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Sir

5 November 1985

Guidelines for the Provision of Silica Sand in England and Wales

We are directed by the Secretary of State for the Environment and the Secretary of State for Wales to bring to your attention the Annex to this Circular which contains Guidelines for the Provision of Silica Sand in England and Wales.

These Guidelines stem from the work of the Silica Sand Technical Working Group established under the auspices of the Association of County Councils. The Working Group, representing the mineral planning authorities, the producers and users of silica sand and others, met under the chairmanship of the County Planning Officer of Surrey County Council. This valuable work would not have been possible without the willing cooperation of all those involved. The Secretaries of State attach great importance to a continuation of this co-operative spirit.

These Guidelines, together with the results of monitoring by the Technical Working Group in accordance with Section 6 of the Annex, form an important basis for the long term planning for silica sand. They have been endorsed by the Association of County Councils, by the Silica and Moulding Sands Association and by the Secretaries of State, who will take them into account in exercising their statutory responsibilities. Mineral planning authorities for areas containing deposits of silica sand are now asked to take them into account in preparing or revising their development plans and other policies for mineral working and when reaching decisions on planning applications relating to silica sand.

The Annex to this Circular provides advice on how mineral planning authorities should carry out functions for which they have a statutory responsibility. Implementation should not create any additional requirements for local authority money or manpower.

We are, Sir, your obedient Servants,

R C MABEY, *Assistant Chief Planner*

J C LEWIS, *Assistant Secretary*

The Chief Executive
County Councils
District Councils
} in England and Wales

London Borough Councils

The Town Clerk, City of London

The Director-General, Greater London Council

[DOE M/429/6]
[WO P/87/11/02]

ANNEX

GUIDELINES FOR THE PROVISION OF SILICA SAND IN ENGLAND AND WALES

1 Introduction

1.1 Silica sand is an essential raw material for the foundry, glass and certain other industries (for example, glass fibre and water filtration). High quality silica sands are relatively scarce in Great Britain, with extraction concentrated in a few areas. Pressures for extraction have sometimes led to conflicts with agricultural, amenity and other interests. There has also been concern that reserves of silica sand with planning permission for extraction might be inadequate to meet industry's needs and that there is insufficient protection of unworked silica sand deposits against sterilisation by other development.

1.2 The industries and County Councils concerned agreed that in view of the national importance of silica sand and the various planning problems encountered, a study should be undertaken. This was carried out by a joint working party, established under the auspices of the Association of County Councils, which included representatives of the silica sand producer and consumer industries, the Planning Departments of the major producing Counties and Government Departments. A full list of members is given in Appendix 1.

1.3 The aim of the study was to produce national policy guidelines for silica sand extraction, as a framework for structure and local plans and as a background against which particular proposals may be considered. The work was undertaken in two stages:

1 the fact-finding report[1] published in November 1982;

2 the present policy guidelines document.

The summary of the Stage 1 (Fact-Finding) Report, giving information on production and reserves of silica sand in 1979 and forecasts of demand, is reproduced in Appendix 2.

1.4 The agreed terms of reference for the second stage of the study were:

"1 To provide a clear framework up to and beyond the mid 1990s within which mineral planning authorities[2] can develop policies for silica sand in structure and local plans and within which the merits of individual planning applications can be considered. The framework should aim to help maintain an adequate supply of material to industry at the best balance of social, economic and environmental cost.

2 To examine means by which deposits of silica sand may be protected from sterilisation."

1.5 Wherever possible, information in the study relates to Great Britain (ie does not include Northern Ireland). Silica sand operations in Scotland have been incorporated throughout the study. Although different planning arrangements operate there, the Group considers the report's recommendations to be equally applicable in Scotland.

[1]Silica Sand: Stage 1 (Fact-Finding) Report: Silica Sand Technical Working Group. Available from County Planning Department (SH), Surrey County Council, County Hall, Penrhyn Road, Kingston upon Thames, Surrey KT1 2DT, price £2.50 including post and packing.

[2]The term 'mineral planning authority' refers to County Councils in England and Wales, the Lake District and Peak District National Park joint planning boards, and in Scotland the Islands Councils, the unitary Regional Councils and the District Councils in other regions. On abolition of the GLC and the MCC's (1 April 1986) the London Borough Councils and the Metropolitan District Councils will also become mineral planning authorities.

2 The Planning Context

Silica sand and the planning system

2.1 The planning system provides a way of examining and reconciling the conflicting claims on land of mineral working, agriculture, amenity, building and other forms of development. The system also affords a means of preventing unnecessary sterilisation of mineral resources. Planning decisions on minerals issues have to balance the need for the mineral with social, environmental, economic, agricultural and other relevant considerations. In doing so special attention must be paid to the need to ensure acceptable working methods and the suitable restoration of sites. Land use planning operates within the broader context of other national policies. Some of the most important for silica sand are set out below. The Memorandum on the Control of Mineral Working[1] now being revised will provide more detailed advice on these and other matters for planning authorities and the silica sand industry.

National importance of silica sand

2.2 It has been the policy of successive governments to encourage the development of indigenous mineral resources, so reducing dependence on overseas sources of supply, expanding the national output generally, creating employment both directly and indirectly elsewhere in the economy, saving imports and promoting exports. The Department of Trade and Industry's policy on the mineral industries which it sponsors (including silica sand) and the national interest in their development is set out in Circular 1/78[2]. In addition to stressing the importance of a continuing supply of minerals to meet industry's needs, the Circular highlights the need for the fullest possible information concerning resources.

Special features of silica sand

2.3 When dealing with silica sand as opposed to construction sand it is of fundamental importance that the differences are recognised, for they give rise to basically different planning problems. Output of silica sand in 1983 was just over four million tonnes[3], most of which was from less than 20 production units. In contrast to construction sand, quarries producing silica sand have a more restricted choice of location for geological and economic reasons. In addition, the plant required to process and treat silica sands to the necessary specifications is more complex and costly. In practice, these factors have led to the establishment of a limited number of production units, most of which have been in existence for many years and which will often have a long term future.

Agricultural considerations

2.4 Some silica sand deposits lie under high quality agricultural land and their extraction may lead to the temporary (or sometimes permanent) loss of such land. Government Policy[4] remains that it will not allow more than the essential minimum of agricultural land to be diverted to development, nor will it allow land of a higher agricultural quality to be taken where land of a lower quality could reasonably be used instead.

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[1]Memorandum on the Control of Mineral Working (the "Green Book"), HMSO 1960.
[2]Department of Industry Circular 1/78: Report of the Committee on Planning Control over Mineral Working: 4 August 1978.
[3]See paragraph 6.4. Production in 1983 was less than forecast in the Stage 1 report.
[4]DOE Circular 22/80 (Welsh Office 40/80) reiterate previous advice in DOE Circular 75/76 (Welsh Office 110/76).

2.5 The occurrence of proven silica sand resources is limited and it may not be possible to identify alternative sources under land of lower agricultural quality. In addition, difficulties experienced with the depth and phasing of extraction often associated with silica sand quarries may hinder progressive restoration (see paragraph 5.4). Where working occurs below the water table[1] there may be a permanent loss of land, although every effort should be made to avoid this.

2.6 In determining its attitude to proposals for extraction from agricultural land, the Ministry of Agriculture, Fisheries and Food (in Wales the Welsh Office Agriculture Department, WOAD) will be concerned to ensure that:

(*a*) all reasonable steps have been taken to avoid areas of high quality land;

(*b*) the proposals for restoration and after-care are adequate, or if restoration to agriculture is not practicable, that the reasons for this have been made clear.

This approach highlights the need for comprehensive, properly prepared planning applications with supporting material, including the case for there being an overriding need for the area to be worked. It is important that proposals are discussed with local Ministry officers at an early stage.

Environmental considerations

2.7 One of the intentions of land use planning is to guide mineral working to areas where it has least impact on areas of landscape and ecological importance and amenities in general, while at the same time taking account of the economic arguments for extraction. The restricted distribution of silica sand deposits limits the choice of location and conflicts often cannot be avoided, leading to difficult planning decisions. This is one reason why it is of crucial importance that the highest standards of working and restoration practice are achieved in order to lessen the impact of extraction.

2.8 National Parks, Areas of Outstanding Natural Beauty and other areas given protection for environmental conservation (such as Sites of Special Scientific Interest, National Nature Reserves, etc) often owe their designation in part to their underlying geology. Further workable deposits of silica sand may be found within these areas. Proposals for major extensions or new working in such areas must continue to be subject to the most rigorous examination.[2] Where development proposals affect notified SSSIs the mineral planning authorities must consult the Nature Conservancy Council[3]; elsewhere, they should consider nature conservation issues and may consider it desirable to consult the NCC.

3 Adequacy of Supply

Need for releases

3.1 In addition to the case put forward by the individual operator and the merits of a proposal, the mineral planning authority should have regard to the national requirement for the particular type of silica sand and the security of supply. Any assessment of national need will clearly be a matter of degree. Given the scale of investment by the consumer industries, a national level of permitted reserves for specific grades of silica sand of less than 10 years is undesirable, whilst a level sufficient for over 25 years

[1]Reference should be made to 'Mineral Workings—Legal Aspects relating to Restoration of Sites with a High Water Table', (a joint DOE/Welsh Office Circular, to be published Autumn 1985).

[2]DOE Circular 4/76 and Welsh Office Circular 7/76 'Report of National Park Policy Reviews Committee'.

[3]General Development Order 1977 section 15(g).

would generally be seen as more than adequate. Between these two levels national need arguments become progressively stronger or weaker. A lack of proven national need is not necessarily in itself a reason for refusing an otherwise acceptable application, although it will be an important factor to be taken into account if there are other planning objections to the proposal. There may also be variations in the need for particular types of silica sand, primarily as a result of technical changes or the effects of recycling. A rational assessment of need on this basis requires up-to-date and useful information on production and reserves (see paragraph 6.3). Mineral planning policies will in any case need to be sufficiently flexible to cover future technical and economic changes.

3.2 However, national figures of permitted reserves can be misleading, as the reserves may not be distributed equitably between producers or sites. When considering proposals for the extraction of silica sand, mineral planning authorities should take into account the need to maintain sufficient national productive capacity to meet demand. Authorities should also have regard to the location of permitted reserves and the possible technical and economic advantages for local releases despite the existence of reserves elsewhere.

Capital investment and security of supply

3.3 The Stage 1 report (Chapter 3 and elsewhere) illustrated the central importance of silica sands to the British manufacturing industry. Major investments in the glass and foundry industries depend on a continuing supply of suitable grades of silica sand, nearly all of which is produced in Great Britain. The 1983 cost of establishing a new float glass plant, for example, that would produce 250,000 tonnes of glass and use 150,000 tonnes of sand per year, would be around £75 million. There is therefore a clear need for mineral planning authorities and the producer industry to make provision for long term continuity of supply.

3.4 Some types of sand, notably colourless glass sand, may require chemical treatment whilst certain foundry sands undergo a special resin coating process. It follows that heavy capital investment will be involved, both at the outset of a new operation and from time to time during the life of the working, by way of replacement or uprating of plant. The cost of processing plant will depend on its complexity, but in 1983 was in the order of £3–5 million. These are points which need to be taken into account when considering both the size and life of any planning permission for silica sand extraction.

Large or small planning permissions?

3.5 For an individual site, permitting a major long-term operation, rather than granting a sequence of small permissions covering just a few years each, will provide the security necessary for investment and long-term corporate planning (including the restoration and after-use of the site). The consumer and producer industries both consider that requests for the granting of permission sufficient for 20 years' working at a site should be regarded as reasonable and in some cases a greater period may be justified. At all times mineral planning authorities and operators should co-operate to ensure that wherever possible recognised silica sand resources are not sterilised (Chapter 4).

3.6 It is not normally desirable on planning grounds to grant permissions for long-term development of this nature as changes in circumstances, unforeseen at the time of permission, may render the continued working of the site inappropriate or undesirable. In the case of silica sand such changes might include a major fall or total loss in demand. Therefore, whilst recognising that there are advantages in granting long-term permissions, planning authorities will be cautious before doing so. In practice, the consideration of a large area at the outset of discussions between an operator and the mineral planning authority will assist in achieving an acceptable application area and satisfactory schemes for working and progressive restoration.

Level of permitted reserves

3.7 The system used[1] to ensure a continuing flow of aggregate materials to industry cannot readily be applied to silica sand because of the differences from construction sand (described in paragraph 2.3) and the wide range of grades produced (see Stage 1 report). With such a small number of quarries producing each type of silica sand product, reserve levels are bound to fluctuate widely, depending on the timing and size of individual planning applications. Three quarters of the silica sand produced in Great Britain comes from only a dozen or so quarries. Also, it will usually be necessary to consider the supply and reserves situation for a particular type of silica sand product (such as sand suitable for clear glass manufacture), rather than silica sand generally. In these circumstances, policies aimed at maintaining a level or range of permitted reserves within a particular area or county will probably in practice be the exception rather than the rule. Unless such policies are applied with flexibility and understanding, they may act arbitrarily against an applicant or fail to take account of the need for different types of silica sand. Operators would have to carry out sufficiently detailed survey work to be able to submit adequate reserve details with their applications.

4 Safeguarding Resources

Protection of resources from sterilisation

4.1 There will be a continuing demand for silica sand well beyond the timescale of current planning policies. Eventually, therefore, attention will be focused on deposits which are currently not considered suitable or available for exploitation. As silica sands are a limited resource and can occur in areas with significant development pressures, the planning system has an important role to play in safeguarding deposits from unnecessary sterilization by surface development. Mineral planning authorities are therefore urged to develop suitable arrangements to bring this about.

4.2 The mechanism by which mineral resources can be safeguarded is provided by Section 86(2) of the Local Government, Planning and Land Act, 1980[2]. This section requires a District Council to consult the County

[1]DoE Circular 21/82 'Guidelines for Aggregates Provision in England and Wales': 24 August 1982 (Welsh Office 30/82) sets out statements on the likely supply patterns (i.e. production, imports and exports of aggregates) in each region for the period 1981-91. Figures quoted in the guidelines are indicative, rather than targets, and in the form of ranges to allow for uncertainty in predicting levels of future demand.

[2]There is no similar legislation in Scotland.

Council before determining any application for planning permission for the carrying out:—

> "of any development of land in an area which the county planning authority have notified to the district planning authority, in writing, as an area in which development is likely to affect or be affected by the winning and working of minerals."

This is only one of the many sorts of application on which consultation is required under this section.

4.3 The role of the mineral planning authority in the "safeguarding" process is as a statutory consultee, and under normal circumstances the final decision rests with the District Council, which must balance the "safeguarding" arguments with often conflicting pressures. For the procedure to be effective, therefore, sufficient information must be made available to mineral planning authorities to allow an adequate case for protection to be made in those instances where conflicts arise. In this connection, planning authorities will wish where possible to be informed on the following matters:

(*a*) The general extent of potentially viable deposits, as interpreted from geological maps, where there should be a presumption against other large scale new development.

(*b*) The precise location and quality of important proven deposits, where safeguarding policies may be more specific.

(*c*) Where known, the likely timescale of any commercial interest in exploiting the mineral.

However, the identification of potentially viable deposits, as described in (*a*), is difficult, since the location of future sources of silica sand will depend on a range of economic as well as geological criteria and may be in counties where there has been no history of commercial extraction. The assistance of the British Geological Survey (formerly the Institute of Geological Sciences) and the producing industry may need to be sought to provide information at a broad level. More specific information in local areas, based on borehole surveys, may be available from the industry, who should also indicate the likely timescale of exploitation.

4.4 The arrangements for consultation between District and County Councils are currently the subject of discussion. Pending the outcome of these discussions County Councils are advised;

(*a*) to prepare, in consultation with the industry, specific "safeguarding" policies for silica sand to accompany consultation area maps;

(*b*) to agree with District Councils which classes of development proposals should be notified to them, so as to avoid unnecessary consultation procedures.

Inappropriate uses of high quality sand

4.5 In addition to safeguarding resources by avoiding sterilisation, it is in the national interest that silica sand should not be "wasted" and should be re-used whenever possible. High grade deposits of silica sand should be reserved for uses requiring such sand. The Working Group is not aware of any evidence of high grade silica sand being used for low grade uses (such as constructional fill). In theory at least the market should dictate against any wasteful use of silica sand and at present there seems no cause for concern.

However, were circumstances to change it could become a matter of importance. The Working Group therefore suggests that any large scale use of silica sand for low grade purposes should be monitored in future (see paragraph 6.3).

Recycling

4.6 The Stage 1 report demonstrated that significant savings in silica sand, as well as energy and other raw materials, would result from increased recycling. In recent years bottle banks have become increasingly popular and the rate of glass recycling is rising. This should be monitored in future, together with the level of sand reclamation (re-use) in foundries (see paragraph 6.4). However, studies for the Stage 1 report concluded that apart from glass recycling there was little scope for additional recycling of other silica sand products (paragraphs 4.44–4.55, Stage 1 report).

5 Environmental Issues

The principal issues

5.1 Both the industry and the mineral planning authority require a full understanding of the environmental issues raised by silica sand extraction and the means of dealing with them whilst maintaining an adequate supply of material through the granting of planning permissions. The following paragraphs deal briefly with four aspects of the problem, namely extraction, restoration, processing and transport. These are issues which in some instances may be of central importance because of the environmental sensitivity of areas where working may have to take place.

Extraction

5.2 With the exception of the mine at Lochaline, silica sand is extracted from open quarries. Environmental issues raised by this type of extraction may include:—

(*a*) Noise from earthmoving plant, transport, blasting, pumping, etc.

(*b*) Visual impact of working and worked out areas, stockpiles, overburden mounds, etc.

(*c*) Blown sand and dust;

(*d*) Loss of agricultural land, woodland, wildlife habitats, open space and footpaths.

These issues will need to be considered when preparing or determining planning applications for silica sand extraction. It should be borne in mind that in some cases extraction may offer opportunities to create new habitats for wildlife or bring other benefits.

5.3 There should be a presumption against any new workings or extensions to quarries which would give rise to unreasonable disturbance to people living in the area. There should also be a presumption against the construction of new dwellings near areas to be worked in the future.

Restoration

5.4 During extraction, different grades of sand may be worked from separate parts or horizons of a single quarry. Varying rates of extraction, depending on the demand for particular grades of sand or volume of each deposit, may hinder or even prevent progressive restoration and require the preparation of more complex working schemes than are usual for construction sand quarries. However, the aim should still be to secure progressive restoration of the site, and care should be taken to conserve all

soil and soil-making materials suitable for latter restoration. Topsoil and subsoil should be stripped and stacked separately, all operations carried out in suitable conditions.

5.5 Other restoration problems may be brought about by the depth of the deposit or the lack of suitable filling material, while the need for long-term tailings disposal areas may also adversely affect restoration programmes. A further issue relates to old planning permissions with conditions which do not adequately specify the timing and standard of restoration required (see paragraph 5.10).

Processing

5.6 The processes necessary to enable silica sands to meet consumers' specifications are often continuous and processing plant may therefore need to operate on a 24-hour basis. Where plant is established near to residential areas, problems may arise, particularly with noise and lighting from night-time operation. Control over dust arising from processing or handling silica sand is exercised by HM Industrial Air Pollution Inspectorate, a branch of the Health and Safety Executive. Notes on the best practicable means of achieving dust emission limits have been agreed between the Inspectorate and the Silica and Moulding Sands Association.[1]

5.7 In existing long-established quarries new or uprated plant is generally installed without the need for any additional planning permissions, under the provisions of Class XIX(2) of the Town and Country Planning General Development Order 1977. The inappropriate siting or design of new plant may lead to local problems. Consideration is currently being given to changes in the General Development Order which may have a bearing on this particular issue.

Transport

5.8 The relative scarcity of silica sands and their distance from major consuming centres means that transport is a substantial item in the delivered cost of the mineral. There may be cases where specifications require that material is carried over considerable distances because the particular grade of sand is not available locally. In a number of instances, sands for glassmaking are transported from quarry to manufacturer by rail. The foundry industry, however, is more dispersed and the need for smaller deliveries means that road transport is used. In addition, dried foundry sand must be delivered within a certain temperature range or its setting time in the foundry may be affected. As with processing, 24-hour operation of lorries may often be necessary.

Need for well-prepared schemes

5.9 As these are all sensitive issues, particular care should be taken when preparing schemes for silica sand extraction in order to minimise environmental impact. At the national level, regular monitoring of reserve levels and trends in demand will set the context for planning decisions (see Chapter 6). At the local level, it is essential for there to be as much forward planning as practicable, whether formal (statutory) or informal. Proposals should be discussed with the mineral planning authority and other bodies, such as MAFF, or in Wales WOAD at an early stage. This will allow a more careful analysis of alternatives, and will provide time for well thought-out programmes to be drawn up. The modern system of mineral planning control gives considerable scope for screening, working,

[1]Mineral works (sand dryers and coolers), BPM 2/79: Health and Safety Executive: HM Alkali and Clean Air Inspectorate, 1979.

restoration and aftercare schemes to be devised which will go a long way to deal with the environmental issues which have been identified. Detailed advice[1] on this subject is available in government circulars and elsewhere.

Dealing with old planning permissions

5.10 It is still commonplace for silica sand workings, including plant, to be operating on the basis of planning permissions granted as long ago as 1947. The relevant provisions of the Town and Country Planning (Minerals) Act 1981 will shortly give minerals planning authorities the opportunity, in certain circumstances, to impose up-to-date conditions, but recent government advice reinforces the point that there is often much to be gained by voluntary agreements:

> "It is also hoped that planning authorities and developers will continue to enter into voluntary agreements to achieve environmental improvements where both sides recognise that existing planning conditions are inadequate or inappropriate. Such agreements reflect the greater sensitivity towards environmental needs that has developed in recent years, and in particular an awareness by both the industry and planning authorities of the need for the restoration of land previously worked but left unrestored for lack of satisfactory conditions requiring works to be carried out for this purpose."[2]

6 Monitoring

Need for monitoring

6.1 Guidelines for silica sand extraction can only provide a general framework. It is therefore important to maintain accurate, useful information which will provide common ground for any assessment of need. The relationship between demand, production and permitted reserves needs to be monitored to show the extent to which the guidelines are being met and an adequate supply of silica sand maintained.

Future surveys

6.2 The 1979 questionnaire survey carried out for the Stage 1 report provided information which was not available elsewhere. The Working Group has benefited greatly from the co-operation given by the Silica and Moulding Sands Association and the various companies producing silica sand. It is hoped this co-operation will be extended to future surveys.

6.3 The next questionnaire survey will cover 1985 and will be carried out during 1986. Details of the survey will need to be considered by the Working Group nearer the time, but in addition to the information sought for 1979, consideration should be given to determining whether silica sand is used for low grade purposes (see paragraph 4.5). Every attempt should be made to quantify permitted reserves by grade, in order to monitor the adequacy of supply (paragraph 3.4), though this is likely to prove difficult. It is thought that circulation to quarries through each mineral planning authority (except in a few special cases) worked well for the 1979 questionnaire.

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[1]DOE Circular 1/82 (Welsh Office 3/82) 'Town and Country Planning (Minerals) Act 1981'.

[2]Extract from paragraph 9 of Department of the Environment Circular 22/83 'Town and Country Planning Act 1971, Planning Gain—Obligations and Benefits which extend beyond the development for which planning permission has been sought': 25 August 1983 (Welsh Office 46/83).

Demand

6.4 Forecasts of demand should be reviewed regularly and revised as necessary to take account both of the overall economic situation and of any effects of recycling, sand reclamation (the re-use of foundry sand), or the impact of new technology. The Stage 1 report, in Table 5, estimated that the annual demand for silica sand would fall from the 1979 level of around 6m tonnes to 5m tonnes by 1985. In fact, by 1983, output had dropped to just over 4m tonnes (see paragraph 2.3). This significant fall in demand since the preparation of the Stage 1 report demonstrates the need for frequent monitoring. If possible, revised forecasts of demand should be broken down into types or grades of silica sand. In this connection the assistance of the consumer industries will need to be sought.

Differences between published statistics

6.5 The Stage 1 report (paragraph 4.9) identified a number of differences between sales statistics for 1979 published by the Business Statistics Office and those collected by the Working Group[1]. It is considered the most straightforward way to ensure compatibility between figures in future is to establish:—

(a) the same wording for questions common to both surveys;

(b) the same circulation list.

The latter point is especially important as it can sometimes be difficult to judge whether the sand produced from a quarry should properly be included as silica sand rather than construction sand. When preparing the 1985 survey, the Working Group will therefore invite the Business Statistics Office to discuss the questionnaire and its circulation at an early stage in its preparation. If at all possible, duplication of surveys should be avoided.

7 Policy Guidelines

Endorsement of guidelines

7.1 The guidelines that follow have been agreed by the Working Group. They have been endorsed by the Association of County Councils, on behalf of the mineral planning authorities in England and Wales, and the Silica and Moulding Sands Association, on behalf of the silica sand industry. The Secretaries of State for the Environment and Wales also endorse them and will take the guidelines into account when exercising their statutory responsibilities.

The Guidelines

7.2 (a) The choice of locations for new silica sand workings should take account of geological, economic, social and environmental factors, including:

(i) the loss of, or damage to, agricultural land (particularly higher quality land if areas of lower quality land are available);

(ii) areas given protection for environmental conservation;

(iii) the disturbance to local communities;

(iv) the availability of good connections to motorways, or other roads of adequate capacity and, where applicable, to the rail network;

[1]Although it is understood that by 1982 similar differences between the Business Statistics Office figures and those collected by the Silica and Moulding Sands Association had fallen markedly.

(v) the opportunity for progressive restoration, environmental enhancement and beneficial after-use of the working to be maximised.

(b) A national level of permitted reserves for specific grades of silica sand of less than 10 years is undesirable, whilst a level sufficient for over 25 years would generally be seen as more than adequate. Between these two levels national need arguments become progressively stronger or weaker. The need to maintain national productive capacity and for local releases should also be taken into account.

(c) In view of likely investment levels and the need for security of supply, applications for the granting of large permissions for silica sand extraction sufficient for 20 years' working at a site should normally be regarded as reasonable. In some cases a greater period may be justified.

(d) Mineral planning authorities should, in close consultation with the industry and District Councils, prepare specific safeguarding policies for silica sand deposits to accompany consultation area maps.

(e) Proposals for silica sand extraction should be discussed with the mineral planning authority and other bodies (such as MAFF, or in Wales the Welsh Office Agriculture Department) at an early stage to provide time to develop well-prepared screening, working restoration and after-care programmes.

(f) In some cases it may be appropriate to enter into formal agreements to cover issues that cannot otherwise be adequately dealt with, though such agreements cannot be a condition of obtaining planning permission. Voluntary agreements may enable problems of old planning permissions to be overcome.

(g) It is important to maintain accurate information to update figures in the Stage 1 report and keep the various assumptions made under review. Industry and mineral planning authorities should agree to monitor silica sand production, demand, reserves and other relevant matters. The first such monitoring survey should be carried out for 1985.

Implementation

7.3 These guidelines should be taken into account when considering proposals for extraction or when preparing or reviewing structure and local plans. The maintenance of detailed up-to-date information on the supply of and demand for silica sand is essential in order to monitor the adequacy of reserves and to provide a common basis for any assessment of need.

7.4 The co-operation at all levels that has been experienced during this study between industry and the mineral planning authorities must continue if these guidelines are to be worthwhile. For their part, the authorities should accept the need to give special consideration to the needs of the industry (as well as to the need for silica sand), while in turn, industry should give special consideration to the environmental aspects of silica sand working and restoration.

MEMBERSHIP OF THE SILICA SAND TECHNICAL WORKING GROUP

B F Panter (Chairman)	Surrey County Council
M F Adcock	Silica and Moulding Sands Association
J B Ayton	Norfolk County Council
W Bolt	Glass Manufacturers Federation
C Davies	Silica and Moulding Sands Association
D L Farrant	British Foundry Association
O Feldman	Glass Manufacturers Federation
Dr K A Gallagher	Department of the Environment
D R Harper	Humberside County Council
P N G Hardy	Norfolk County Court
*J J Henry	Lothian Regional Council
D E Highley	British Geological Society
M S C Hill	Silica and Moulding Sands Association
Dr R J Holliday	Merseyside County Council
R Koller	Bedfordshire County Council
B S Linke	Silica and Moulding Sands Association
M Millmore	Cheshire County Council
R F Needham	Silica and Moulding Sands Association
R D Pass	Kent County Council
D F Routs	Silica and Moulding Sands Association
G A Schofield	Institute of British Foundrymen
J R Stephenson	Department of Trade and Industry
J M Virgoe	Pilkington Brothers plc
G Warrilow	Staffordshire County Council
J Wellings	Birmid Qualcast (Foundries) Ltd
R J Wood	Department of the Environment
J A Bennett (Secretary)	Surrey County Council

*representing the Scottish Minerals Officers' Group, a sub-committee of the Scottish Society of Directors of Planning.

The Working Group wishes to record its appreciation of the contributions made to the Stage 2 report by Mr D A Boreham and Miss G Tishler of the Ministry of Agriculture, Fisheries and Food; Mr J Edmond, formerly of Humberside County Council; and Mrs C A Stevens of the Department of the Environment and to repeat its thanks to the many organisations who have helped during the study.

EXTRACTS FROM THE STAGE 1 (FACT FINDING) REPORT[1]

2 Summary of Findings

2.1 Silica sand is an industrial raw material of national importance occurring in limited areas of Great Britain. In 1979 output totalled around 6 m tonnes. The overall demand for silica sand is forecast to fall marginally from recent levels so that by 1990 total demand is estimated to be 4.4—5.3m tonnes per annum.

2.2 From a questionnaire survey of all quarries producing silica sand in 1979 sales of foundry sand were 3,162,000 tonnes (of which 258,000 were naturally bonded), glass sand 2,353,000 tonnes (of which 1,412,000 were for colourless glass) and other industrial purposes 705,000 tonnes. Details of types of sand produced by County or Region are given where possible. The Working Group has been unable to obtain detailed information on the distribution of sales of material.

2.3 Reserves of silica sand in Great Britain with planning permission for extraction totalled an estimated 95m tonnes at the end of 1979. Of this figure, 12m tonnes were considered suitable for the manufacture of colourless glass.

2.4 The introduction of techniques to upgrade sand will play a major role in the future availability of the mineral, and this will affect any assessment of the total resources of silica sand in Great Britain. Although silica sands have a restricted occurrence, the level of reserves with planning permission for extraction is more likely to affect the adequacy of supply than any shortage of material in the ground.

2.5 There is no alternative to the continued reliance on silica sand for foundry and glassmaking purposes, though the demand for sand might be reduced to some extent if recycling became more extensive.

2.6 Although overall permitted reserves of silica sand at the end of 1979 seemed sufficient to meet estimated demand for between 16 and 18 years, there may well be shortages of permitted reserves of particular types of sand, notably some finer foundry sands, coloured glass sand and, in England, colourless glass sand.

2.7 During preparation of the report various discrepancies with other published statistics of silica sand production became apparent. These need to be resolved. The Working Group concluded that additional information will need to be collected for the next stage of the work.

[1]Silica Sand: Stage 1 (Fact-Finding) Report: Silica Sand Technical Working Group. Available from County Planning Department (SH), Surrey County Council, County Hall, Penrhyn Road, Kingston upon Thames, Surrey KT1 2DT, price £2.50 including post and packing.

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