so as to avoid similar conflict.

To assist the Study Group representatives of Hobart Quarries and the Mount Stuart Progress Association attended meetings of the group to present their case for, or against, the quarry operation.

SUMMARY OF OBJECTIONS

The Mount Stuart Progress Association submitted their objections together with the results of a questionnaire which was circulated to the local residents. The objections to the quarry operations are summarised as follows:

- (1) The Hobart City Council was not entitled to trade Knocklofty Reserve land for land owned by Hobart Quarries.
- (2) That at one period Hobart Quarries had quarried Reserve land illegally.
- (3) That Hobart Quarries did not hold mining leases for the entire working area.
- (4) Fencing of the quarry area is inadequate and incomplete.
- (5) Blasting is causing structural damage and discomfort.
- (6) Blasts are not fired at regular hours.
- (7) Fly-rock is falling on to Knocklofty Park Reserve.
- (8) Dust fall out in the area surrounding the quarry is excessive.
- (9) Noise levels, especially those due to traffic, in the Giblin Street area, are unreasonable in intensity and duration.
- (10) Truck traffic in residential streets is excessive and prone to cause accidents.

- (11) The hours of quarry operations often extend beyond 0800-1800 hours and thus privacy and quiet are disturbed.
- (12) The quarry is an aesthetic disaster.
- (13) Property values are diminished by the operation.
- (14) The quarry enlarged its operations after the residential growth in the area.
- (15) Some residents suffer from the smell of bitumen from the Hobart City Council's coating plant.
- (16) The quarry imports limestone for crushing.

EVALUATION OF THE OBJECTIONS

- (1) The council was entitled to trade land provided it was in keeping with its current zoning and planning schedules. The council did serve certain restrictions on the quarry operators but the overall zoning has been changed.
- (2) The quarry in 1967/68 did quarry outside the leased area and the council then rectified the mistake by leasing another 1½ acres of land to the quarry. The transaction was legal, if somewhat myopic and inconsistent with zoning.
- (3) Hobart Quarries Pty Ltd, although holding mining leases No. 614P/M and 615P/M issued on 19 April 1963, does not have a mining lease for the area leased from the council and has therefore illegally quarried a significant portion of the land traded from the council.

The quarry operators have applied for a mining lease on the area leased from the council but the issue of the lease will depend to a large extent on the deliberation of the Impact Study Group.

- (4) Fencing around the main quarry face is adequate but the rest of the fencing is generally poor and signposting quite inadequate.
- (5) The investigation into complaints of the blasting operations at the quarry has covered the last two years and as a result a standard pattern of drilling, charging and firing primary blasts in the main quarry has been designed by the Department of Mines to which the quarry operator adheres. The monitoring of blasts in May and June 1974 only served to confirm that ground vibrations in the area are well below the most stringent damage standard. No evidence has been advanced to support claims of building damage and the damage claimed to have been done by blasting can be traced to settlement, shrinkage and, in some cases, poor construction methods or use of material. However some unpleasant conditions may arise from secondary blasting in which sounds or air motions may affect the human senses producing the illusion of movement in the surroundings or which can rattle doors, windows, china ware etc., and so cause discomfort for a very short period of time. A number of residents agreed that the blasting operations during the last six months have not been so noticeable.
- (6) Blasts in the main quarry are fired at a regular time, but there have been instances when the blasting in the southern quarry has been carried out at different times. It must be pointed out however, that there may be occasions where the mining regulations demand that charging operations are temporarily suspended and that the same regulations demand that the charges be fired which may result in a blasting time later than the regular time.
- (7) Fly-rock from blasting operations is most certainly reaching the reserve on occasions. The fly-rock derives from secondary blasting operations.

- (8) The dust fall-out in the Mount Stuart-Lenah Valley area and adjacent to the quarry is not significantly higher than in other suburbs nearby. In any case no dust level recorded is excessive by international standards.
- (9) Noise from crushing, grinding and transportation within the quarry is not of any great significance. However, traffic noise in Giblin Street is significant especially where the gradient steepens near the quarry. Dr Doe's report will enlarge on this aspect of the operation.
- (10) Truck traffic is only significant in Giblin Street above Augusta Road. Here, due to concentration and poor road conditions, it assumes considerable nuisance value. Truck traffic levels in other non-arterial roads are minimal and no evidence can be advanced to support the allegation that trucks are an accident hazard.
- (11) The stated quarry hours of 0715-1700 are rarely exceeded, although trucks may queue in Giblin Street before the quarry opens in the morning. These hours are not excessive when compared with quarrying operations in other controlled areas (e.g. Victoria).
- (12) The aesthetic quality of the quarry is debatable, and the same could be said of residential districts in Hobart or anywhere else. There is no doubt that the quarry is visible from the northern suburbs and from Mount Wellington, but in time the quarry faces will merge into, and become part of, the background, especially when the rock is as easily weathered and coloured as dolerite. This process can be speeded up with a judicious rehabilitation programme, as with a new housing development gradually merging into its background as householders develop their gardens. The ugliness of the quarry is related to buildings, spoil heaps and bare patches which, in time, can be removed, reshaped or restored. Any aesthetic argument is thus purely subjective as the site can only be seen from certain areas.
- (13) Property values are difficult to assess, but have probably been lowered slightly by the presence of the quarry. On the other hand those who have bought must have paid less and therefore should expect to sell for less while the quarry remains.
- (14) This subject is rather fatuous since the development of the quarry has gone hand in hand with the development of the houses. Few people can have bought or built in the area without knowing of the existence of the quarry.
- (15) No doubt the smell of bitumen has sometimes been noticed by some residents, but it is not possible to gauge the degree of discomfort suffered by the residents from this cause.
- (16) Limestone has been imported from the Ida Bay quarry for crushing at Giblin Street and then delivered to the Electrolytic Zinc Company at Risdon. However, Mr Kennedy has stated that this will probably cease in the new year (1975), and this was confirmed later from sources at the Electrolytic Zinc Company, Risdon.

From the foregoing it may be stated that some of the objections are largely unfounded and unsupported. However, incidental secondary problems do provide some cause for complaint, e.g. truck noise and frequency in Giblin Street and air vibrations from secondary blasting. As stated in the Pottinger report, these matters confirm that while the quarry is relatively innocuous its attendant features are incompatible to some degree with a residential environment. The quarry management does not deny this, but argues that the fault lies with the authorities responsible for planning and development.

SUMMARY OF THE QUARRY OPERATIONS AND ATTITUDES OF THE MANAGEMENT

At the current rate of extraction the maximum life of the quarry is approximately 20 years although it is more probable that its economic life is 10-15 years. However quarry outputs are generally variable and our estimates over the longer term may be inaccurate.

Mining leases 614P/M and 615P/M expire in April 1984.

If mining lease application 875P/M is not granted the operation of the quarry will be severely affected in the near future. An added embarrassment is the presence of H.E.C. power lines which, if not re-routed, could result in the quarry reserves of good stone being written down to uneconomic levels in 5-7 years time. At present the quarry management believes that the lease will be granted and that the power lines can be moved.

The quarry, whilst profitable, is labour intensive because of the secondary operations involved. However because of the central position of the quarry the cost of cartage is not as high as that from Hobart Quarries Bridgewater operation, although the cost of production at Bridgewater is much less than at Giblin Street.

The material quarried is dolerite which is a high-grade road and aggregate material, whereas the Bridgewater basalt quarry produces good aggregate but poor road material. The management has emphasised that the production of aggregate is to be concentrated at Bridgewater thus taking some of the pressure off the Giblin Street operation. This contraction of operations at Giblin Street has already occurred in 1973, although there will be another substantial upward cyclic trend next year if the quarry obtains a contract to supply the Marine Board with fill material.

When the quarry opened in 1948, the area was classed as industrial and today it is considered as residential. It is to be noted that the quarry opened as a result of other quarries being required to close (e.g. Battery Point quarry).

The Hobart City Council hot-mix plant has a life of 5 years and is supplied with high quality crushed dolerite from the quarry.

The quarry has complied with every request of the Department of Mines to minimise the impact of the quarry on its surrounds. This includes adopting blasting practices laid down by Department of Mines officials, combatting the dust nuisance by the installation of water sprays and tarring internal quarry roads, planting grass and flowering shrubs around the approach areas, planting a tree screen at the workshops and a new fence along the top boundary of the main quarry.

Some problems do not have a practical solution at the moment (e.g. the problem of secondary blasting). Primary blasting will always leave a certain number of big rocks and this is related to the nature of the rock; at present these rocks have to be drilled and blasted. This is expensive and is responsible at times for the noise, air vibration and fly-rock, although charging rates have been reduced to minimise these effects. If the largest crusher available was bought by the quarry there would still be some large rocks which would have to be drilled and blasted. The expense of installing such a crusher and allied equipment (e.g. larger lorries and loaders) would be in the region of \$1 million, and this amount, in the present situation, is not justified. Experiments in drop-balling were not effective and a further experiment using a hydraulic feather and wedge technique is to be tried in the future.

It is not practical at present to make a road aggregate from the Bridgewater stone, so that the existing contracts for road materials have to be met from the Giblin Street quarry.

Although at present pressure is placed by the quarry operators on the cartage contractors to ensure that driving and maintenance standards of the trucks used are high enough to minimise the impact on the residents of Giblin Street, in future all trucks will have to comply with the standards laid down by the Department of the Environment.

The limestone crushing operation at the quarry will probably end at the end of 1974.

If the company was forced to move in the near future then it would expect compensation. The burden of compensation and higher costs of materials from other sources would have to be borne by the community at large and not just by the residents in the area surrounding the quarry; in fact they may gain by a slight increase in housing values in the area.

Compensation

The question of compensation only arises if the quarry is required to be closed before the end of its economic life, which would probably be about 1984 (when the mining leases expire) or, in the most fortuitous circumstances, perhaps as late as 1990. The compensation figures submitted by the quarry management to Mr Pottinger in 1972 are debatable, but obviously would have to be ascertained by the appropriate qualified persons and not by members of the Study Group. We must ask ourselves if the principle of compensation is just. Should the quarry be forced to close before expiry of its leases, provided that no other factor affects the reserves or operation of the quarry (e.g. refusal of the H.E.C. to shift the power lines or the refusal of the Department of the Environment to issue licences), then the matter of compensation must be faced. The amount of any such compensation cannot be decided by the Study Group.

FUTURE OPTIONS

Continued operation for the life of the quarry

As it has been admitted that the quarrying is incompatible with residential suburbia one has to consider how the effects of the operation can be minimised.

The quarry holds two mining leases and requires a third to cover the area leased from the Hobart City Council. In issuing the third lease it is possible to insert a schedule of conditions controlling the operation of the quarry area covered by the mining lease. With the existing mining leases it would be impossible to insert a further schedule of conditions unless the company applied to consolidate the leases. However from 1 January 1975 the quarry will be required to obtain annually a licence from the Department of the Environment to operate schedule premises and the department will have the power to grant it, subject to conditions it may wish to apply governing the environment. This would include noise, dust, placing of waste dumps etc.

Buffer zone

Residents who object to the quarry operation could be bought out, or a buffer zone acquired by wholesale purchase of houses. This is not regarded as a practical solution.

Immediate closure

Immediate closure of the quarry would resolve the admitted conflict in the area. Such a decision would require compensation and this compensation would be at the highest possible rate. Such a closure would induce a short fall of aggregate and road materials for a considerable period before Hobart Quarries or some other operator reorganised to take up the slack. The cost to the community of such an action is beyond simple evaluation and this is not a reasonable or fair solution especially when the pressure on the quarry is not due to fundamental faults by the operator.

Closure in five years' time

A planned closure in five years time would not cause the same dislocation to the community and the rate of compensation would be much reduced. It would allow:

- (1) Hobart Quarries Pty Ltd sufficient time to purchase and develop an alternative site or expand production at the Bridgewater site. Development time would be expected to be 4-5 years, and serious thought would have to be given to relocation immediately.
- (2) The hot-mix plant is due for either replacement of machinery or termination about this time.
- (3) Economic operation of the quarry and utilisation of the better grade of dolerite reserves without major redevelopments as would be needed when the southern or western part of the property is worked.
- (4) Reduction of the conflict in a finite and shortest reasonable time.

However maximum utilisation of the reserves of the quarry would not occur and there would be, at the end of five years, the cost factor to the community of moving to some other distant site to consider.

Closure in 1984 or some other time

Closure could be required in 1984 by the non-renewal of the mining lease, or at any other time if the company could not comply with conditions under which a licence to operate schedule premises is issued. In any event the compensation would be minimal and the quarry could be near the end of its economic life.

It is our opinion that the latter course is more desirable as it minimises the burden to be carried by the community at large; it utilises fully assets of the State (i.e. the reserves of dolerite) and there is the power available to the Department of the Environment and Department of Mines to ensure that the impact of quarry operations on the residential areas is kept within reasonable limits during the working life of the quarry. In this case the granting of the mining lease on the disputed area to run concurrent with the other leases is necessary, subject to certain conditions.

CONDITIONS FOR CONTINUED WORKING

In addition to the requirements under the Environment Protection Act, 1973, the Mining Act, 1929 and the Mines Inspection Act, 1968 and the regulations made under these Acts the following conditions are recommended to be applied to quarry operation:

- (1) No mining within 5 m of any boundary of the quarry, and this boundary shall be clearly marked at all times.
- (2) Finished quarry faces shall be properly barred down, shall have a batter of not more than 85°, maximum height of 18.5 m and final berms shall not be less than 3 m in width unless otherwise directed by an Inspector of Mines. The rock surface of each berm shall be cracked to a depth of one metre and this can be done by sub-grade drilling of holes to a minimum depth of 1.8 m below the final berm level.
- (3) Blasting times in the quarry shall be between 1100 and 1400 hours provided that an Inspector of Mines may give permission to blast outside this period in an emergency. No blasting shall take place on Saturday, Sunday or public holidays.
An Inspector of Mines shall approve of the manner of blasting (i.e. pattern of drill holes, firing sequences and maximum amount of explosives to be fired by any electric delay). Detonating fuse shall not be used in blasting operations.
- (4) Operating hours of the quarry shall be between 0730-1800 hours on each week day and from 0800-1200 hours on a Saturday. The quarry shall not operate on a Sunday or public holidays although repair and maintenance work may be carried out on these days.
- (5) All derelict plant, vehicles, machinery, equipment and buildings shall be disposed of to the satisfaction of an Inspector of Mines.
- (6) A wheel washing bay shall be installed and all trucks leaving the quarry shall have all mud removed from their wheels and tyres.
- (7) The boundaries of the quarry shall be fenced. The top strand of the fence shall be 1.8 m above ground level, the strands shall be of barbed wire and shall be not more than 20 cm apart and the bottom strand shall not be more than 20 cm above ground level. The posts shall be of angle iron of at least 5 cm x 5 cm and shall be sunk at least 0.75 m into the ground, and shall be placed at intervals not exceeding 12 m.
- (8) All topsoil and subsoil that is retained within the lease area shall be stacked to the satisfaction of the Director of Mines acting in consultation with the Director of Environmental Control. Where the stacks are to remain longer than one year they shall be grassed in a manner approved by an Inspector of Mines.
- (9) All other waste material from the quarry that is retained within the lease area shall be stacked to the satisfaction of the Director of Mines acting in consultation with the Director of Environmental Control. Where the stacks are to remain longer than one year they shall be screened by a programme of tree planting or covered and grassed to the satisfaction of the Director of Mines acting in consultation with the Director of Environmental Control.
- (10) No trees or vegetation screening the quarry operations shall be removed without the permission of the Director of Mines except when pre-stripping is necessary, and then only enough for one year's excavating shall be removed. The Director of Mines, acting in consultation with the Director of Environmental Control, may at any time direct that a programme of tree planting be implemented to screen the quarry operations.
- (11) The rehabilitation of the quarry shall be carried out to the satisfaction of the Director of Mines acting in consultation with the Director of Environmental Control. Rehabilitation

- does not necessarily mean filling of the site but includes suitable bench preparation and tree planting.
- (12) A bond of \$5000 placed on the mining lease if issued.

PRINCIPLES AND GUIDELINES FOR THE FUTURE

A primary question is: should any operation be closed as a result of a conflict of interest for which it is not responsible? Precedence is an important consideration.

In principle we believe the answer is 'No'. In reality the answer is 'Yes', provided the responsible authorities guarantee a future alternative, provide compensation and are prepared to accept the political responsibility for their actions. This situation should apply only to concerns and conflicts extant at present and must not be allowed to arise in respect of future industry.

Some guidelines and comments and suggested to ensure this result.

- (1) Areas planned and zoned for extractive industries must be protected by a buffer zone at least one kilometre wide. The buffer zone should not be alienated until the mineral deposit has been mined to its full economic limit.
- (2) Planning and political authorities must recognise the need for such industries and guarantee a continued existence of an industry provided it is working within the limits of mining, planning and environmental legislation.
- (3) A zone plan, once instituted and with an operation commenced, must not be altered within the life of the resource.

In the case of Hobart Quarries the Hobart City Council has not been consistent and has thereby largely generated the conflict in the Mount Stuart region. This shows the weakness of fragmented planning systems, especially those inaugurated at the lower levels of government, as they are too vulnerable to parochial issues and pressures.

- (4) Future complaints by members of the public should be supported with some fact or independent expert opinion.

In this case the Mount Stuart Progress Association's case was largely unfounded and emotional and the grounds for raising the matter inappropriate. The following examples suggest how the Mount Stuart Progress Association could have proceeded.

- (a) Truck traffic claims: trucks in side streets could have been counted by residents to verify the claims made.
- (b) Damage claims: independent building evaluations could have confirmed whether damage was due to blasting or settlement, poor building practice and design etc.
- (c) Dust figures from the appropriate authority could have been collated.
- (d) Accident statistics involving trucks in Giblin Street, Doyle Avenue and Augusta Road could have been obtained from the police or transport authorities.

CONCLUSION

At this stage of conflict and incompatibility, the solution recommended must be one of the two alternatives (i.e. either the residents leave or the quarry closes). In view of the relatively short life of the quarry and the entrenchment of the residents, the quarry operation must be terminated. In fairness to the quarry operators, who are not primarily at fault for the

conflict, they should be compensated if they are required to close prematurely. If this is not acceptable politically (the authorities and politicians must accept that the community at large will be shouldering the burden of compensation and higher costs), then the quarry should be allowed to live out its economic life subject to reasonable safeguards which may be placed on its operation.

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In principle we believe the answer is 'No'. In reality the answer is 'Yes'. However the responsible authorities must ensure a future alternative, providing compensation and the possibility to accept the political responsibility for their actions. This situation should apply only to concerns and complaints of a permanent and must not be allowed to arise in respect of future incidents.

Some guidelines and comments are suggested to ensure this result.

- (i) Areas planned and used for extractive industries must be protected by a buffer zone at least one kilometre wide. The buffer zone should not be affected until the mineral deposit has been mined to its full economic limit.
- (ii) Planning and political authorities must recognise the need for such buffer zones and ensure a permanent existence of an industry provided in its planning within the limits of zoning, planning and environmental legislation.
- (iii) A new plan, once initiated, must be an operation commenced, and not be allowed to lapse at the end of the term.
- In the case of a quarry, the quarry must be closed if it has not been completed and the quarry must be closed if it is in the quarry's interest. This shows the weakness of long-term planning. However, those transferred at the local level of government, as they are too vulnerable to political issues and pressures.
- (4) Public complaints by members of the public should be supported with some form of independent expert opinion.
- In this case the North Bristol Business Association's case was largely unheeded and the grounds for raising the matter investigated. The following examples suggest how the North Bristol Business Association could have proceeded.
- (a) Traffic traffic claims: claims in this instance could have been countered by residents to verify the claims made.
- (b) Business claims: independent building evaluations could have been obtained. Business claims were due to dusting or settling, poor building practices and design etc.
- (c) Dust claims: the appropriate authority could have been consulted.
- (d) Business claims involving trucks in Eldon Street: local business and residents could have been obtained from the police or transport authorities.

CONCLUSION

At this stage of conflict and responsibility, the solution recommended was one of the two alternatives (i.e. either the residents leave or the quarry closes). In view of the relatively short life of the quarry and the importance of the residents, the quarry operation must be terminated. In future, in the quarry operators, who are not primarily at fault for the