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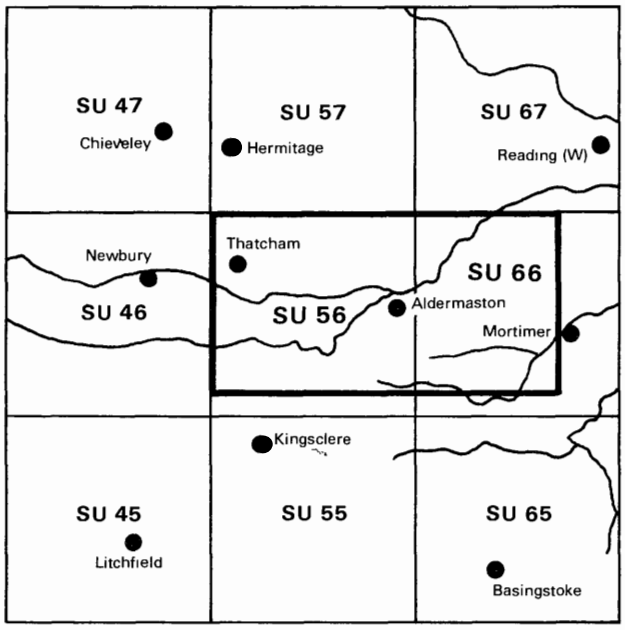

The sand and gravel resources of the country around Aldermaston, Berkshire

Description of parts of 1: 25 000 resource sheets SU 56 and SU 66

H. C. Squirrell

London Her Majesty's Stationery Office 1976

The first twelve reports on the assessment of British sand and gravel resources appeared in the Report Series of the Institute of Geological Sciences as a subseries. Report No. 13 onwards are appearing in the Mineral Assessment Report Series of the Institute.
Details of published reports appear at the end of this Report.

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The author

H. C. SQUIRRELL, PhD
Institute of Geological Sciences, London

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PREFACE

National resources of many industrial minerals may seem so large that stocktaking appears unnecessary, but the demand for minerals and for land for all purposes is intensifying and it has become increasingly clear in recent years that regional assessments of the resources of these minerals should be undertaken. The publication of information about the quantity and quality of deposits over large areas is intended to provide a comprehensive factual background against which planning decisions can be made.

Sand and gravel, considered together as naturally occurring aggregate, was selected as the bulk mineral demanding the most urgent attention, initially in the south-east of England, where about half the national output is won and very few sources of alternative aggregates are available. Following a short feasibility project, initiated in 1966 by the Ministry of Land and Natural Resources, the Mineral Assessment Unit began systematic surveys in 1968. The work is now being financed by the Department of the Environment and is being undertaken with the cooperation of the Sand and Gravel Association of Great Britain.

This Report describes the resources of sand and gravel of 153 km^2 of country around Aldermaston, shown on the accompanying resource map. The survey was conducted between 1972 and 1974 by Dr H.C. Squirrell assisted by Messrs C.E. Corser, P.G. Hoare and P. Robson as field officers who supervised the drilling and sampling programme. The report was compiled by H.C. Squirrell. The work is based on a six-inch to one mile survey by F.J. Bennett, published on the one-inch to one mile scale in 1898, and revised by H.C. Squirrell in 1973-1974.

The late Mr A.P. Mace (Land Agent), was responsible for negotiating access to land for drilling. The ready cooperation of landowners and tenants in this work is appreciated. Information provided by local gravel operators and the Berkshire County Council is gratefully acknowledged.

A.W. Woodland
Director

Institute of Geological Sciences
Exhibition Road
South Kensington
London SW7 2DE
1 January 1976

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The geological maps of the Institute of Geological Sciences, pre-existing borehole information, and 64 boreholes drilled for the Mineral Assessment Unit form the basis of the assessment of sand and gravel resources in the Aldermaston area, Berkshire.

All deposits in the area which might be potentially workable for sand and gravel have been investigated and a simple statistical method has been used to estimate the volume. The reliability of the volume estimates is given at the symmetrical 95 per cent probability level.

The 1:25 000 map is divided into six resource blocks containing between 3.8 and 14.9 km^2 of potentially workable sand and gravel. For the blocks assessed statistically the geology of the deposits is described and the mineral-bearing area, the mean thickness of overburden and mineral, and the mean grading of the mineral are stated. Detailed borehole data are given. The geology, the position of the boreholes and the outlines of the resource blocks are shown on the accompanying map.

Sommaire

Les sources des renseignements qui constituent les bases de l'évaluation des ressources en sable et en gravier dans la région d' Aldermaston, Berkshire, comprennent les cartes géologiques de l'Institute of Geological Sciences, des données obtenues des trous de sonde déjà en existence, et de 64 trous de sonde forés pour le Mineral Assessment Unit.

Dans la région tous les dépôts qui pourraient être exploités pour le sable et le gravier ont été étudiés et on s'est servi d'une méthode statistique simple pour en évaluer le volume. Les évaluations de volume sont tenues d'être symétriquement à 95 pour cent exactes.

La carte 1:25 000 est divisée en six blocs de ressource avec d'entre 3.8 à 14.9 km^2 de sable et de gravier. Pour les blocs évalués statistiquement on décrit la géologie des dépôts et on donne l'étendue du terrain minéralisé, l'épaisseur moyenne de recouvrement et de minéral, et le triage moyen de minéral. On présente des données détaillées des trous de sonde. La situation des trous de sonde, la géologie et les profils des blocs de ressource sont montrés sur la carte.

Zusammenfassung

Die geologischen Karten vom Institute of Geological Sciences, vorherexistierende Information über Bohrlöcher, und 64 für die Mineral Assessment Unit gebohrten Bohrlöcher, bilden den Grund für die Einschätzung der Sand- und Schottermittel im Aldermaston, Berkshire.

Alle Ablagerungen im Gebiet, die möglich bearbeitbar für Sand und Schotter sind, wurden untersucht, und eine einfache statistische Methode wurde benutzt, um das Volumen zu schätzen. Man gibt die Zuverlässigkeit der Volumenschatzungen mit symmetrischen 95 Prozent Vertrauensgrenzen.

Man teilt die 1:25 000 Karte in 6 Mittelsblöcke, die zwischen 3.8 und 14.9 km^2 von Sand und Schotter umfassen. Man beschreibt die Geologie der Ablagerungen für die statistisch bewerteten Blöcke. Das mineralhaltige Gebiet, die mittlere Dicke von Überlastung und Mineral, und die mittlere Klassifizierung von Mineral werden bestimmt Ausführliche Bohrlöcherdaten werden auch gegeben. Die Geologie, die Lage der Bohrlöcher und die Skizzen der Blöcke werden auf der Begleitkarte gezeigt.

The sand and gravel resources of the country around Aldermaston, Berkshire

Description of parts of 1:25 000 resource sheets SU 56 and SU 66

H. C. SQUIRRELL

Introduction

The survey is concerned with the estimation of resources, which include deposits that are not currently exploitable but have a foreseeable use, rather than reserves, which can only be assessed in the light of current, locally prevailing, economic considerations. Clearly, both the economic and the social factors used to decide whether a deposit may be workable in the future cannot be predicted; they are likely to change with time. Deposits not currently economically workable may be exploited as demand increases, as higher grade or alternative materials become scarce, or as improved processing techniques are applied to them. The improved knowledge of the main physical properties of the resource and their variability which this survey seeks to provide, will add significantly to the factual background against which planning policies can be decided (Archer, 1969; Thurrell, 1971; Harris and others, 1974).

The survey provides information at the 'indicated' level "for which tonnage and grade are computed partly from specific measurements, samples or production data and partly from projection for a reasonable distance on geological evidence. The sites available for inspection, measurement, and sampling are too widely spaced to permit the mineral bodies to be outlined completely or the grade established throughout" (Bureau of Mines and Geological Survey, 1948, p.15).

It follows that the whereabouts of reserves must still be established and their size and quality proved by the customary detailed exploration and evaluation undertaken by the industry. However, the information provided by the survey should assist in the selection of the best targets for such further work. The following arbitrary physical criteria have been adopted:

a. The deposit should average at least 1 m in thickness.
b. The ratio of overburden to sand and gravel should be no more than 3:1.
c. The proportion of fines (particles passing the No. 200 mesh BS sieve, about 1/16 mm) should not exceed 40 per cent.
d. The deposit must lie within 25 m of the surface, this being taken as the likely maximum working depth under most circumstances. It follows from the second criterion that boreholes are drilled no deeper than 18 m if no sand and gravel has been proved.

A deposit of sand and gravel that broadly meets these criteria is regarded as 'potentially workable' and is described and assessed as 'mineral' in this report. As the assessment is at the indicated level, parts of such a deposit may not satisfy all the criteria.

For the particular needs of assessing sand and gravel resources, a grain-size classification based on the geometric scale 1/16 mm, 1/4 mm, 1 mm, 4 mm, 16 mm has been adopted. The boundaries between fines (that is, the clay and silt fractions) and sand, and between sand and gravel grade material, are placed at 1/16 mm and 4 mm respectively (see Appendix C).

The volume and other characteristics are assessed within resource blocks, each of which, ideally, contains approximately 10 km^2 of sand and gravel. No account is taken of any factors, for example, roads, villages and high agricultural or landscape value, which might stand in the way of sand and gravel being exploited, although towns are excluded. The estimated total volume therefore bears no simple relationship to the amount that could be extracted in practice.

It must be emphasised that the assessment applies to the resource block as a whole. Valid conclusions cannot be drawn about the mineral in parts of a block, except in the immediate vicinity of the actual sample points.

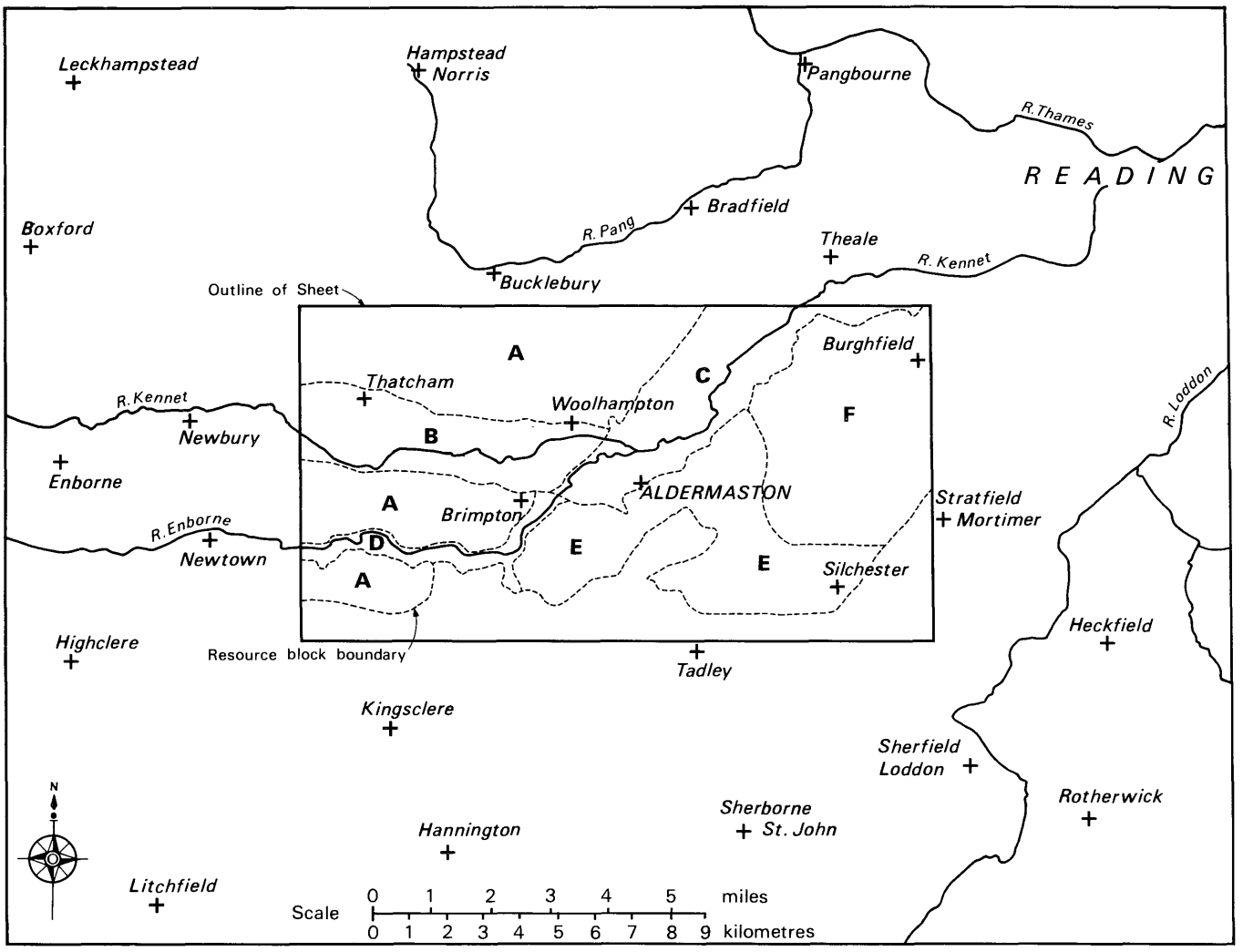


Fig. 1. Sketch map showing the location of the Aldermaston area and the position of the resource blocks boundaries

Description of the Resource Sheet

GENERAL

The resource sheet covers an area of 153 km^2 (59.1 square miles) of country around Aldermaston, Berkshire (see Fig. 1), of which nearly half (69.3 km^2) is gravel-bearing. Aldermaston is situated 15 km (9 miles) south-west of Reading and 13 km (8 miles) east of Newbury, in an area where sand and gravel has been extensively exploited for many years. The mineral-bearing deposits fall into two main categories, the river deposits and the glacial deposits. The former (in blocks B, C and D) occupy 32.3 km^2 of the Kennet and Enborne valleys and the glacial deposits (in blocks A, E and F) 37 km^2 of the plateau areas above the valleys. About 2.4 km^2 of the river gravels and 3.6 km^2 of the glacial gravels have been worked out, an estimated volume of 20 million m^3 (26 million yd^3).

No assessment has been made of the glacial gravels underlying the built-up area around Heath End [584 624][1]; the small areas of river deposits in the northward-flowing tributaries of the Enborne and in the valley of Foundry Brook in the south-east corner of the area, are also excluded.

TOPOGRAPHY

The area is dominated by the wide, steep-sided valley of the eastward flowing River Kennet, which is joined by its main tributary, the Enborne, near Brimpton. The misfit rivers follow meandering courses of low gradient, for example, the Kennet falls from about 70 m (230 ft) in the west to about 46 m (151 ft) in the north-east, a drop of only 24 m in a distance of 15 km. Above the river valley, remnants of the original surface on which the rivers were established exist over about a quarter of the resource area. They are recognised by their cover of Plateau Gravel, lying mainly between 85 m (279 ft) and 116 m (380 ft). The plateau areas are further dissected by many minor valleys, many of which are now dry.

GEOLOGY

The area around Aldermaston was first surveyed on the six-inch to one mile scale by F.J. Bennett. The area falls mainly within the one-inch to one mile Reading (268) sheet and to a small extent in the Hungerford (267), Andover (283) and Basingstoke (284) sheets, all of which were published in 1897-1898. During the present survey, amendments were made by H.C. Squirrell to both the drift and the solid geological lines. The classification is shown in Table 1.

The solid deposits consist of Eocene strata

[1] National Grid References in this report all lie within the 100 km square SU

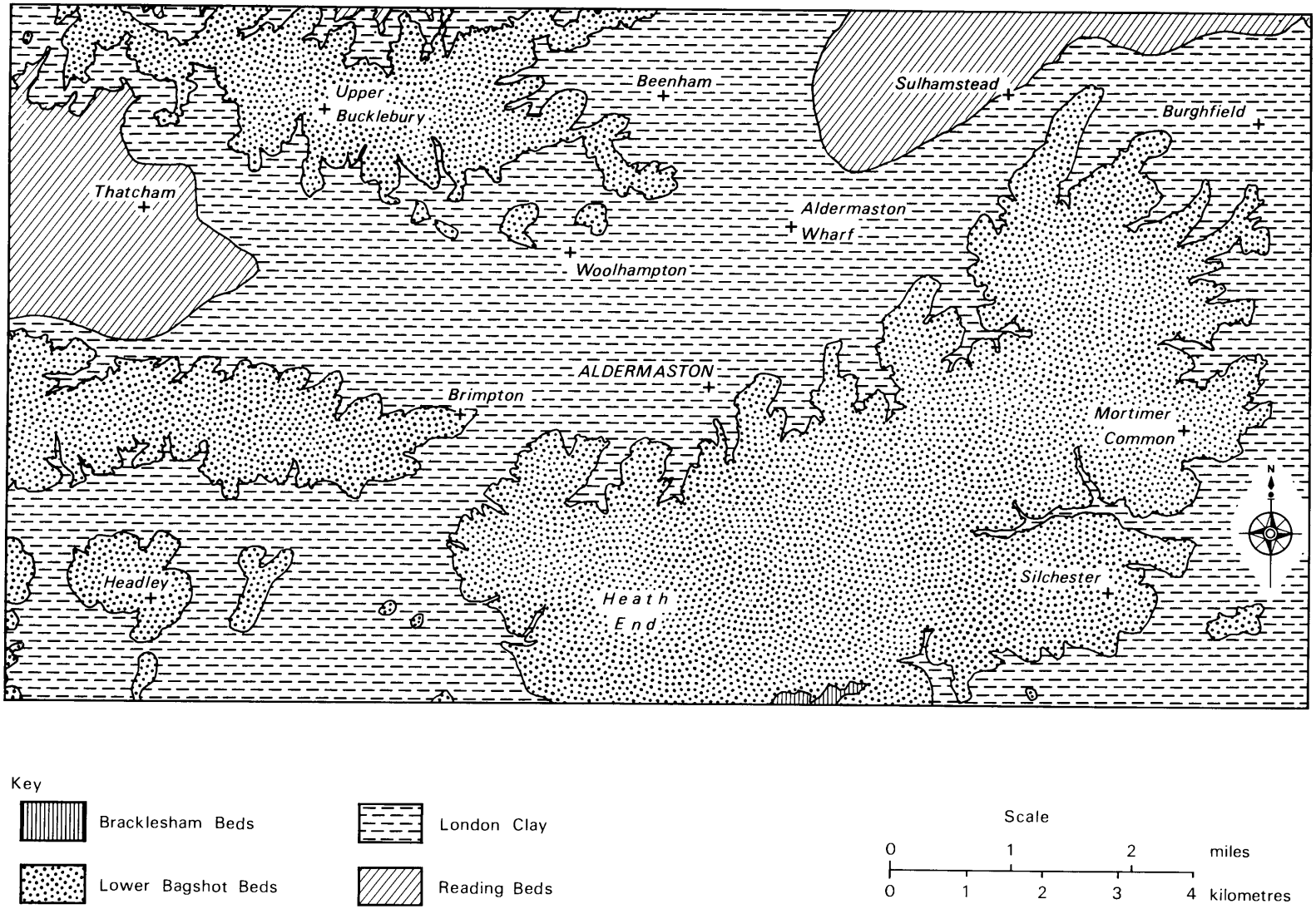


Fig. 2. Solid geology

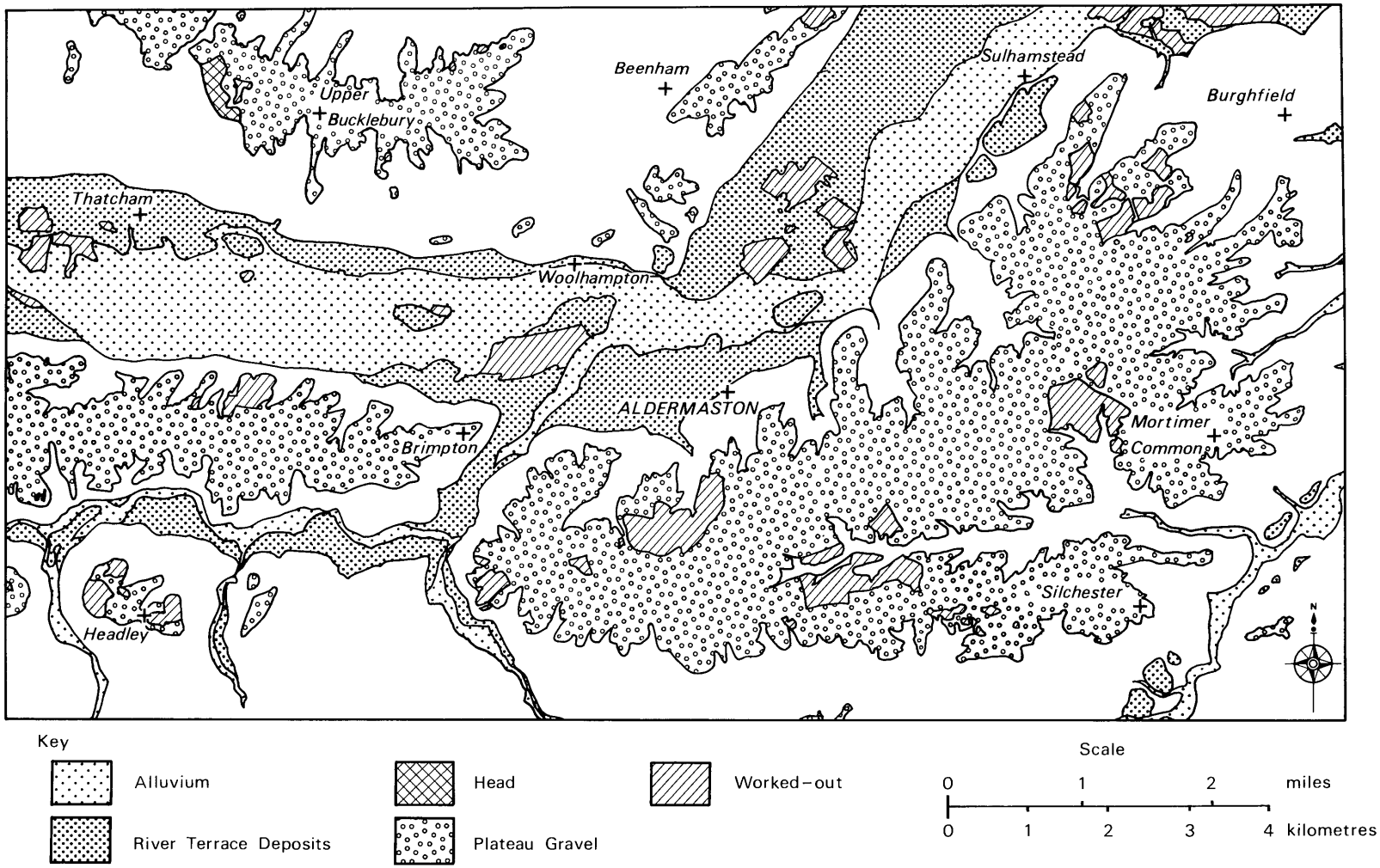


Fig. 3. Drift geology

ranging from near the base of the Reading Beds through the London Clay and Lower Bagshot Beds into the lower part of the Bracklesham Beds (Fig. 2). Their structure is simple; the beds, which are not known to be faulted, dip gently (usually between 2° and 6°) towards the east or south-east. The London Clay and Reading Beds outcrop in the valleys, and the higher ground is underlain by the Lower Bagshot Beds, most of which is covered by Plateau Gravel. The Bracklesham Beds outcrop only in a small area in the south.

Reading Beds

Unconformably overlying the Chalk, the Reading Beds consist of about 18 to 20 m of variably coloured clays and sands. The sequence commences (Osborne White, 1907) with up to 4 m of black, dark green, dark grey or brown, sandy clay containing flint pebbles in the basal metre. These are followed by 2 to 4 m of white, buff and green sand overlain by 10 to 12 m of red, blue, green, yellow and brown clay with beds of sand. Much of the Reading Beds are concealed by the alluvial deposits in the Kennet Valley.

London Clay

Conformably overlying the Reading Beds, the London Clay commences with a distinctive 'basement bed' up to 5.5 m thick, which consists (Blake, 1903, p. 42) of interstratified clays, silts and glauconitic sands containing septaria, nodules of concretionary argillaceous ironstone, flint pebbles, lignite, pyrite and carbonaceous matter. These basal beds are overlain by stiff, bluish grey, brown-weathering clay which becomes sandy towards the top. The London Clay is up to 64 m thick in the east and thins to 35 m in borehole 267/142 [5178 6962] at Cold Ash in the west.

Lower Bagshot Beds

The London Clay passes by transition into the conformably overlying Lower Bagshot Beds which consist of buff, orange-brown, grey, reddish brown and greyish yellow clays interstratified with similarly variegated silts and sands. The sands are commonly current bedded and micaceous and contain a few thin beds of flint pebbles. Some of the clays have been worked for the production of bricks and pipes. The Lower Bagshot Beds are about 26 m thick.

Bracklesham Beds

Only the basal 5 to 6 m of this formation outcrops in this area, at Tadley Hill [605 611]. The beds consist of reddish brown and grey clays with some silt and sand.

The drift deposits, both Recent and Pleistocene, include Plateau Gravel, River Terrace Deposits (undifferentiated), Head and Alluvium, the first two of which contain large amounts of potentially workable sand and gravel.

Plateau Gravel

The outcrops of Plateau Gravel are the remnants of a previously much more extensive drift spread. The deposit, which is up to 6.6 m in thickness, is probably of glaciofluvial origin, the product of an ice sheet which lay to the north and west and contained much englacial debris. The gravel fraction contains material from distant sources, for example, Bunter quartzite, vein quartz and igneous rocks. In contrast to the river terraces (see below), Plateau Gravel contains a higher percentage of fines, usually more than 10 per cent, and consequently has less economic potential. However, like the river terraces, the gravel content is usually over 50 per cent.

Head

A small area of Head has been mapped in the north-west [527 691]. It consists of clay, sand and gravel, in widely varying proportions, derived by solifluxion of the adjacent Plateau Gravel and probably also of the upper surface of the underlying Lower Bagshot Beds and London Clay. The deposit is locally up to 3.8 m in thickness.

River Terrace Deposits (undifferentiated)

These continuous spreads of alluvial deposits, which range up to 9.9 m in thickness, constitute an excellent source of good quality sand and gravel in the Kennet Valley. Their gravel content is commonly over 50 per cent and their fines fraction (mainly silt with some clay) is usually no higher than 10 per cent (see notes on resource blocks for details). They are designated 'undifferentiated' as no attempt has been made to classify the terrace levels (of which there are at least two) into a Kennet Valley sequence or to correlate them with the Thames Valley succession.

Alluvium

Occupying the present-day floodplain, Alluvium consists mainly of brown or grey, silty clay, which is sandy in parts, and up to 3.1 m in thickness. Five out of the fourteen MAU boreholes drilled through the Alluvium in the Kennet and Enborne valleys proved peat, usually at the base, up to 1.6 m thick. Molluscan shells are locally common in both the clays and peat. In the main valleys, terrace gravels extend beneath the Alluvium, but in the smaller valleys Alluvium commonly rests directly on bedrock.

Table 1. Classification of mapped deposits

		Maximum thickness (m)
DRIFT		
Recent and Pleistocene	Alluvium	3.1
	River Terrace Deposits (undifferentiated)	9.9
	Head	3.8
	Plateau Gravel	6.6
SOLID		
Eocene	Bracklesham Beds	6
	Lower Bagshot Beds	26
	London Clay	64
	Reading Beds	20

COMPOSITION OF THE SAND AND GRAVEL DEPOSITS

River Terrace Deposits

The River Terrace Deposits of the Kennet and Enborne lie within blocks B, C and D. The gravel fraction, which accounts for a mean of 66 per cent in block B, 73 per cent in block C and 65 per cent in block D consists dominantly of angular to rounded flint (usually over 95 per cent) with small amounts of rounded vein quartz and quartzite and traces of sandstone and limestone. The sand, which makes up 28, 21 and 24 per cent of the deposit in blocks B, C and D respectively, is composed almost entirely of sand and flint, the latter being more common in the coarser fraction. The fines fraction, which accounts for 6 per cent in blocks B and C and 11 per cent in block D, is usually composed of silt with only a small amount of clay.

Nineteen of the Mineral Assessment Unit boreholes drilled into the River Terrace Deposits proved mineral classified as gravel (see Appendix C and Fig. 7). Of the remaining nine that proved mineral, seven proved 'clayey' gravel, one proved 'clayey' sandy gravel and one proved 'very clayey' gravel.

Plateau Gravel

The Plateau Gravel lies within blocks A, E and F. Gravel accounts for a mean of 58 per cent in block A, 62 per cent in block E and 64 per cent in block F, only slightly less than in the River Terrace Deposits. It consists dominantly of angular to rounded flint (usually over 80 per cent), with rounded vein quartz and chert, variously coloured quartzites and igneous rocks, sandstone and small pebbles of ironstone. The sand, 23 to 27 per cent of the deposit, is mainly of quartz and flint with the latter commonly being predominant in the coarser part. The fines fraction accounts for 15 per cent in block A, 12 per cent in block E and 13 per cent in block F; this is more than twice as much as in the river deposits of the Kennet and about the same as in the Enborne. The fines fraction generally contains more clay and less silt than in the river deposits and where the clay content is particularly high locally, the Plateau Gravel has the characteristics of a 'hoggin'. The higher fines content is reflected in the grain-size classification of the Plateau Gravel; 22 of the 31 MAU boreholes that found mineral proved 'clayey' gravel, four proved 'very clayey' gravel, and only five boreholes, three of them in block E, proved mineral classified as gravel.

THE MAP

The sand and gravel resource map is folded into the pocket at the end of this report. The base map is the Ordnance Survey 1:25 000 Outline Edition in grey, on which the topography is shown by contours in green, the geological data in black and the mineral resource information in shades of red.

Geological Data

The geological boundary lines are taken from the geological maps of the area which were surveyed on the scale of 1:10 560. Borehole data, which include the stratigraphic relations and mean particle size distribution of the sand and gravel samples collected during the assessment survey, are also shown. The geological boundaries are the best interpretations of the information available at the time of survey. However, it is inevitable that local irregularities or discrepancies will be revealed by some boreholes. These are taken into account in the assessment of resources (see below and Appendix B).

Mineral Resource Information

The mineral-bearing ground is divided into resource blocks (see Appendix A). Within a resource block the mineral may be subdivided into areas where it is 'exposed' and areas where it is present beneath overburden. The mineral is identified as 'exposed' where the overburden, commonly consisting only of soil and subsoil, averages less than 1 m (3.5 ft) in thickness, although in some areas, for example, near present streams, the overburden, including Alluvium, may be thicker locally.

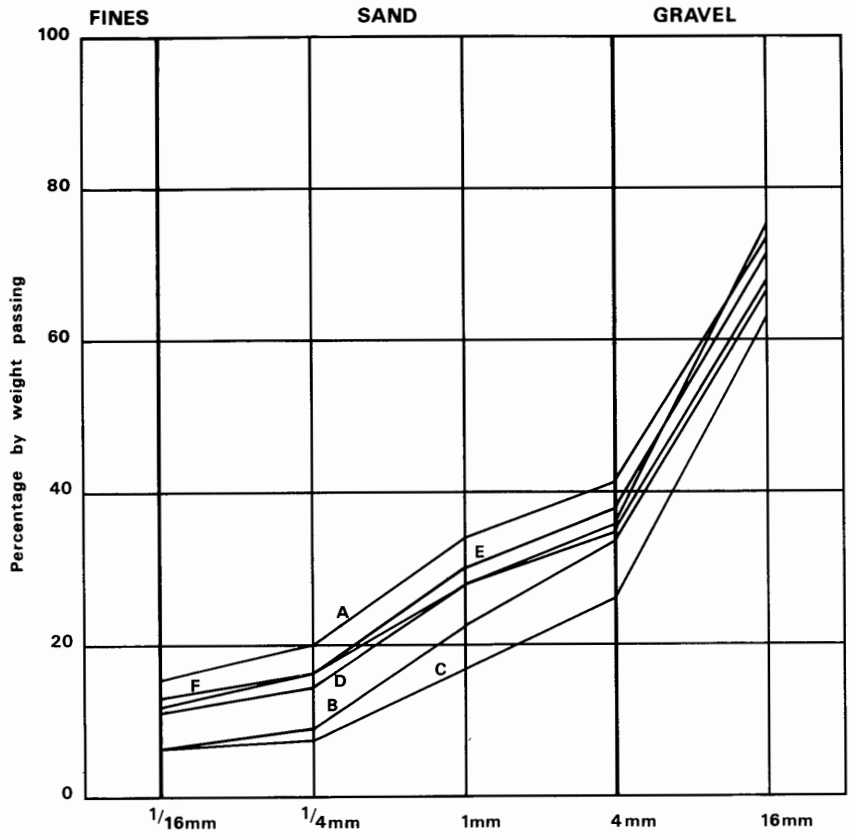
Beneath overburden the mineral may be continuous or discontinuous. As potentially workable sand and gravel was proved in all of the boreholes drilled through overburden, the mineral is regarded as continuous.

Areas where bedrock outcrops and where sand and gravel does not satisfy the definition of 'mineral' are uncoloured on the map. In such areas it has been assumed that mineral is absent except in infrequent and relatively minor patches which can neither be outlined nor assessed quantitatively in the context of this survey. Areas of unassessed sand and gravel are indicated by a red stipple.

The area of the exposed sand and gravel is measured from the mapped geological boundary lines. The whole of this area is considered as mineral, although it may include small areas where sand and gravel is not present or is not potentially workable. An inferred boundary (for which a distinctive zig-zag symbol is used) has been inserted to distinguish between an area of exposed mineral and an area where sand and gravel is interpreted to be not potentially workable, or absent. The zig-zag symbol is intended to convey an approximate location within a likely zone of occurrence rather than to represent the breadth of the zone, its size being limited only by cartographic considerations. For the purpose of measuring areas, the centre-line of the symbol is used.

RESULTS

The statistical results are summarised in Table 2. Fuller grading particulars are shown in Fig. 4. The block boundaries have been drawn to separate the areas of River Terrace Deposits (blocks B, C and D) and the areas of Plateau Gravel (blocks A, E and F). Blocks B and C enclose the gravels of the Kennet Valley and block D the gravels of the Enborne Valley. Block A includes the western and northern outcrops of the Plateau Gravel and blocks E and F, which are divided arbitrarily, include the eastern



Resource Block	Percentage by weight passing				
	1/16 mm	$\frac{1}{4}$ mm	1 mm	4 mm	16 mm
A	15	20	33	42	73
B	6	9	23	34	67
C	6	8	18	27	63
D	11	14	27	35	68
E	12	16	29	38	72
F	13	16	27	36	74

Fig. 4. Particle-size distribution for the assessed thickness of sand and gravel in resource blocks A to F

outcrop. Parts of the deposits have been excluded from the statistically assessed areas either because they contain sand and gravel less than 1 m thick or because they occur in outcrops of only limited extent.

Accuracy of the Results

For the six resource blocks (A to F) assessed statistically, the accuracy of the results at the symmetrical 95 per cent probability level (that is, it is probable that 19 times out of 20 the true volume lies within the given limits) varies between 20 and 45 per cent. However, the true values are more likely to be nearer the volume calculated than either of the limits. Moreover, it is probable that roughly the same percentage limits would apply for the estimate of volume of a much smaller parcel of ground (say, 200 acres) containing similar sand and gravel deposits if the results from the same number of sample points (as provided by, say, ten boreholes) were used in the calculation. Thus, if closer limits are needed for the quotation of reserves of parts of a block, it can be expected that data from more than ten sample points will be required, even if the area is quite small. This point can be illustrated by considering the whole of the statistically assessed sand and gravel on the sheet. The volume, 229 million m^3, can be estimated to limits of $\pm$ 12 per cent at the symmetrical 95 per cent probability level, by a calculation based on 79 data points in blocks A to F.

However, it must be emphasised that this quoted volume of sand and gravel bears no simple relationship to the amount that could be extracted in practice, as no allowance has been made in the calculations for any restraints (such as existing buildings and roads) on the use of land for mineral working.

Table 2. Summary of statistical results

Resource block	Area		Mean thickness				Volume of mineral				Mean grading percentage		
	Block	Mineral	Overburden		Mineral				Limits at the 95 per cent confidence level		Fines	Sand	Gravel
	km^2	km^2	m	ft	m	ft	million m^3	million yd^3	±%	± Vol. million m^3	-1/16 mm	-4+1/16 mm	+4 mm
A	43.4	12.8	0.3	1.0	3.2	10.5	41	54	45	18	15	27	58
B	14.6	13.6	1.2	4.0	3.6	12.0	49	64	26	13	6	28	66
C	16.3	14.9	1.2	4.0	4.0	13.0	60	78	20	12	6	21	73
D	3.8	3.8	1.7	5.5	1.8	6.0	7	9	31	2	11	24	65
E	23.2	12.2	0.5	1.5	2.6	8.5	32	42	27	9	12	26	62
F	25.7	12.0	0.4	1.5	3.3	11.0	40	52	26	10	13	23	64
A to F	127.0	69.3	0.9	3.0	3.3	10.5	229	300	12	27			

NOTES ON RESOURCE BLOCKS A to F

Block A

This block, which contains 12.8 km^2 of mineral, is divided into three parts by the Kennet and Enborne valleys. The northern area contains 5.8 km^2 of mineral, the central area 6.3 km^2 and the southern area 0.7 km^2. Most of the sand and gravel-bearing drift deposits lie between 90 m (300 ft) and 116 m (380 ft) and have a flat or only gently sloping upper surface. They are underlain mainly by the clays and sands of the Lower Bagshot Beds and by the London Clay in a few places. Sand and gravel has been worked at several localities, mainly north-east of Beenham House [6026 6950], west of Turner's Green [5370 6910], east of Crookham House [5252 6486] and particularly around Headley [5180 6240].

The assessment is based on 11 MAU boreholes and 103 other records. The mineral ranges in thickness from less than a metre at a few places to 6.6 m in borehole 56 SW 4; it has a mean of 3.2 m. In more detail, the mineral is thinnest in the northern area, where it has a mean of only 2.3 m and is much thicker, mean 3.8 m, in the central area. The only borehole in the southern area shows the mineral to be 4.9 m thick. The estimated volume of mineral is 41 million m^3 ± 45 per cent.

The overburden is thickest, 0.8 m, in borehole 56 SW 8 and has a mean of only 0.3 m. It usually consists of gravelly soil and subsoil.

The fines content of the mineral generally ranges between 13 and 18 per cent, but falls to 9 per cent in borehole 56 SW 12 and reaches 26 per cent in borehole 56 NW 26. The proportion of sand, which is dominantly medium grained, usually varies between 23 and 31 per cent, but is as low as 14 per cent in borehole 56 NW 26 and reaches a maximum of 35 per cent in borehole 56 SW 8. The proportion of gravel usually exceeds 55 per cent and is as high as 67 per cent in borehole 56 NW 27. Just under half of the gravel is coarse in grade. The mean grading for the block is fines 15 per cent, sand 27 per cent, gravel 58 per cent; overall, the mineral is classified as 'clayey' gravel.

Block B

This block includes 13.6 km^2 of mineral-bearing River Terrace Deposits which continuously floor the Kennet Valley in the western part of the area. About two-thirds of the area is covered by Alluvium, the surface of which slopes gently from about 65 m (215 ft) in the west to about 58 m (190 ft) in the east. The drift is underlain by Reading Beds in the west and by London Clay in the east. The terrace gravels have been worked extensively to the south-west of Thatcham [515 674] and south of Woolhampton [573 667].

The assessment is based on 12 MAU boreholes and 88 other records. The mineral has a mean thickness of 3.6 m; it is locally less than 1 m thick and ranges up to 7.9 m in borehole 56 NE 10 where the deposits probably lie in a buried channel. The estimated volume of mineral is 49 million m^3 ± 26 per cent.

The overburden, usually soil overlying alluvial clay and silt with traces of gravel, has an average thickness of 1.2 m; it ranges from a thin soil cover only, to 4.3 m in borehole 267/182. The 4.5 m of overburden in borehole 56 NW 20 contains 3 m of 'made ground', which is discounted in the overburden calculations. Where Alluvium has been mapped on the River Terrace Deposits the overburden has a mean thickness of 1.3 m and in the Alluvium-free areas the overburden has a mean of 1.0 m.

The fines content (mainly silt) of the mineral ranges from as little as 1 per cent in borehole 56 NW 23 to 12 per cent in borehole 56 NE 9. The proportion of sand, which is mainly medium and coarse grained, usually ranges between 22 and 34 per cent, but decreases to only 12 per cent in borehole 56 NE 10 and is as much as 46 per cent in borehole 56 NW 24. The gravel content is only 44 per cent in borehole 56 NW 24, but generally is over 60 per cent and reaches 86 per cent in borehole 56 NE 10. The mean grading for the block is fines 6 per cent, sand 28 per cent, gravel 66 per cent; overall, the mineral is classified as gravel.

Block C

This block embraces 14.9 km^2 of mineral-bearing River Terrace Deposits of the River Kennet, which extend north-eastwards from the confluence with the River Enborne to the northern margin of the sheet. About half of the area is covered by Alluvium, the surface of which falls from about 58 m (190 ft) in the west to about 46 m (150 ft) in the north-east. The drift deposits are underlain by the London Clay in the south-west and the Reading Beds in the north-east. The terrace gravels have been worked extensively around Aldermaston Wharf [602 672] and in the area of Sheffield Bottom [649 698].

The assessment of resources is based on 12 MAU boreholes and 98 other records. The mineral has a mean thickness of 4 m; locally it is less than 1 m thick and reaches an exceptional thickness of 8.9 m in two bands in borehole 268/6 which is situated [5902 6511] close to the mapped margin of the deposit. The estimated volume of mineral is 60 million m^3 ± 20 per cent.

The overburden, generally soil on alluvial clay and silt with some pebbles and beds of peat, averages 1.2 m in thickness. It ranges from thin soil in some areas to 3.3 m of silty alluvial clay with some peat in borehole 56 NE 13. In the area covered by mapped Alluvium the mean overburden thickness is 1.9 m and in the remainder of the area it is 0.8 m.

The fines content (mainly silt) of the mineral usually ranges between 1 and 10 per cent, but it increases to 18 per cent in borehole 56 NE 12. The proportion of sand, which is mainly medium and coarse grained, usually ranges between 21 and 34 per cent, but falls to as little as 9 per cent in borehole 66 NW 9. The proportion of gravel is usually over 60 per cent and reaches 90 per cent in borehole 66 NW 9. The lowest figure recorded is 55 per cent in borehole 56 NE 12. The mean grading for the block is fines 6 per cent, sand 21 per cent, gravel 73 per cent; overall, the mineral is classified as gravel.

Table 3. Data from assessment boreholes: block A.

Borehole number	Recorded thickness		Mean grading percentages					
	Mineral (m)	Overburden (m)	Fines	Fine sand	Medium sand	Coarse sand	Fine gravel	Coarse gravel
			-1/16 mm	-¼+1/16 mm	-1+¼ mm	-4+1 mm	-16+4 mm	+16 mm
56 NW 26	2.2	0.1	26	3	6	5	23	37
56 NW 27	2.1	0.1	15	4	9	5	32	35
56 NE 5	5.8	0.1	18	3	10	10	30	29
56 NE 8	Absent							
56 NE 15	3.4	0.3	13	4	16	10	35	22
56 SW 4	6.6	0.1	13	4	11	9	35	28
56 SW 5	6.2	0.2	14	6	14	8	29	29
56 SW 7	4.9	0.4	14	5	19	7	35	20
56 SW 8	5.4	0.8	17	10	16	9	25	23
56 SW 10	Absent							
56 SW 12	5.6	0.1	9	4	19	6	34	28
Mean for block			15	5	13	9	31	27

Table 4. Data from assessment boreholes: block B.

Borehole number	Recorded thickness		Mean grading percentages					
	Mineral (m)	Overburden (m)	Fines	Fine sand	Medium sand	Coarse sand	Fine gravel	Coarse gravel
			-1/16 mm	-¼+1/16 mm	-1+¼ mm	-4+1 mm	-16+4 mm	+16 mm
56 NW 20	1.9	4.5	6	8	16	10	33	27
56 NW 21	4.3	2.5	4	6	28	8	23	31
56 NW 22	3.3	0.6	6	3	14	9	31	37
56 NW 23	3.1	1.5	1	2	7	13	38	39
56 NW 24	4.3	0.4	10	4	27	15	31	13
56 NW 25	3.9	0.9	3	1	11	11	33	41
56 NW 29	2.8	0.8	10	6	21	13	28	22
56 NE 6	4.6	0.5	5	3	16	12	31	33
56 NE 7	4.2	0.7	10	3	12	11	36	28
56 NE 9	4.6	2.4	12	0	12	14	34	28
56 NE 10	7.9	1.9	2	0	6	6	33	53
56 NE 11	4.6	0.4	9	2	10	11	33	30
Mean for block			6	3	14	11	33	33

Table 5. Data from assessment boreholes: block C.

Borehole number	Recorded thickness		Mean grading percentages					
	Mineral (m)	Overburden (m)	Fines	Fine sand	Medium sand	Coarse sand	Fine gravel	Coarse gravel
			-1/16 mm	$-\frac{1}{4}+1/16$ mm	$-1+\frac{1}{4}$ mm	-4+1 mm	-16+4 mm	+16 mm
56 NE 12	3.3	1.4	18	4	13	10	30	25
56 NE 13	4.3	3.3	2	0	4	6	31	57
56 NE 14	4.2	0.4	10	2	10	9	36	33
56 NE 16	3.2	1.0	6	3	19	11	25	36
56 NE 17	4.9	0.4	6	2	12	10	40	30
66 NW 2	3.0	0.2	4	2	8	7	36	43
66 NW 3	7.4	2.8	2	1	7	7	39	44
66 NW 5	4.4	1.3	10	2	12	11	36	29
66 NW 6	3.1	0.2	9	7	13	14	34	23
66 NW 7	4.9	1.9	1	1	8	13	41	36
66 NW 9	4.2	1.2	1	1	5	3	31	59
66 NW 14	4.7	0.3	5	4	16	13	40	22
Mean for block			6	2	10	9	36	37

Table 6. Data from assessment boreholes: block D

Borehole number	Recorded thickness		Mean grading percentages					
	Mineral (m)	Overburden (m)	Fines	Fine sand	Medium sand	Coarse sand	Fine gravel	Coarse gravel
			-1/16 mm	$-\frac{1}{4}+1/16$ mm	$-1+\frac{1}{4}$ mm	-4+1 mm	-16+4 mm	+16 mm
56 SW 6	1.9	2.8	13	3	20	10	32	22
56 SW 9	2.9	1.7	6	2	14	11	41	26
56 SW 11	1.3	3.0	3	1	5	3	24	64
56 SW 13	2.5	2.6	21	3	11	7	29	29
Mean for block			11	3	13	8	33	32

Block D

Block D includes 3.8 km^2 of mineral deposited by the River Enborne, a tributary of the River Kennet; the bedrock is London Clay. Sand and gravel has been worked only on a small scale. The assessment is based on four MAU boreholes and 32 other records. The mineral thickness in the MAU boreholes varies between 1.3 and 2.9 m, but the other records show that less than 1 m and as much as 5.8 m (probably a channel infilling) are present locally. The mean thickness is 1.8 m. The estimated volume of mineral is 7 million m^3 ± 31 per cent. The overburden varies in thickness from 0.3 to 4.7 m; the mean is 1.7 m.

The fines content varies widely between 3 per cent in borehole 56 SW 11 to 21 per cent in borehole 56 SW 13. The volume of sand, which is dominantly medium grained, reaches 33 per cent in borehole 56 SW 6 and is as little as 9 per cent in borehole 56 SW 11. The proportion of gravel is over 50 per cent in all the MAU boreholes and is as high as 88 per cent in borehole 56 SW 11. The mean grading for the block is fines 11 per cent, sand 24 per cent, gravel 65 per cent; overall, the mineral is classified as 'clayey' gravel.

Block E

This block includes 12.2 km^2 of mineral-bearing Plateau Gravel, the western part of a continuous outcrop extending from the Enborne Valley in the west to near Burghfield in the east. The drift deposits have a gently undulating upper surface, which lies mainly between 96 m (316 ft) and 107 m (350 ft), some 40 m (130 ft) above the Kennet Valley. They are underlain by the sands and clays of the Lower Bagshot Beds and to a very small extent in the north by the London Clay. About 1.7 km^2 of sand and gravel has been worked out, mainly at Ashfordhill Farm [562 627], Brimpton Common Farm [573 630], Wasing Wood [586 635], Barlow's Plantation [605 627] and Silchester Common [620 623].

The assessment is based on 13 MAU boreholes and 132 other records. The mineral ranges in thickness from under 1 m at a few places to 4.8 m in borehole 66 SW 7; the mean is 2.6 m. Rapid local variations in thickness are known to occur — a reflection of the irregular bedrock surface on which the Plateau Gravel was deposited. The volume of the mineral is 32 million m^3 ± 27 per cent. The overburden, usually gravelly soil and subsoil, ranges from 0.1 m in borehole 66 SW 7 to 2 m in borehole 56 SE 22; the mean is 0.5 m.

The percentage of fines ranges most commonly between 9 and 19 per cent, but it is as low as 5 per cent in borehole 66 SW 11 and reaches 26 per cent in borehole 56 SE 19. The proportion of sand ranges between 18 and 33 per cent; it is mainly medium and coarse grained. The gravel content usually ranges between 60 and 66 per cent, but falls to 53 per cent in borehole 56 SE 19 and reaches 70 per cent in borehole 66 SW 11. The mean grading for the block is fines 12 per cent, sand 26 per cent, gravel 62 per cent; overall, the mineral is classified as 'clayey' gravel.

Block F

This block includes 12 km^2 of mineral-bearing Plateau Gravel which adjoins that of block E. The gently undulating upper surface of the drift lies mainly between 85 and 99 m (280 and 325 ft), some 35 m (115 ft) above the Kennet Valley. The Plateau Gravel is underlain mainly by the sands and clays of the Bagshot Beds and to a small extent by the London Clay in the north. About 1.2 km^2 of sand and gravel has been worked, mainly around Hundred Acre Piece [638 650] and in several areas east of Ufton Nervet [635 675].

The assessment is based on 10 MAU boreholes, four Hydrogeological Department boreholes and 116 other records. The mineral ranges in thickness from under 1 m locally to 5.9 m in borehole 66 NW 12; the mean is 3.3 m. Rapid variations in thickness are known to occur over short distances and locally the mineral thins out entirely, for example, in the workings [640 655] near Four Houses Corner. The volume of the mineral is 40 million m^3 ± 26 per cent.

The overburden, usually gravelly soil and subsoil, ranges from 0.1 m in borehole 66 SE 1 to 1.2 m in borehole 268/318; the mean is 0.4 m.

The percentage of fines usually ranges between 10 and 18 per cent, but it falls to 7 per cent in borehole 66 NW 11 and increases to 25 per cent in borehole 66 NW 10. The sand content varies between 18 and 28 per cent except in borehole 66 SE 1 where it increases to 37 per cent; the sand is dominantly medium and coarse grained. The proportion of gravel, the greater part of which is of fine grade, ranges between 52 and 71 per cent. The grading for the block is fines 13 per cent, sand 23 per cent and gravel 64 per cent; overall, the mineral is classified as 'clayey' gravel.

Table 7. Data from assessment boreholes: block E

Borehole number	Recorded thickness		Mean grading percentages					
	Mineral (m)	Overburden (m)	Fines	Fine sand	Medium sand	Coarse sand	Fine gravel	Coarse gravel
			-1/16 mm	$-\frac{1}{4}+1/16$ mm	$-1+\frac{1}{4}$ mm	-4+1 mm	-16+4 mm	+16 mm
56 SE 19	2.3	0.4	26	2	10	9	28	25
56 SE 20	3.5	1.2	12	5	13	9	38	23
56 SE 21	4.1	0.7	14	6	12	8	31	29
56 SE 22	1.0	2.0	11	7	12	9	32	29
66 NW 4	1.1	0.3	19	2	10	6	34	29
66 NW 8	4.0	0.3	13	4	11	11	38	23
66 SW 6	2.1	0.2	9	6	18	6	35	26
66 SW 7	4.8	0.1	12	3	15	8	31	31
66 SW 8	2.9	0.2	11	6	9	9	29	36
66 SW 9	2.3	0.7	10	3	13	8	30	36
66 SW 11	4.1	0.3	5	3	13	9	42	28
66 SW 12	3.9	0.6	7	13	16	14	39	21
66 SW 14	3.9	0.3	14	4	12	10	31	29
Mean for block			12	4	13	9	34	28

Table 8. Data from assessment boreholes: block F

Borehole number	Recorded thickness		Mean grading percentages					
	Mineral (m)	Overburden (m)	Fines	Fine sand	Medium sand	Coarse sand	Fine gravel	Coarse gravel
			-1/16 mm	$-\frac{1}{4}+1/16$ mm	$-1+\frac{1}{4}$ mm	-4+1 mm	-16+4 mm	+16 mm
66 NW 10	3.3	0.4	25	2	8	10	33	22
66 NW 11	4.0	0.7	7	3	12	13	36	29
66 NW 12	5.9	0.4	11	2	6	10	39	32
66 NW 13	2.6	0.5	12	3	10	9	36	30
66 NW 15	5.3	0.3	15	4	14	7	40	20
66 NW 16	4.7	0.4	10	2	10	11	38	29
66 SW 10	4.6	0.3	13	3	8	10	40	26
66 SW 13	5.0	0.4	18	2	6	10	38	26
66 SW 15	3.1	0.2	13	3	13	8	40	23
66 SE 1	2.7	0.1	11	3	27	7	38	14
Mean for block			13	3	11	9	38	26

Appendix A: Field and Laboratory Procedures

Trial and error during initial studies of the complex and variable glacial deposits of East Anglia and Essex showed that an absolute minimum of five sample points evenly distributed across the sand and gravel are needed to provide a worthwhile statistical assessment, but that, where possible, there should be not less than ten. Sample points are any points for which adequate information exists about the nature and thickness of the deposit and may include boreholes other than those drilled during the survey and exposures. In particular, the cooperation of sand and gravel operators ensures that boreholes are not drilled where reliable information is already available; although this may be used in the calculations, it is held confidentially by the Institute and cannot be disclosed.

The mineral shown on each 1:25 000 sheet is divided into resource blocks. The arbitrary size selected, 10 km², is a compromise to meet the aims of the survey by providing sufficient sample points in each block. As far as possible the block boundaries are determined by geological boundaries so that, for example, glacial and river terrace gravels are separated. Otherwise division is by arbitrary lines, which may bear no relationship to the geology. The blocks are drawn provisionally before drilling begins.

A reconnaissance of the ground is carried out to record any exposures and inquiries are made to ascertain what borehole information is available. Borehole sites are then selected to provide an even pattern of sample points at a density of approximately one per square kilometre. However, because broad trends are independently overlain by smaller scale characteristically random variations, it is unnecessary to adhere to a square grid pattern. Thus such factors as ease of access and the need to minimise disturbance to land and the public are taken into account in siting the holes; at the same time it is necessary to guard against the possibility that ease of access (that is, the positions of roads and farms) may reflect particular geological conditions, which may bias the drilling results.

The drilling machine employed should be capable of providing a continuous sample representative of all unconsolidated deposits, so that the in-situ grading can be determined, if necessary, to a depth of 30 m (100 ft) at a diameter of about 200 mm (8 in), beneath different types of overburden. It should be reliable, quiet, mobile and relatively small (so that it can be moved to sites of difficult access). Shell and auger rigs have proved to be almost ideal.

The rigs are modified to enable deposits above the water table to be drilled 'dry', instead of with water added to facilitate the drilling, to minimise the amount of material drawn in from outside the limits of the hole. The samples thus obtained are representative of the in-situ grading, and satisfy one of the most important aims of the survey. Below the water table the rigs are used conventionally, although this may result in the loss of some of the fines fraction and the pumping action of the bailer tends to draw unwanted material into the hole from the sides or the bottom.

A continuous series of bulk samples is taken throughout the sand and gravel. Ideally samples are composed exclusively of the whole of the material encountered in the borehole between stated depths. However, care is taken to discard, as far as possible, material which has caved or has been pumped from the bottom of the hole. A new sample is commenced whenever there is an appreciable lithological change within the sand and gravel, or at every 1 m (3.5ft) depth. The samples, each weighing between 25 and 45 kg (55 and 100 lb), are despatched in heavy duty polythene bags to a laboratory for grading. The grading procedure is based on British Standard 1377 (1967). Random checks on the accuracy of the grading are made in the laboratories of the Institute's Geochemical Division.

All data, including mean grading analysis figures calculated for the total thickness of the mineral, are entered on standard record sheets, abbreviated copies of which are reproduced in Appendix F.

Detailed records may be consulted at the appropriate offices of the Institute, upon application to the Head, Mineral Assessment Unit.

Appendix B: Statistical Procedure

Statistical Assessment

1. A statistical assessment is made of an area of mineral greater than 2 km², if there is a minimum of five evenly spaced boreholes in the resource block (for smaller areas see paragraph 12 below).

2. The simple methods used in the calculations are consistent with the amount of data provided by the survey. Conventional symmetrical confidence limits are calculated for the 95 per cent probability level, that is, there is a 5 per cent or one in twenty chance of a result falling outside the stated limits.

3. The volume estimate (V) for the mineral in a given block is the product of the two variables, the sampled areas (A) and the mean thickness ($\bar{l}_m$) calculated from the individual thicknesses at the sample points. The standard deviations for these variables are related such that

$$S_V = \sqrt{(S_A^2 + S_{\bar{l}_m}^2)} \qquad [1]$$

4. The above relationship may be transposed such that

$$S_V = S_{\bar{l}_m} \sqrt{(1 + S_A^2/S_{\bar{l}_m}^2)} \qquad [2]$$

From this it can be seen that as $S_A^2/S_{\bar{l}_m}^2$ tends to 0, S_V tends to $S_{\bar{l}_m}$.
If, therefore, the standard deviation for area is small with respect to that for mean thickness, the standard deviation for volume approximates to that for mean thickness.

5. Given that the number of approximately evenly spaced sample points in the sampled area is n with mineral thickness measurements $l_{m_1}, l_{m_2}, \ldots l_{m_n}$, then the best estimate of mean thickness, $\bar{l}_m$, is given by

$$\frac{\sum (l_{m_1} + l_{m_2} \ldots l_{m_n})}{n}$$

For groups of closely spaced boreholes a discretionary weighting factor may be applied to avoid bias (see note on weighting below). The standard deviation for mean thickness, $S_{\bar{l}}$, expressed as a proportion of the mean thickness is given by

$$S_{\bar{l}} = (1/\bar{l}_m) \sqrt{[(l_m - \bar{l}_m)^2/(n-1)]}$$

where l_m is any value in the series l_{m_1} to l_{m_n}.

6. The sampled area in each resource block is coloured pink on the map. Wherever possible, calculations relate to the mineral within mapped geological boundaries (which may not necessarily correspond to the limits of deposit). Where the area is not defined by a mapped boundary, that is, where the boundary is inferred, a distinctive symbol is used. Experience suggests that the errors in determining area are small relative to those in thickness. The relationship $S_A/S_{\bar{l}_m} \leqslant 1/3$ is assumed in all cases. It follows from equation [2] that

$$S_{\bar{l}_m} \leqslant S_V \leqslant 1.05\, S_{\bar{l}_m} \qquad [3]$$

7. The limits on the estimate of mean thickness of mineral, $L_{\bar{l}_m}$, may be expressed in absolute units $\pm(t/\sqrt{n}) \times S_{\bar{l}_m}$ or as a percentage $\pm(t/\sqrt{n}) \times S_{\bar{l}_m} \times (100/\bar{l}_m)$ per cent, where t is Student's t at the 95 per cent probability level for $(n-1)$ degrees of freedom, evaluated by reference to statistical tables. (In applying Student's t it is assumed that the measurements are distributed normally).

8. Values of t at the 95 per cent probability level for values of n up to 20 are as follows:

n	t	n	t
1	infinity	11	2.228
2	12.706	12	2.201
3	4.303	13	2.179
4	3.182	14	2.160
5	2.776	15	2.145
6	2.571	16	2.131
7	2.447	17	2.120
8	2.365	18	2.110
9	2.306	19	2.101
10	2.262	20	2.093

(from Table 12, Biometrika Tables for Statisticians, Volume 1, Second Edition, Cambridge University Press, 1962). When n is greater than 20, 1.96 is used (the value of t when n is infinity).

9. In calculating confidence limits for volume, L_V, the following inequality corresponding to equation [3] is applied: $L_{\bar{l}_m} \leqslant L_V \leqslant 1.05\, L_{\bar{l}_m}$

10. In summary, for values of n between 5 and 20, L_V is calculated as

$$[(1.05 \times t)/\bar{l}_m] \times [\sqrt{\Sigma(l_m - \bar{l}_m)^2/n(n-1)}] \times 100$$

per cent, and when n is greater than 20, as

$$[(1.05 \times 1.96)/\bar{l}_m] \times [\sqrt{\Sigma(l_m - \bar{l}_m)^2/n(n-1)}] \times 100$$

per cent.

11. The application of this procedure to a fictitious area is illustrated in Figs. 5 and 6.

Inferred Assessment

12. If the sampled area of mineral in a resource block is between 0.25 km² and 2 km² an assessment is inferred, based on geological and topographical information usually supported by the data from one or two boreholes. The volume of mineral is calculated as the product of the area, measured from field data, and the estimated thickness. Confidence limits are not calculated.

13. In some cases a resource block may include an area left uncoloured on the map, within which mineral (as defined) is interpreted to be generally absent. If there is reason to believe that some mineral may be present, an inferred assessment may be made.

14. No assessment is attempted for an isolated area of mineral less than 0.25 km².

15. *Note on Weighting* The thickness of a deposit at any point may be governed solely by the position of the point in relation to a broad trend. However, most sand and gravel deposits also exhibit a random pattern of local, and sometimes considerable, variation in thickness. Thus the distribution of sample points need be only approximately regular and in estimating the mean thickness only simple weighting is necessary. In practice, equal weighting can often be applied to thicknesses at all sample points. If, however, there is a distinctly unequal distribution of points, bias is avoided by dividing the sampled area into broad zones, to each of which a value roughly proportional to its area is assigned. This value is then shared between the data points within the zone as the weighting factor.

Appendix C: Classification and Description of Sand and Gravel

For the purposes of assessing resources of sand and gravel a classification should take account of economically important characteristics of the deposit, in particular the absolute content of fines and the ratio of sand to gravel.

The terminology commonly used by geologists when describing sedimentary rocks (Wentworth, 1922) is not entirely satisfactory for this purpose. For example, Wentworth proposed that a deposit should be described as a 'gravelly sand' when it contains more sand than gravel and there is at least 10 per cent of gravel, provided that there is less than 10 per cent of material finer than sand (less than 1/16 mm) and coarser than pebbles (more than 64 mm in diameter). Because deposits containing more than 10 per cent fines are not embraced by this system a modified binary classification based on Willman (1942) has been adopted.

When the fines content exceeds 40 per cent the material is not considered to be potentially workable and falls outside the definition of mineral. Deposits which contain 40 per cent fines or less are classified primarily on the ratio of sand to gravel but qualified in the light of the fines content, as follows: less than 10 per cent fines – no qualification; 10 per cent or more but less than 20 per cent fines – 'clayey'; 20 to 40 per cent fines – 'very clayey'.

The term 'clay' (as written, with single quote marks) is used to describe all material passing $\frac{1}{16}$ mm. Thus it has no mineralogical significance and includes particles falling within the size range of silt. The normal meaning applies to the term clay where it does not appear in single quotation marks.

The ratio of sand to gravel defines the boundaries between sand, pebbly sand, sandy gravel and gravel (at 19:1, 3:1 and 1:1).

Thus it is possible to classify the mineral into one of twelve descriptive categories (see Fig. 7).The procedure is as follows:

1. Classify according to ratio of sand to gravel.
2. Describe fines.

For example, a deposit grading 11 per cent gravel, 70 per cent sand and 19 per cent fines is classified as 'clayey' pebbly sand. This short description is included in the borehole log (see Note 11, p.20).

Many differing proposals exist for the classification of the grain size of sediments (Atterberg, 1905; Udden, 1914; Wentworth, 1922; Wentworth, 1935; Allen, 1936; Twenhofel, 1937; Lane and others, 1947). As Archer (1970a, b) has emphasised, there is a pressing need for a simple metric scale acceptable to both scientific and engineering interests, for which the class limit sizes correspond closely with certain marked changes in the natural properties of mineral particles. For example, there is an important change in the degree of cohesion between particles at about the $\frac{1}{16}$-mm size, which approximates to the generally accepted boundary between silt and sand. These and other requirements are met by a system based on Udden's geometric scale and a simplified form of Wentworth's terminology (Table 9), which is used in this Report.

The fairly wide intervals in the scale are consistent with the general level of accuracy of the qualitative assessments of the resource blocks. Three sizes of sand are recognised, fine ($-\frac{1}{4}$ $+\frac{1}{16}$ mm), medium (-1 $+\frac{1}{4}$ mm) and coarse (-4 $+1$ mm). The boundary at 16 mm distinguishes a range of finer gravel (-16 $+4$ mm), often characterised by abundance of worn tough pebbles of vein quartz, from larger pebbles often of notably different materials. The boundary at 64 mm distinguishes pebbles from cobbles. The term 'gravel' is used loosely to denote both pebble-sized and cobble-sized material.

The size distribution of borehole samples is determined by sieve analysis, which is presented by the laboratory as logarithmic cumulative curves (see, for example, British Standard 1377: 1967). In this report the grading is tabulated on the borehole record sheets (Appendix F), the intercepts corresponding with the simple geometric scale $\frac{1}{16}$ mm, $\frac{1}{4}$ mm, 1 mm, 4 mm, 16 mm and so on as required. Original sample grading curves are available for reference at the appropriate office of the Institute.

Each bulk sample is described, subjectively, by a geologist at the borehole site. Being based on visual examination, the description of the grading is inexact, the accuracy depending on the experience of the observer. The descriptions recorded are modified, as necessary, when the laboratory results become available.

The relative proportions of the rock types present in the gravel fraction are indicated by the use of the words 'and' or 'with'. For example, 'flint and quartz' indicates very approximate equal proportions with neither constituent accounting for less than about 25 per cent of the whole; 'flint with quartz' indicates that flint is dominant and quartz, the principal accessory rock types, comprises 5 to 25 per cent of the whole. Where the accessory material accounts for less than 5 per cent of the whole, but is still readily apparent, the phrase 'with some' has been used. Rare constituents are referred to as 'trace'.

The terms used in the field to describe the degree of rounding of particles, which is concerned with the sharpness of the edges and corners of a clastic fragment and not the shape (after Pettijohn, 1957), are as follows.

Angular: showing little or no evidence of wear; sharp edges and corners.

Subangular: showing definite effects of wear. Fragments still have their original form but edges and corners begin to be rounded off.

Subrounded: showing considerable wear. The edges and corners are rounded off to smooth curves. Original grain shape is still distinct.

Rounded: original faces almost completely destroyed, but some comparatively flat surfaces may still remain. All original edges and corners have been smoothed off to rather broad curves. Original shape is still apparent.

Well-rounded: no original faces, edges or corners left. The entire surface consists of broad curves; flat areas are absent. The original shape is suggested by the present form of the grain.

Table 9. Classification of gravel, sand and fines

Size limits	Grain size description	Qualification	Primary classification
64 mm	Cobble		Gravel
16 mm	Pebble	Coarse	
		Fine	
4 mm	Sand	Coarse	Sand
1 mm		Medium	
¼ mm		Fine	
$\frac{1}{16}$mm	Fines (silt and clay)		Fines

Block Calculation — 1:25 000 Block } Fictitious

Area
- Block: 11.08 km^2
- Mineral: 8.32 km^2

Volume
- Overburden: 21 million m^3
- Mineral: 54 million m^3

Mean Thickness
- Overburden: 2.5 m
- Mineral: 6.5 m

Confidence limits of the estimate of mineral volume at the 95 per cent probability level: ± 20 per cent
That is, the volume of mineral (with 95 per cent probability): 54 ± 11 million m^3

Thickness estimate: measurements in metres
l_o = overburden thickness l_m = mineral thickness

Sample point	Weighting w	Overburden l_o	Overburden wl_o	Mineral l_m	Mineral wl_m	Remarks
SE 14	1	1.5	1.5	9.4	9.4	MAU boreholes
SE 18	1	3.3	3.3	5.8	5.8	
SE 20	1	nil	-	6.9	6.9	
SE 22	1	0.7	0.7	6.4	6.4	
SE 23	1	6.2	6.2	4.1	4.1	
SE 24	1	4.3	4.3	6.4	6.4	
SE 17	½	1.2	1.6	9.8	7.2	Hydrogeological Dept record
123/45	½	2.0		4.6		
1	¼	2.7	2.5	7.3	5.8	Close group of four boreholes (commercial)
2	¼	4.5		3.2		
3	¼	0.4		6.8		
4	¼	2.8		5.9		
Totals	$\Sigma w = 8$	$\Sigma wl_o = 20.1$		$\Sigma wl_m = 52.0$		
Means		$\bar{l}_o = 2.5$		$\bar{l}_m = 6.5$		

Calculation of confidence limits

l_m	$(l_m - \bar{l}_m)$	$(l_m - \bar{l}_m)^2$
9.4	2.9	8.41
5.8	0.7	0.49
6.9	0.4	0.16
6.4	0.1	0.01
4.1	2.4	5.76
6.4	0.1	0.01
7.2	0.7	0.49
5.8	0.7	0.49

$\Sigma(l_m - \bar{l}_m)^2 = 15.82$

$n = 8$

$t = 2.365$

L_V is calculated as

$$1.05 \times \frac{t}{\bar{l}_m} \sqrt{\frac{\Sigma(l_m - \bar{l}_m)^2}{n(n-1)}} \times 100$$

$$= 1.05 \times \frac{2.365}{6.5} \sqrt{\frac{15.82}{8 \times 7}} \times 100$$

$$= 20.3$$

$$\simeq 20 \text{ per cent}$$

Fig. 5. Example of resource block assessment: calculation and results

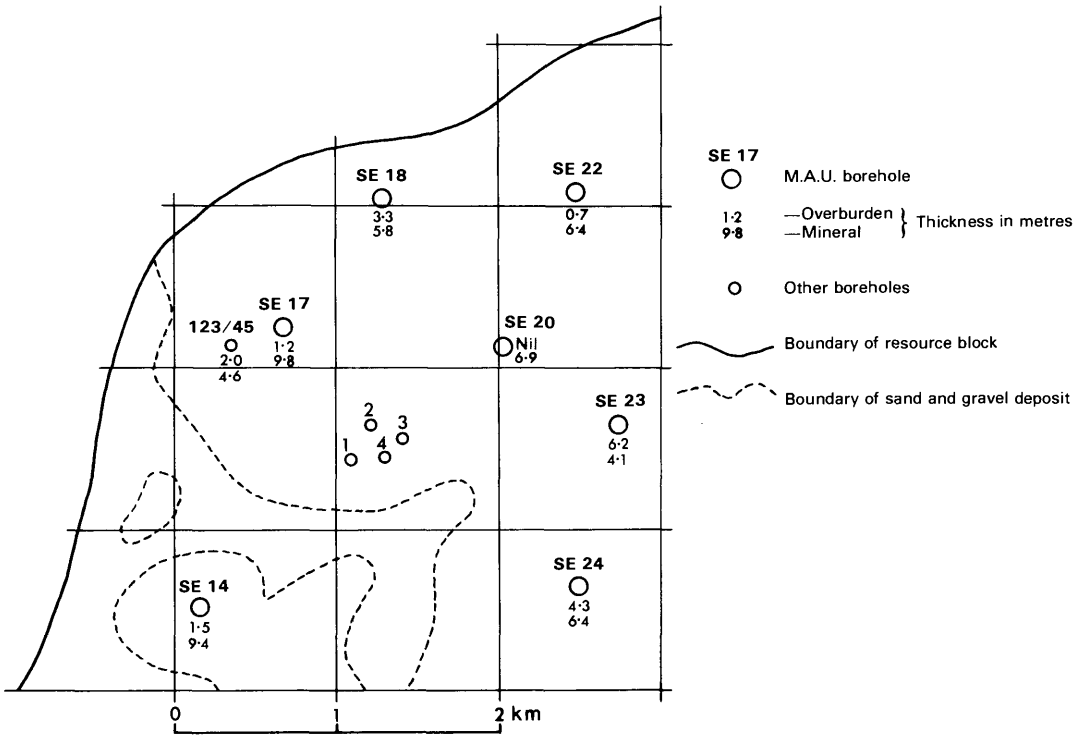
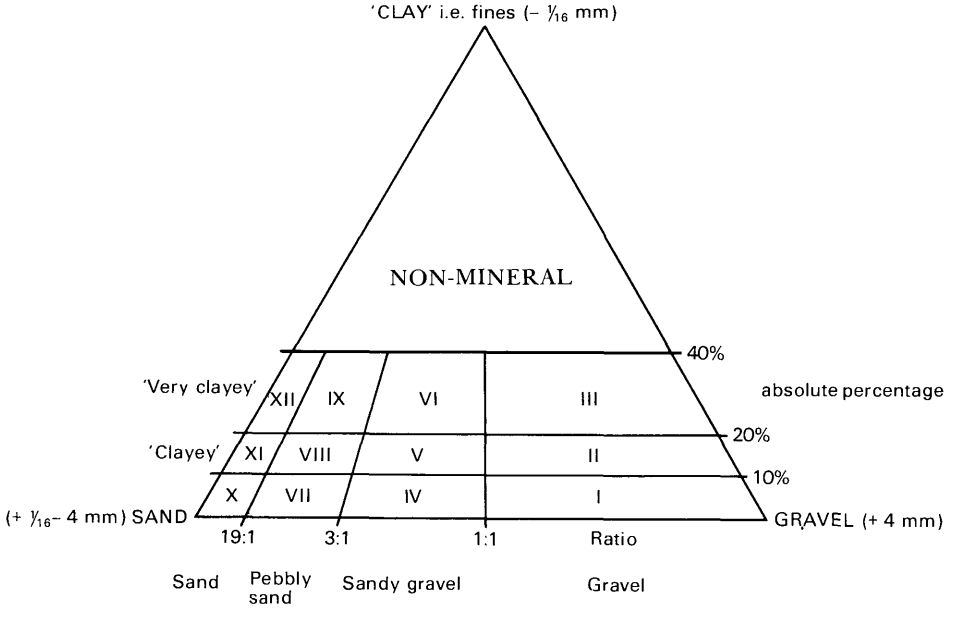


Fig. 6. Example of resource block assessment: map of a fictitious block



I	Gravel	VII	Pebbly sand
II	'Clayey' gravel	VIII	'Clayey' pebbly sand
III	'Very clayey' gravel	IX	'Very clayey' pebbly sand
IV	Sandy gravel	X	Sand
V	'Clayey' sandy gravel	XI	'Clayey' sand
VI	'Very clayey' sandy gravel	XII	'Very clayey' sand

Fig. 7. Diagram to show the descriptive categories used in the classification of sand and gravel

Appendix D: Explanation of the Borehole Records

ANNOTATED EXAMPLE

SU 66 NW 5[1] 6191 6962[2] Near Three Kings Jack's Booth,[3] Sulhamstead Block C

Surface level (+49.7 m) +163 ft[4]
Water struck at +45.7 m[5]
Shell and auger (modified) 6 in (152 mm) diameter[6]
October 1972

[7] Overburden 1.3 m (4.5 ft)
Mineral 4.4 m (14.5 ft)
Bedrock 0.6 m+ (2.0 ft+)[9]

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth[8] m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
[10]River Terrace Deposits (undifferentiated)	[11]Clay, sandy, with a trace of gravel	1.1	(3.5)	1.3	(4.5)
	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, mainly subangular flint with some quartz and quartzite Sand: medium and coarse, with some fine, quartz and flint	4.4	(14.5)	5.7	(18.5)
Reading Beds	Clay, silty, mottled grey, blue and red	0.6+	(2.0+)	6.3	(20.5)

GRADING

Mean for Deposit

	%	mm	%
[15]Gravel	65	+16	29
		-16+4	36
Sand	25	-4+1	11
		-1+¼	12
		-¼+1/16	2
Fines	10	-1/16	10

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
[12]1.3 - 1.9	[13]19	22	59
1.9 - 2.9	11	21	68
2.9 - 3.9	9	31	60
*3.9 - 4.9	8	27	65
*4.9 - 5.4	[14][8	27	65]

The numbered paragraphs below correspond with the annotations given on the specimen record above.

1. Borehole Registration Number
Each Mineral Assessment Unit (MAU) borehole is identified by a Registration Number. This consists of two statements.
   1) The number of the 1:25 000 sheet on which the borehole lies, for example, SU 56.
   2) The quarter of the 1:25 000 sheet on which the borehole lies and its number in a series for that quarter, for example SE 4.

Thus the full Registration Number is SU 56 SE 4. Usually this is abbreviated to 56 SE 4 in the text.

2. The National Grid Reference
All National Grid References in this publication lie within the 100 km square SU unless otherwise stated. Grid references are given to eight figures, accurate to within 10 m for borehole locations. (In the text, six-figure grid refences are used for more approximate locations, for example, for farms).

3. Location
The position of the borehole is generally referred to the nearest named locality on the 1:25 000 base map and the resource block in which it lies is stated.

4. Surface Level
The surface level at the borehole site is given in metres and feet above Ordnance Datum. All measurements were made in feet; approximate conversions to metres are given in brackets.

5. Groundwater Conditions
If groundwater was present the level at which it was encountered is normally given (in metres

above Ordnance Datum).

6. Type of Drill and Date of Drilling
Modified shell and auger rigs were used in this survey. The type of machine, the external diameter of the casing used, and the month and year of completion of the borehole are stated.

7. Overburden, Mineral, Waste and Bedrock
Mineral is sand and gravel which, as part of a deposit, falls within the arbitrary definition of potentially workable material (see p. 1). Bedrock is the 'formation', 'country rock' or 'rock head' below which potentially workable sand and gravel will not be found.
Waste is any material other than bedrock or mineral. Where waste occurs between the surface and mineral it is classified as overburden.

8. Thickness and Depth
All measurements were made in metres. Imperial conversions appear in brackets. Imperial conversions of measurements of the thicknesses of beds and the depth from the surface of their bases have been rounded off to the nearest 0.5 ft because a more detailed quotation would imply a higher order of accuracy than could be justified by the original figures. Where figures have been rounded in this way there may be a discrepancy between the sum of the thicknesses and the recorded depths.

9. The plus sign (+) indicates that the base of the deposit was not reached during drilling.

10. Geological Classification
The geological classification (p.5) is given whenever possible.

11. Lithological Description
When sand and gravel is recorded a general description based on the mean grading characteristics (for details see Appendix C) is followed by more detailed particulars. The description of other rocks is based on visual examination, in the field.

12. Sampling
A continuous series of bulk samples is taken throughout the thickness of sand and gravel. A new sample is commenced whenever there is an appreciable lithological change within the sand and gravel or at every 1 m of depth. Samples obtained by the baling technique (that is, from deposits below the water table) are indicated by an asterisk.

13. Grading Results
The limits are as follows: gravel, +4 mm; sand, -4+1/16 mm; fines, -1/16 mm.

14. If, exceptionally, grading results are not available, an attempt is made to give grading information by comparing the grading and field descriptions of adjacent samples with the samples in question. Such estimates are shown in brackets.

15. Mean Grading
The grading of the full thickness of the mineral horizon identified in the log is the mean of the individual sample gradings weighted by the thicknesses represented, if these vary. The classification used is shown in Table 9.

Fully representative sampling of sand and gravel is difficult to achieve particularly where groundwater levels are high. Comparison between boreholes and adjacent exposures suggests that in borehole samples the proportion of sand may be higher and the proportions of fines and coarse gravel (+16 mm) may be lower.

Appendix E: List of Boreholes Used in the Assessment of Resources

MINERAL ASSESSMENT UNIT BOREHOLES

Borehole number by sheet quadrant		Grid references (all fall in 100 km square SU)
56 NW	20	5016 6722
(pp. 22-30)	21	5055 6660
	22	5177 6683
	23	5137 6606
	24	5236 6707
	25	5282 6673
	26	5371 6907
	27	5484 6865
	28	5458 6684
	29	5479 6614
56 SW	4	5038 6459
(pp.31-39)	5	5167 6449
	6	5139 6370
	7	5129 6247
	8	5259 6447
	9	5209 6383
	10	5386 6467
	11	5320 6329
	12	5477 6442
	13	5405 6349
66 NW	2	6050 6784
(pp.56-70)	3	6097 6692
	4	6071 6556
	5	6191 6962
	6	6144 6899
	7	6161 6797
	8	6191 6572
	9	6226 6916
	10	6257 6724
	11	6381 6830
	12	6345 6709
	13	6360 6615
	14	6482 6985
	15	6450 6681
	16	6456 6509

Borehole number by sheet quadrant		Grid references (all fall in 100 km square SU)
56 NE	5	5564 6908
(pp.40-51)	6	5555 6650
	7	5547 6538
	8	5633 6819
	9	5605 6664
	10	5660 6626
	11	5646 6513
	12	5759 6514
	13	5833 6602
	14	5863 6549
	15	5900 6895
	16	5901 6665
	17	5901 6627
56 SE	18	5590 6217
(pp. 51-55)	19	5686 6330
	20	5734 6252
	21	5841 6274
	22	5952 6271
66 SW	6	6074 6447
(pp.71-80)	7	6086 6230
	8	6141 6426
	9	6155 6345
	10	6290 6483
	11	6232 6406
	12	6286 6232
	13	6338 6424
	14	6389 6299
	15	6464 6441
66 SE	1	6568 6483
(p.81)		

Appendix F: Mineral Assessment Unit Borehole Records

SU 56 NW 20 5016 6722 Near Thatcham Farm, Thatcham Block B

Surface level (+75.3 m) +247 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 4.5 m (15.0 ft)
Mineral 1.9 m (6.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
Made ground		3.0	(10.0)	3.0	(10.0)
River Terrace Deposits (undifferentiated)	Clay, silty and sandy	0.8	(2.5)	3.8	(12.5)
	Sand, clayey, with a trace of flint gravel	0.7	(2.5)	4.5	(15.0)
	Gravel Gravel: fine to coarse sub-angular to subrounded flint Sand: medium and coarse with fine quartz and some flint	1.9	(6.0)	6.4	(21.0)
Reading Beds	Clay, sandy, mottled dark green and orange-brown	0.3	(1.0)	6.7	(22.0)
	Sand, medium grained	0.2+	(0.5+)	6.9	(22.5)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	60	+16	27	4.5 - 5.5	6	26	68
		-16 + 4	33	5.5 - 6.4	6	43	51
		- 4 + 1	10				
Sand	34	- 1 + $\frac{1}{4}$	16				
		- $\frac{1}{4}$ + 1/16	8				
Fines	6	- 1/16	6				

SU 56 NW 21 5055 6660 Near Widmead Lock, Thatcham Block B

Surface level (+68.3 m) +224 ft
Water struck at +65.8 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 2.5 m (8.0 ft)
Mineral 4.3 m (14.0 ft)
Bedrock 1.4 m+ (4.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
Made ground		1.4	(4.5)	1.4	(4.5)
Alluvium	Peat, silty	1.1	(3.5)	2.5	(8.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, subangular to subrounded flint with traces of rounded quartzite Sand: medium with coarse and fine quartz	4.3	(14.0)	6.8	(22.5)
Reading Beds	Clay, mottled grey and greyish green	1.4+	(4.5+)	8.2	(27.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	54	+16	31
		-16 + 4	23
		- 4 + 1	8
Sand	42	- 1 + $\frac{1}{4}$	28
		- $\frac{1}{4}$ + 1/16	6
Fines	4	- 1/16	4

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*2.5 - 3.5	1	36	63
*3.5 - 4.5	3	42	55
*4.5 - 5.5	2	37	61
*5.5 - 6.4	6	34	40
*6.4 - 6.8	18	82	0

SU 56 NW 22 5177 6683 Thatcham Farm, Thatcham Block B

Surface level (+69.8 m) +229 ft
Water struck at +67.9 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.6 m (2.0 ft)
Mineral 3.3 m (11.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Alluvium	Clay, sandy	0.3	(1.0)	0.6	(2.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, trace of cobbles, subangular to subrounded flint with a trace of well rounded quartz and quartzite Sand: medium with coarse and fine quartz	3.3	(11.0)	3.9	(13.0)
Reading Beds	Clay, mottled red and grey	0.5+	(1.5+)	4.4	(14.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	68	+16	37
		-16 + 4	31
		- 4 + 1	9
Sand	26	- 1 + $\frac{1}{4}$	14
		- $\frac{1}{4}$ + 1/16	3
Fines	6	- 1/16	6

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.6 - 1.6	9	24	67
*1.6 - 2.6	7	29	64
*2.6 - 3.9	2	27	71

SU 56 NW 23 5137 6606 Chamberhouse Farm, Thatcham Block B

Surface level (+66.8 m) +219 ft
Water struck at +65.8 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 1.5 m (5.0 ft)
Mineral 3.1 m (10.0 ft)
Bedrock 0.5 m+ (1.5+ ft)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Silt, with sand and clay	1.3	(4.5)	1.5	(5.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, angular to well rounded flint Sand: coarse with medium and fine flint and quartz	3.1	(10.0)	4.6	(15.0)
Reading Beds	Clay, mottled red and grey	0.5+	(1.5+)	5.1	(17.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	77	+16	39
		-16 + 4	38
		- 4 + 1	13
Sand	22	- 1 + $\frac{1}{4}$	7
		- $\frac{1}{4}$ + 1/16	2
Fines	1	- 1/16	1

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
*1.5 - 2.5	2	23	75
*2.5 - 3.5	1	20	79
*3.5 - 4.6	1	21	78

SU 56 NW 24 5236 6707 Near Thatcham House, Thatcham Block B

Surface level (+71.6 m) +235 ft
Water struck at +69.6 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.4 m (1.5 ft)
Mineral 4.3 m (14.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
River Terrace Deposits (undifferentiated)	'Clayey' sandy gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint with a trace of quartz and quartzite Sand: medium with coarse and some fine quartz	4.3	(14.0)	4.7	(15.5)
Reading Beds	Clay, mottled red and grey	0.5+	(1.5+)	5.2	(17.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	44	+16	13
		-16 + 4	31
		- 4 + 1	15
Sand	46	- 1 + $\frac{1}{4}$	27
		- $\frac{1}{4}$ + 1/16	4
Fines	10	- 1/16	10

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
0.4 - 1.4	22	37	41
1.4 - 2.4	10	28	62
*2.4 - 3.4	7	63	30
*3.4 - 4.7	2	55	43

SU 56 NW 25 5282 6673 Pipers Farm, Thatcham Block B

Surface level (+67.4 m) +221 ft
Water struck at +66.3 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.9 m (3.0 ft)
Mineral 3.9 m (13.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Silt and clay, sandy	0.8	(2.5)	0.9	(3.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, angular to rounded flint Sand: medium and coarse, trace of fine, quartz	3.9	(13.0)	4.8	(16.0)
Reading Beds	Clay, mottled red and grey	0.5+	(1.5+)	5.3	(17.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	74	+16	41
		-16 + 4	33
		- 4 + 1	11
Sand	23	- 1 + $\frac{1}{4}$	11
		- $\frac{1}{4}$ + 1/16	1
Fines	3	- 1/16	3

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*0.9 - 1.9	2	23	75
*1.9 - 2.9	2	17	81
*2.9 - 3.9	2	24	74
*3.9 - 4.8	4	29	67

SU 56 NW 26 5371 6907 Turner's Green, Upper Bucklebury Block A

Surface level (+131.1 m) +430 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.1 m (0.5 ft)
Mineral 2.2 m (7.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	'Very clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: medium and coarse with fine quartz and flint	2.2	(7.0)	2.3	(7.5)
Lower Bagshot Beds	Clay, sandy, orange-brown mottled grey	0.5+	(1.5+)	2.8	(9.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	60	+16	37
		-16 + 4	23
		- 4 + 1	5
Sand	14	- 1 + ¼	6
		- ¼ + 1/16	3
Fines	26	- 1/16	26

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.1 - 0.6	10	5	85
0.6 - 1.6	42	12	46
1.6 - 2.3	16	21	63

SU 56 NW 27 5484 6865 Tomlin's Farm, Upper Bucklebury Block A

Surface level (+132.9 m) +436 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.1 m (0.5 ft)
Mineral 2.1 m (7.0 ft)
Bedrock 0.5 m (1.5 ft)

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse sub-angular to rounded flint Sand: medium with coarse and fine quartz and flint	2.1	(7.0)	2.2	(7.0)
Lower Bagshot Beds	Clay, silty and sandy, mottled orange brown and grey	0.5+	(1.5+)	2.7	(9.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	67	+16	35	0.1 - 0.7	16	11	73
		-16 + 4	32	0.7 - 2.2	14	22	64
		- 4 + 1	5				
Sand	18	- 1 + $\frac{1}{4}$	9				
		- $\frac{1}{4}$ + 1/16	4				
Fines	15	- 1/16	15				

SU 56 NW 28 5458 6684 Kennetholme, Midgham Block B

Surface level (+69.1 m) +227 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Waste 2.7 m (9.0 ft)
Bedrock 2.7 m+ (9.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
	?Made ground, mainly sandy clay with fine to coarse flint gravel	2.4	(8.0)	2.7	(9.0)
London Clay	Clay, sandy and silty, grey and brown, passing to greyish blue	2.7+	(9.0+)	5.4	(18.0)

SU 56 NW 29 5479 6614 Near Midgham Marsh, Midgham Block B

Surface level (+62.8 m) +206 ft
Water struck at +60.0 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.8 m (2.5 ft)
Mineral 2.8 m (9.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
Made ground		0.8	(2.5)	0.8	(2.5)
River Terrace Deposits (undifferentiated)	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint and trace of quartzite Sand: medium and coarse with some fine flint and quartz	2.8	(9.0)	3.6	(12.0)
London Clay	Clay, black, scattered gastropods	0.5+	(1.5+)	4.1	(13.5)

GRADING

	Mean for Deposit %	mm	%
Gravel	50	+16	22
		-16 + 4	28
		- 4 + 1	13
Sand	40	- 1 + $\frac{1}{4}$	21
		- $\frac{1}{4}$ + 1/16	6
Fines	10	- 1/16	10

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
0.8 - 1.8	4	47	49
*1.8 - 2.8	3	41	56
*2.8 - 3.6	25	32	43

SU 56 SW 4 5038 6459 Greenham Common Airfield, Greenham Block A

Surface level (+118.0 m) +387 ft
Water struck at +113.9 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 0.1 m (0.5 ft)
Mineral 6.6 m (21.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, angular to rounded flint with some rounded quartz Sand: medium and coarse with some fine quartz and flint	6.6	(21.5)	6.7	(22.0)
Lower Bagshot Beds	Clay, sandy, orange-brown	0.5+	(1.5+)	7.2	(23.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	63	+16	28
		-16 + 4	35
		- 4 + 1	9
Sand	24	- 1 + $\frac{1}{4}$	11
		- $\frac{1}{4}$ + 1/16	4
Fines	13	- 1/16	13

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.1 - 1.7	14	22	64
1.7 - 3.5	12	22	66
3.5 - 4.6	14	28	58
4.6 - 5.4	11	24	65
5.4 - 6.7	17	23	60

SU 56 SW 5 5167 6449 Greenham Common Airfield, Greenham Block A

Surface level (+115.5 m) +379 ft
Water struck at +109.1 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 0.2 m (0.5 ft)
Mineral 6.2 m (20.5 ft)
Bedrock 0.6 m+ (2.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth m	(ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, mainly subangular to subrounded flint Sand: medium with coarse and fine quartz and flint	6.2	(20.5)	6.4	(21.0)
Lower Bagshot Beds	Sand, clayey, orange-brown, mottled grey	0.6+	(2.0+)	7.0	(23.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	58	+16	29
		-16 + 4	29
		- 4 + 1	8
Sand	28	- 1 + $\frac{1}{4}$	14
		- $\frac{1}{4}$ + 1/16	6
Fines	14	- 1/16	14

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.2 - 1.2	15	27	58
1.2 - 2.3	23	28	49
2.3 - 3.4	18	30	52
3.4 - 4.5	6	33	61
4.5 - 5.5	11	29	60
5.5 - 6.4	10	24	66

SU 56 SW 6 5139 6370 Knightsbridge Farm, Headley Block D

Surface level (+70.6) +232 ft
Water struck at +67.8 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 2.8 m (9.0 ft)
Mineral 1.9 m (6.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty	2.1	(7.0)	2.3	(7.5)
	Peat, silty	0.5	(1.5)	2.8	(9.0)
River Terrace Deposits (undifferentiated)	'Clayey' gravel Gravel: fine to coarse sub-angular to rounded flint Sand: medium with coarse and fine quartz and flint	1.9	(6.0)	4.7	(15.5)
London Clay	Clay, silty, greyish brown	0.5+	(1.5+)	5.2	(17.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	54	+16	22
		-16 + 4	32
		- 4 + 1	10
Sand	33	- 1 + $\frac{1}{4}$	20
		- $\frac{1}{4}$ + 1/16	3
Fines	13	- 1/16	13

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*2.8 - 3.8	15	41	44
*3.8 - 4.7	10	26	64

SU 56 SW 7 5129 6247 Headley Farm, Headley Block A

Surface level (+113.4 m) +372 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.4 m (1.5 ft)
Mineral 4.9 m (16.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: medium with coarse and fine quartz and flint	4.9	(16.0)	5.3	(17.5)
Lower Bagshot Beds	Clay, sandy, orange-brown mottled reddish brown and grey	0.5+	(1.5+)	5.8	(19.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	55	+16	20
		-16 + 4	35
		- 4 + 1	7
Sand	31	- 1 + $\frac{1}{4}$	19
		- $\frac{1}{4}$ + 1/16	5
Fines	14	- 1/16	14

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
0.4 - 1.2	10	31	59
1.2 - 2.2	29	30	41
2.2 - 3.2	7	43	50
3.2 - 4.2	11	15	74
4.2 - 5.3	14	33	53

SU 56 SW 8 5259 6447 Crookham Common, Thatcham Block A

Surface level (+114.6 m) +376 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 0.8 m (2.5 ft)
Mineral 5.4 m (18.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	Clay, silty, with scattered flint pebbles	0.5	(1.6)	0.8	(2.6)
	'Clayey' gravel Gravel: fine to coarse, subangular to rounded flint Sand: medium with fine and coarse quartz and flint	5.4	(17.7)	6.2	(20.3)
Lower Bagshot Beds	Clay, silty and sandy, mottled light brown, and orange-brown	0.5+	(1.5+)	6.7	(22.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	48	+16	23
		-16 + 4	25
		- 4 + 1	9
Sand	35	- 1 + $\frac{1}{4}$	16
		- $\frac{1}{4}$ + 1/16	10
Fines	17	- 1/16	17

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
0.8 - 1.8	18	11	71
1.8 - 2.8	11	26	63
2.8 - 3.9	13	35	52
3.9 - 5.0	15	39	46
5.0 - 6.2	29	62	9

SU 56 SW 9 5209 6383 Thornford Bridge, Headley Block D

Surface level (+70.4 m) +231 ft
Water struck at +68.7 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 1.7 m (5.5 ft)
Mineral 2.9 m (9.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty and sandy, with trace of gravel	1.5	(5.0)	1.7	(5.5)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, subangular to rounded flint Sand: medium and coarse with some fine quartz and flint	2.9	(9.5)	4.6	(15.0)
London Clay	Clay, bluish grey	0.5+	(1.5+)	5.1	(17.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	67	+16	26
		-16 + 4	41
		- 4 + 1	11
Sand	27	- 1 + $\frac{1}{4}$	14
		- $\frac{1}{4}$ + 1/16	2
Fines	6	- 1/16	6

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*1.7 - 2.7	3	20	77
*2.7 - 3.7	9	33	58
*3.7 - 4.6	[6	27	47]

SU 56 SW 10 5386 6467 Near Model Cottages, Crookham Block A

Surface level (+105.8 m) +347 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Waste 1.4 m (4.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness ft	Depth m	Depth ft
	Soil	0.5	(1.5)	0.5	(1.5)
Plateau Gravel	Sand and gravel, clayey	0.4	(1.5)	0.9	(3.0)
	Clay, sandy, with scattered pebbles	0.5	(1.5)	1.4	(4.5)
Lower Bagshot Beds	Clay, sandy, orange-brown	0.5+	(1.5+)	1.9	(6.0)

SU 56 SW 11 5320 6329 Near Stonylands Copse, Goose Hill Block D

Surface level (+66.8 m) +219 ft
Water struck at +63.8 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 3.0 m (10.0 ft)
Mineral 1.3 m (4.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Sand and gravel, with clay	0.7	(2.5)	0.9	(3.0)
	Clay, silty, with scattered flint pebbles	2.1	(7.0)	3.0	(10.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: medium and coarse with fine quartz and flint	1.3	(4.5)	4.3	(14.0)
London Clay	Clay, brown, passing to bluish grey	0.5+	(1.5+)	4.8	(16.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	88	+16	64	*3.0 - 4.3	3	9	88
		-16 + 4	24				
		- 4 + 1	3				
Sand	9	- 1 + $\frac{1}{4}$	5				
		- $\frac{1}{4}$ + 1/16	1				
Fines	3	- 1/16	3				

SU 56 SW 12 5477 6442 Stone House, Crookham Block A

Surface level (+102.4 m) +336 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.1 m (0.5 ft)
Mineral 5.6 m (18.5 ft)
Bedrock 0.6 m+ (2.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth m	(ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	Gravel Gravel: fine to coarse, with some cobbles, sub-angular to rounded flint and a trace of quartz and quartzite Sand: medium with some coarse and fine quartz and flint	5.6	(18.5)	5.7	(18.5)
Lower Bagshot Beds	Clay, sandy, light brown and grey	0.6+	(2.0+)	6.3	(20.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	62	+16	28
		-16 + 4	34
		- 4 + 1	6
Sand	29	- 1 + $\frac{1}{4}$	19
		- $\frac{1}{4}$ + 1/16	4
Fines	9	- 1/16	9

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.1 - 0.9	21	14	65
0.9 - 1.9	4	32	64
1.9 - 2.9	6	34	60
2.9 - 3.9	4	26	70
3.9 - 4.9	13	32	55
4.9 - 5.7	6	37	57

SU 56 SW 13 5405 6349 Near Flaggy Copse, Goose Hill Block D

Surface level (+66.9 m) +226 ft
Water struck at +62.7 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 2.6 m (8.5 ft)
Mineral 2.5 m (8.0 ft)
Bedrock 0.9 m+ (3.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
	Clay, sandy, with flint pebbles	2.3	(7.5)	2.6	(8.5)
River Terrace Deposits (undifferentiated)	'Very clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint with a trace of sandstone Sand: medium with coarse and fine quartz and flint	2.5	(8.0)	5.1	(17.0)
London Clay	Clay, brown and grey passing to dark grey	0.9+	(3.0+)	6.0	(19.5)

GRADING

	Mean for Deposit %	mm	%
Gravel	58	+16	29
		-16 + 4	29
		- 4 + 1	7
Sand	21	- 1 + $\frac{1}{4}$	11
		- $\frac{1}{4}$ + 1/16	3
Fines	21	- 1/16	21

Bulk Samples	Percentages		
Depth below surface (m)	Fines	Sand	Gravel
2.6 - 2.9	20	22	58
2.9 - 3.9	22	19	59
*3.9 - 5.1	21	21	58

SU 56 NE 5 5564 6908 Bucklebury Common, Bucklebury Block A

Surface level (+130.5 m) +428 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.1 m (0.5 ft)
Mineral 5.8 m (19.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, subangular to rounded flint Sand: medium and coarse with some fine quartz and flint	5.8	(19.0)	5.9	(19.5)
Lower Bagshot Beds	Sand, silty, orange-brown	0.5+	(1.5+)	6.4	(21.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	59	+16	29				
		-16 + 4	30	0.1 - 0.8	13	14	73
				0.8 - 1.8	15	22	63
		- 4 + 1	10	1.8 - 2.8	13	20	67
Sand	23	- 1 + $\frac{1}{4}$	10	2.8 - 3.8	15	19	66
		- $\frac{1}{4}$ + 1/16	3	3.8 - 4.8	12	29	59
				4.8 - 5.9	39	26	35
Fines	18	- 1/16	18				

SU 56 NE 6 5555 6650 Midgham Marsh, Midgham Block B

Surface level (+62.5 m) +205 ft
Water struck at +59.8 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.5 m (1.5 ft)
Mineral 4.6 m (15.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Clay, sandy	0.4	(1.5)	0.5	(1.5)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint with a trace of quartzite Sand: medium and coarse with some fine flint and quartz	4.6	(15.0)	5.1	(17.0)
London Clay	Clay, dark grey, slightly sandy	0.5+	(1.5+)	5.6	(18.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	64	+16	33
		-16 + 4	31
		- 4 + 1	12
Sand	31	- 1 + $\frac{1}{4}$	16
		- $\frac{1}{4}$ + 1/16	3
Fines	5	- 1/16	5

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.5 - 1.5	7	25	68
*1.5 - 2.5	10	32	58
*2.5 - 3.5	4	38	58
*3.5 - 4.5	3	35	62
*4.5 - 5.1	1	19	80

SU 56 NE 7 5547 6538 Manor Farm, Brimpton Block B

Surface level (+69.8 m) +229 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.7 m (2.5 ft)
Mineral 4.2 m (14.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
River Terrace Deposits (undifferentiated)	Clay, silty and sandy, with flint gravel	0.6	(2.0)	0.7	(2.5)
	'Clayey' gravel Gravel: fine to coarse, angular to rounded flint Sand: medium and coarse with some fine quartz and flint	4.2	(14.0)	4.9	(16.0)
London Clay	Clay, sandy, dark grey	0.5+	(1.5+)	5.4	(18.0)

GRADING

Mean for Deposit				Bulk Samples			
	%	mm	%	Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	64	+16	28	0.7 - 1.7	12	22	66
		-16 + 4	36	1.7 - 2.7	10	29	61
				2.7 - 3.7	7	27	66
		- 4 + 1	11	3.7 - 4.9	12	23	65
Sand	26	- 1 + $\frac{1}{4}$	12				
		- $\frac{1}{4}$ + 1/16	3				
Fines	10	- 1/16	10				

SU 56 NE 8 5633 6819 Near Bucklebury Place, Bucklebury Block A

Surface level (+126.2 m) +414 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Waste 3.6 m (12.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil and subsoil	0.6	(2.0)	0.6	(2.0)
Plateau Gravel	Sand and gravel, clayey	0.3	(1.0)	0.9	(3.0)
	Clay, silt and sand with scattered flint pebbles	0.8	(2.5)	1.7	(5.5)
	Silt and sand, with fine to coarse flint gravel	1.9	(6.0)	3.6	(12.0)
Lower Bagshot Beds	Sand, fine grained, clayey	0.5+	(1.5+)	4.1	(13.5)

SU 56 NE 9 5605 6664 Midgham Park, Midgham Block B

Surface level (+61.6 m) +202 ft
Water struck at +55.1 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 2.4 m (8.0 ft)
Mineral 4.6 m (15.0 ft)
Bedrock 2.0 m+ (6.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
River Terrace Deposits (undifferentiated)	Clay slightly silty, mottled orange-brown and brown, with traces of flint gravel	1.9	(6.0)	2.1	(7.0)
	Clay, silt, sand and gravel	0.3	(1.0)	2.4	(8.0)
	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint with a trace of rounded quartz Sand: coarse and medium flint and quartz	4.6	(15.0)	7.0	(23.0)
London Clay	Clay, sandy, black to grey	2.0+	(6.5+)	9.0	(29.5)

GRADING

	Mean for Deposit %	mm	%
Gravel	62	+16	28
		-16 + 4	34
		- 4 + 1	14
Sand	26	- 1 + $\frac{1}{4}$	12
		- $\frac{1}{4}$ + 1/16	0
Fines	12	- 1/16	12

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
2.4 - 3.4	12	21	67
3.4 - 4.4	10	25	65
4.4 - 5.4	10	33	57
5.4 - 6.4	6	19	75
*6.4 - 7.0	25	36	39

SU 56 NE 10 5660 6626 Near Warren Farm, Brimpton Block B

Surface level (+57.0 m) +187 ft
Water struck at +55.1 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 1.9 m (6.0 ft)
Mineral 7.9 m (26.0 ft)
Bedrock 0.6 m+ (2.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.5	(1.5)	0.5	(1.5)
Alluvium	Clay, silty, grey	1.0	(3.5)	1.5	(5.0)
	Clay, silty, black and peaty	0.4	(1.5)	1.9	(6.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, angular to rounded flint Sand: medium and coarse flint and quartz	7.9	(26.0)	9.8	(32.0)
London Clay	Clay, mottled grey and red	0.6+	(2.0+)	10.4	(34.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	86	+16	53	*1.9 - 2.9	2	20	78
		-16 + 4	33	*2.9 - 3.9	1	10	89
				*3.9 - 4.9	2	8	90
		- 4 + 1	6	*4.9 - 5.9	1	11	88
Sand	12	- 1 + $\frac{1}{4}$	6	*5.9 - 6.9	2	23	75
		- $\frac{1}{4}$ + 1/16	0	*6.9 - 7.9	2	13	85
				*7.9 - 8.9	3	9	88
Fines	2	- 1/16	2	*8.9 - 9.8	2	3	95

SU 56 NE 11 5646 6513 Near Brimpton Lodge, Brimpton Block B

Surface level (+64.9 m) +213 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 0.4 m (1.5 ft)
Mineral 4.6 m (15.0 ft)
Bedrock 0.9 m+ (3.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, a few cobbles, sub-angular to subrounded flint with a trace of quartz and quartzite Sand: medium and coarse with some fine quartz and flint	4.6	(15.0)	5.0	(16.5)
London Clay	Clay, silty at top, light brown passing to brownish black	1.4+	(4.5+)	6.4	(21.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	63	+16	30	0.4 - 1.4	9	14	77
		-16 + 4	33	1.4 - 2.4	8	22	70
				2.4 - 3.4	13	42	55
		- 4 + 1	11	3.4 - 4.4	9	22	69
Sand	23	- 1 + $\frac{1}{4}$	10	4.4 - 5.0	5	23	72
		- $\frac{1}{4}$ + 1/16	2				
Fines	9	- 1/16	9				

SU 56 NE 12 5759 6514 Wasing Lower Farm, Wasing Block C

Surface level (+61.9 m) +203 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 1.4 m (4.5 ft)
Mineral 3.3 m (11.0 ft)
Bedrock 1.7 m+ (5.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
River Terrace Deposits (undifferentiated)	Clay, silt and sand with fine gravel	1.2	(4.0)	1.4	(4.5)
	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint with a trace of quartzite Sand: medium and coarse with some fine quartz and flint	3.3	(11.0)	4.7	(15.5)
London Clay	Clay, greyish black	1.7+	(5.5+)	5.4	(18.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	55	+16	25
		-16 + 4	30
		- 4 + 1	10
Sand	27	- 1 + $\frac{1}{4}$	13
		- $\frac{1}{4}$ + 1/16	4
Fines	18	- 1/16	18

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
1.4 - 2.4	20	25	55
2.4 - 3.4	14	28	58
3.4 - 4.7	20	26	54

SU 56 NE 13 5833 6602 Near Old Mill House, Aldermaston Block C

Surface level (+55.2 m) +181 ft
Water struck at +51.9 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 3.3 m (11.0 ft)
Mineral 4.3 m (14.0 ft)
Bedrock 0.8 m+ (2.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, brown, passing to grey	1.2	(4.0)	1.4	(4.5)
	Clay, silty, black and peaty	1.4	(4.5)	2.8	(9.0)
	Clay, silty, bluish grey	0.5	(1.5)	3.3	(11.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint Sand: coarse and medium flint and quartz	4.3	(14.0)	7.6	(25.0)
London Clay	Clay, grey	0.8+	(2.5+)	8.4	(27.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	88	+16	57
		-16 + 4	31
		- 4 + 1	6
Sand	10	- 1 + $\frac{1}{4}$	4
		- $\frac{1}{4}$ + 1/16	0
Fines	2	- 1/16	2

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*3.3 - 4.3	2	3	95
*4.3 - 5.3	3	17	80
*5.3 - 6.3	2	16	82
*6.3 - 7.6	1	6	93

SU 56 NE 14 5863 6549 Near Wasing Lodge, Aldermaston Block C

Surface level (+56.4 m) +185 ft
Water struck at +53.9 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 0.4 m (1.5 ft)
Mineral 4.2 m (14.0 ft)
Bedrock 0.7 m+ (2.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
River Terrace Deposits (undifferentiated)	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint with a trace of quartz and quartzite Sand: medium and coarse with some fine quartz and flint	4.2	(14.0)	4.6	(15.5)
London Clay	Clay, greyish black	0.7+	(2.5+)	5.3	(17.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	69	+16	33
		-16 + 4	36
		- 4 + 1	9
Sand	21	- 1 + $\frac{1}{4}$	10
		- $\frac{1}{4}$ + 1/16	2
Fines	10	- 1/16	10

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.4 - 1.5	21	16	63
1.5 - 2.5	13	23	64
*2.5 - 3.5	3	18	79
*3.5 - 4.6	4	25	71

SU 56 NE 15 5900 6895 Awbery's Farm, Beenham Block A

Surface level (+105.5 m) +346 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.3 m (1.0 ft)
Mineral 3.4 m (11.0 ft)
Bedrock 4.6 m+ (15.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint with a trace of quartzite Sand: medium and coarse with fine quartz and flint	3.4	(11.0)	3.7	(12.0)
London Clay	Clay, greyish brown to dark grey	0.5+	(1.5+)	4.2	(14.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	57	+16	22
		-16 + 4	35
		- 4 + 1	10
Sand	30	- 1 + $\frac{1}{4}$	16
		- $\frac{1}{4}$ + 1/16	4
Fines	13	- 1/16	13

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.3 - 0.8	22	29	49
0.8 - 1.8	9	31	60
1.8 - 2.8	12	29	59
2.8 - 3.7	14	29	57

SU 56 NE 16 5901 6665 Froud's Bridge, Woolhampton Block C

Surface level (+59.7 m) +196 ft
Water struck at +57.5 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 1.0 m (3.5 ft)
Mineral 3.2 m (10.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
River Terrace Deposits (undifferentiated)	Clay, silty	0.8	(2.5)	1.0	(3.5)
	Gravel	3.2	(10.5)	4.2	(14.0)
	Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint A trace of oolitic lime-stone and shaly mudstone Sand: medium and coarse with some fine flint and quartz				
London Clay	Clay, bluish grey	0.5+	(1.5+)	4.7	(15.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	61	+16	36
		-16 + 4	25
		- 4 + 1	11
Sand	33	- 1 + $\frac{1}{4}$	19
		- $\frac{1}{4}$ + 1/16	3
Fines	6	- 1/16	6

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
1.0 - 2.0	11	37	52
*2.0 - 3.0	4	30	66
*3.0 - 4.2	[4	30	66]

SU 56 NE 17 5901 6627 Old Mill House, Aldermaston Block C

Surface level (+55.2 m) +181 ft
Water struck at +53.8 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.4 m (1.5 ft)
Mineral 4.9 m (16.0 ft)
Bedrock 1.4 m+ (4.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse with some cobbles, angular to rounded flint Sand: medium and coarse with some fine quartz and flint	4.9	(16.0)	5.3	(17.5)
London Clay	Clay, sandy at top, greyish blue	1.4+	(4.5+)	6.7	(22.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	70	+16	30
		-16 + 4	40
		- 4 + 1	10
Sand	24	- 1 + $\frac{1}{4}$	12
		- $\frac{1}{4}$ + 1/16	2
Fines	6	- 1/16	6

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.4 - 1.3	10	21	69
*1.3 - 2.3	12	23	65
*2.3 - 3.3	3	23	74
*3.3 - 4.3	2	23	75
*4.3 - 5.3	1	34	65

SU 56 SE 18 5590 6217 Near Ship Inn, Ashford Hill Block C

Surface level (+64.6 m) +212 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Waste 1.9 m (6.0 ft)
Bedrock 1.6 m+ (5.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, dark brown	0.2	(0.5)	0.4	(1.5)
	Clay, silty, light brown	1.5	(5.0)	1.9	(6.0)
London Clay	Clay, bluish grey	1.6+	(5.5+)	3.5	(11.5)

SU 56 SE 19 5686 6330 Near Boot Farm, Brimpton Block E

Surface level (+106.7 m) +350 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 0.4 m (1.5 ft)
Mineral 2.3 m (7.5 ft)
Bedrock 1.0 m+ (3.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
Plateau Gravel	'Very clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint Sand: medium and coarse with some fine quartz and flint	2.3	(7.5)	2.7	(9.0)
Lower Bagshot Beds	Clay, sandy, mottled orange-brown and grey	1.0+	(3.5+)	3.7	(12.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	53	+16	25	0.4 - 1.5	36	16	48
		-16 + 4	28	1.5 - 2.7	16	26	58
		- 4 + 1	9				
Sand	21	- 1 + $\frac{1}{4}$	10				
		- $\frac{1}{4}$ + 1/16	2				
Fines	26	- 1/16	26				

SU 56 SE 20 5734 6252 Brimpton Common Farm, Brimpton Block E

Surface level (+107.3 m) +352 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 1.2 m (4.0 ft)
Mineral 3.5 m (11.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	Clay, silty, with sand and gravel	0.9	(3.0)	1.2	(4.0)
	'Clayey' gravel Gravel: fine to coarse, sub-angular to subrounded flint Sand: medium with coarse and fine flint and quartz	3.5	(11.5)	4.7	(15.5)
Lower Bagshot Beds	Clay, sandy, orange-brown	0.5+	(1.5+)	5.2	(17.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	61	+16	23
		-16 + 4	38
		- 4 + 1	9
Sand	27	- 1 + $\frac{1}{4}$	13
		- $\frac{1}{4}$ + 1/16	5
Fines	12	- 1/16	12

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
1.2 - 2.2	15	27	58
2.2 - 3.2	15	27	58
3.2 - 4.0	11	23	66
4.0 - 4.7	4	24	72

SU 56 SE 21 5841 6274 Near Oak Plantation, Aldermaston Block E

Surface level (+107.6 m) +353 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 0.7 m (2.5 ft)
Mineral 4.1 m (13.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	Clay, sandy	0.6	(2.0)	0.7	(2.5)
	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium with coarse and fine flint and quartz	4.1	(13.5)	4.8	(16.0)
Lower Bagshot Beds	Clay, sandy	0.5+	(1.5+)	5.3	(17.5)

GRADING

	Mean for Deposit %	mm	%
Gravel	60	+16	29
		-16 + 4	31
		- 4 + 1	8
Sand	26	- 1 + $\frac{1}{4}$	12
		- $\frac{1}{4}$ + 1/16	6
Fines	14	- 1/16	14

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
0.7 - 1.7	29	24	47
1.7 - 2.7	10	22	68
2.7 - 3.7	10	24	66
3.7 - 4.8	7	33	60

SU 56 SE 22 5952 6271 Near New Town, Tadley Block E

Surface level (+103.3 m) +339 ft
Water struck at +101.0 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 2.0 m (6.5 ft)
Mineral 1.0 m (3.5 ft)
Bedrock 3.0 m+ (10.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	Clay, sandy, brown, with trace of flint gravel	0.7	(2.5)	0.8	(2.5)
	Clay and silt, with sand and gravel	1.2	(4.0)	2.0	(6.5)
	'Clayey' gravel Gravel: fine to coarse, sub-angular to subrounded flint Sand: medium with coarse and fine quartz and flint	1.0	(3.5)	3.0	(10.0)
Lower Bagshot Beds	Sand, mainly medium grained, with silt and a little clay	2.8	(9.0)	5.8	(19.0)
London Clay	Clay, greyish blue	0.2+	(0.5+)	6.0	(19.5)

GRADING

	Mean for Deposit %	mm	%
Gravel	61	+16	29
		-16 + 4	32
		- 4 + 1	9
Sand	28	- 1 + $\frac{1}{4}$	12
		- $\frac{1}{4}$ + 1/16	7
Fines	11	- 1/16	11

Bulk Samples	Depth below surface (m)	Percentages Fines	Sand	Gravel
	2.0 - 3.0	11	28	61

SU 66 NW 2 6050 6784 Near Hare and Hounds, Padworth Block C

Surface level (+53.6 m) +176 ft
Water struck at +51.8 m
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.2 m (0.5 ft)
Mineral 3.0 m (10.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil, pebbly	0.2	(0.5)	0.2	(0.5)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: medium and coarse, with some fine, quartz and flint	3.0	(10.0)	3.2	(10.5)
London Clay	Clay, silty, dark brownish grey	0.5+	(1.5+)	3.7	(12.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	79	+16	43
		-16 + 4	36
		- 4 + 1	7
Sand	17	- 1 + $\frac{1}{4}$	8
		- $\frac{1}{4}$ + 1/16	2
Fines	4	- 1/16	4

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.2 - 1.2	9	30	61
1.2 - 2.2	2	16	82
*2.2 - 3.2	2	5	93

SU 66 NW 3 6097 6692 Near Padworth Bridge, Padworth Block C

Surface level (+51.8 m) +170 ft
Water struck at +49.0 m
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 2.8 m (9.0 ft)
Mineral 2.2 m (7.0 ft)
Waste 2.5 m (8.0 ft)
Mineral 5.2 m (17.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification		Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
		Soil	0.2	(0.5)	0.2	(0.5)
Alluvium		Clay, silty, with scattered gastropods	0.7	(2.5)	0.9	(3.0)
		Clay, silty, dark brown to black	0.1	(0.5)	1.0	(3.5)
		Peat, dark brown	1.6	(5.5)	2.6	(8.5)
		Silt, peaty, with scattered gastropods	0.2	(0.5)	2.8	(9.0)
River Terrace Deposits (undifferentiated)	a)	Gravel Gravel: fine to coarse, angular to rounded flint Sand: medium and coarse with some fine	2.2	(7.0)	5.0	(16.5)
		Silt, soft and peaty, brown	2.5	(8.0)	7.5	(24.5)
	b)	Gravel Gravel: fine to coarse, scattered cobbles, angular to rounded flint Sand: coarse and medium flint and quartz	5.2	(17.0)	12.7	(41.5)
London Clay		Clay, silty, stiff, brown	0.5+	(1.5+)	13.2	(43.5)

GRADING

Mean for Deposit

	%	mm	%
a) Gravel	74	+16	55
		-16 + 4	39
		- 4 + 1	8
Sand	23	- 1 + $\frac{1}{4}$	12
		- $\frac{1}{4}$ + 1/16	3
Fines	3	- 1/16	3
b) Gravel	87	+16	48
		-16 + 4	39
		- 4 + 1	7
Sand	11	- 1 + $\frac{1}{4}$	4
		- $\frac{1}{4}$ + 1/16	0
Fines	2	- 1/16	2

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*2.8 - 3.8	4	26	70
*3.8 - 5.0	3	20	77
5.0 - 7.5	Peaty Silt		
*7.5 - 8.5	2	12	86
*8.5 - 9.5	1	21	78
*9.5 - 10.5	1	7	92
*10.5 - 11.5	2	9	89
*11.5 - 12.7	2	7	91

SU 66 NW 4 6071 6556 Upper Church Farm, Aldermaston Block E

Surface level (+89.9 m) +295 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.3 m (1.0 ft)
Mineral 1.1 m (3.5 ft)
Waste 0.6 m (2.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth m	(ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	'Very clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium and coarse, with some fine, flint and quartz	1.1	(3.5)	1.4	(4.5)
	Clay, with fine to coarse flint pebbles	0.6	(2.0)	2.0	(6.5)
Lower Bagshot Beds	Clay, silty and sandy, orange-brown mottled grey	0.5+	(1.5+)	2.5	(8.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	63	+16	29	0.3 - 1.4	19	18	63
		-16 + 4	34				
		- 4 + 1	6				
Sand	18	- 4 + $\frac{1}{4}$	10				
		- $\frac{1}{4}$ + 1/16	2				
Fines	19	- 1/16	19				

SU 66 NW 5 6191 6962 Near Three Kings Jack's Booth, Sulhamstead Block C

Surface level (+49.7 m) +163 ft
Water struck at +45.7 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 1.3 m (4.5 ft)
Mineral 4.4 m (14.5 ft)
Bedrock 0.6 m+ (2.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
River Terrace Deposits (undifferentiated)	Clay, sandy, with a trace of gravel	1.1	(3.5)	1.3	(4.5)
	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, mainly subangular flint with some quartz and quartzite Sand: medium and coarse, with some fine, quartz and flint	4.4	(14.5)	5.7	(18.5)
Reading Beds	Clay, silty, mottled grey, blue and red	0.6+	(2.0+)	6.3	(20.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	65	+16	29
		-16 + 4	36
		- 4 + 1	11
Sand	25	- 1 + $\frac{1}{4}$	12
		- $\frac{1}{4}$ + 1/16	2
Fines	10	- 1/16	10

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
1.3 - 1.9	19	22	59
1.9 - 2.9	11	21	68
2.9 - 3.9	9	31	60
*3.9 - 4.9	8	27	65
*4.9 - 5.4	[8	27	65]

SU 66 NW 6 6144 6899 Near Victoria Cottage, Ufton Nervet Block C

Surface level (+51.2) +168 ft
Water struck at +49.2 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 0.2 m (0.5 ft)
Mineral 3.1 m (10.0 ft)
Bedrock 2.7 m+ (9.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, angular to rounded flint with some quartz and quartzite Sand: coarse and medium, with some fine, quartz and flint	3.1	(10.0)	3.3	(11.0)
Reading Beds	Clay, silty, mottled reddish brown and bluish grey	2.7+	(9.0+)	6.0	(19.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	57	+16	23
		-16 + 4	34
		- 4 + 1	14
Sand	34	- 1 + $\frac{1}{4}$	13
		- $\frac{1}{4}$ + 1/16	7
Fines	9	- 1/16	9

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.2 - 1.0	26	24	50
*1.0 - 2.0	16	28	56
*2.0 - 3.3	7	32	61

SU 66 NW 7 6161 6797 Near Linley Shaw, Ufton Nervet Block C

Surface level (+49.1 m) +161 ft
Water struck at +47.2 m
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 1.9 m (6.0 ft)
Mineral 4.9 m (16.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Alluvium	Clay, silty, brown, with small gastropods	0.2	(0.5)	0.4	(1.5)
	Silt, sandy, with small gastropods	1.5	(5.0)	1.9	(6.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, sub-angular to subrounded flint with a trace of quartz Sand: coarse and medium, with some fine, quartz and flint	4.9	(16.0)	6.8	(22.5)
London Clay	Clay, silty, firm, dark greyish brown, with pyrite nodules	0.5+	(1.5+)	7.3	(24.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	77	+16	36
		-16 + 4	41
		- 4 + 1	13
Sand	22	- 1 + $\frac{1}{4}$	8
		- $\frac{1}{4}$ + 1/16	1
Fines	1	- 1/16	1

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*1.9 - 2.9	1	28	71
*2.9 - 3.9	1	23	76
*3.9 - 4.9	1	25	74
*4.9 - 5.9	1	12	87
*5.9 - 6.8	2	20	78

SU 66 NW 8 6191 6572 Old Rectory Farm, Padworth Block F

Surface level (+98.2 m) +322 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.3 m (1.0 ft)
Mineral 4.0 m (13.0 ft)
Bedrock 1.2 m+ (4.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, sub-angular to subrounded flint Sand: medium and coarse, with fine, quartz and flint	4.0	(13.0)	4.3	(14.0)
Lower Bagshot Beds	Clay, silty, brownish orange streaked pale mauvish grey	0.3	(1.0)	4.6	(15.0)
	Clay, silty, laminated pale blue, light greyish mauve and orange	0.3	(1.0)	4.9	(16.0)
	Sand, interlaminated with clay	0.6+	(2.0+)	5.5	(18.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	61	+16	23
		-16 + 4	38
		- 4 + 1	11
Sand	26	- 1 + $\frac{1}{4}$	11
		- $\frac{1}{4}$ + 1/16	4
Fines	13	- 1/16	13

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.3 - 1.2	10	28	62
1.2 - 2.2	11	19	70
2.2 - 3.2	14	27	59
3.2 - 4.3	17	31	52

SU 66 NW 9 6226 6916 Near Tyle Mill, Sulhamstead Block C

Surface level (+49.4 m) +162 ft
Water struck at +48.2 m
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 1.2 m (4.0 ft)
Mineral 4.2 m (14.0 ft)
Bedrock 0.6 m+ (2.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Alluvium	Clay, silty	1.1	(3.5)	1.2	(4.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, scattered cobbles, angular to subangular flint with some rounded quartz and quartzite Sand: medium and coarse, with some fine, quartz and flint	4.2	(14.0)	5.4	(18.0)
Reading Beds	Clay, mottled blue and grey	0.6+	(2.0+)	6.0	(19.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	90	+16	59
		-16 + 4	31
		- 4 + 1	3
Sand	9	- 1 + $\frac{1}{4}$	5
		- $\frac{1}{4}$ + 1/16	1
Fines	1	- 1/16	1

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
*1.2 - 2.2	1	7	92
*2.2 - 3.2	2	4	94
*3.2 - 4.2	2	10	88
*4.2 - 5.4	0	12	88

SU 66 NW 10 6257 6724 Ashen Wood, Ufton Nervet Block F

Surface level (+85.7 m) +281 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 0.4 m (1.5 ft)
Mineral 3.3 m (11.0 ft)
Bedrock 1.0 m+ (3.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
Plateau Gravel	'Very clayey' gravel Gravel: fine to coarse, sub-angular to subrounded flint with some quartzite Sand: coarse and medium, with some fine, quartz and flint	3.3	(11.0)	3.7	(12.0)
Lower Bagshot Beds	Clay, silty, mottled orange-brown and brown	1.0+	(3.5+)	4.7	(15.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	55	+16	22
		-16 + 4	33
		- 4 + 1	10
Sand	20	- 1 + $\frac{1}{4}$	8
		- $\frac{1}{4}$ + 1/16	2
Fines	25	- 1/16	25

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.4 - 1.4	23	22	55
1.4 - 2.4	25	20	55
2.4 - 3.7	27	18	55

SU 66 NW 11 6381 6830 Near Meales Farm, Sulhamstead Block F

Surface level (+94.9 m) +310 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.7 m (2.5 ft)
Mineral 4.0 m (13.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil, pebbly	0.7	(2.5)	0.7	(2.5)
Plateau Gravel	Gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint Sand: medium and coarse with some fine quartz and flint	4.0	(13.0)	4.7	(15.5)
Lower Bagshot Beds	Clay, silty, bright orange-brown	0.5+	(1.5+)	5.2	(17.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	65	+16	29
		-16 + 4	36
		- 4 + 1	13
Sand	28	- 1 + $\frac{1}{4}$	12
		- $\frac{1}{4}$ + 1/16	3
Fines	7	- 1/16	7

Bulk Samples	Percentages		
Depth below surface (m)	Fines	Sand	Gravel
0.7 - 1.7	4	24	72
1.7 - 2.7	5	25	70
2.7 - 3.9	8	27	65
3.9 - 4.7	13	34	53

SU 66 NW 12 6345 6709 Ufton Common, Ufton Nervet Block F

Surface level (+96.0 m) +315 ft
Water struck at +93.3 m
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.4 m (1.5 ft)
Mineral 5.9 m (19.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	Clay, sandy, iron-stained	0.1	(0.5)	0.4	(1.5)
	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint, trace of quartz and sandstone Sand: coarse and medium with some fine quartz and flint	5.9	(19.5)	6.3	(20.5)
Lower Bagshot Beds	Silt, clayey and sandy, orange and greyish yellow	0.5+	(1.5+)	6.8	(22.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	71	+16	32
		-16 + 4	39
		- 4 + 1	10
Sand	18	- 1 + $\frac{1}{4}$	6
		- $\frac{1}{4}$ + 1/16	2
Fines	11	- 1/16	11

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.4 - 1.1	27	13	60
1.1 - 2.1	30	20	50
2.1 - 3.1	14	23	63
*3.1 - 4.1	1	12	87
*4.1 - 5.1	1	10	89
*5.1 - 6.3	2	25	73

SU 66 NW 13 6360 6615 Gravelly Piece, Ufton Nervet Block F

Surface level (+96.9 m) +318 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.5 m (1.5 ft)
Mineral 2.6 m (8.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth m	(ft)
	Soil	0.5	(1.5)	0.5	(1.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, sub-angular to subrounded flint Sand: medium and coarse with some fine quartz and flint	2.6	(8.5)	3.1	(10.0)
Lower Bagshot Beds	Sand, pale green, fine grained	0.1	(0.5)	3.2	(10.5)
	Clay and interlaminated sand, pale green and orange-brown	0.4+	(1.5+)	3.6	(12.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	66	+16	30
		-16 + 4	36
		- 4 + 1	9
Sand	22	- 1 + $\frac{1}{4}$	10
		- $\frac{1}{4}$ + 1/16	3
Fines	12	- 1/16	12

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.5 - 1.0	4	24	72
1.0 - 2.0	19	23	58
2.0 - 3.1	10	19	71

SU 66 NW 14 6482 6985 Near Fox and Hounds, Sulhamstead Block C

Surface level (+46.3 m) +152 ft
Water struck at +42.8 m
Shell and auger (modified) 6 in (152 mm) diameter
June 1962

Overburden 0.3 m (1.0 ft)
Mineral 4.7 m (15.5 ft)
Bedrock 0.5 m+ (1.6 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
River Terrace Deposits (undifferentiated)	Gravel Gravel: fine to coarse, sub-rounded to rounded flint Sand: medium and coarse with some fine quartz and flint	4.7	(15.5)	5.0	(16.5)
Reading Beds	Clay, bluish grey, weathered yellowish brown and reddish brown	0.5+	(1.5+)	5.5	(18.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	62	+ 16	22
		- 16 + 4	40
		- 4 + 1	13
Sand	33	- 1 + $\frac{1}{4}$	16
		- $\frac{1}{4}$ + 1/16	4
Fines	5	- 1/16	5

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.3 - 1.2	10	31	59
1.2 - 2.2	7	34	59
2.2 - 3.2	5	34	61
*3.2 - 4.2	2	31	67
*4.2 - 5.0	3	31	66

SU 66 NW 15 6450 6681 Benhams Firs, Sulhamstead Block F

Surface level (+96.0 m) +315 ft
Water struck at +93.4 m
Shell and auger (modified) 6 in (152 mm) diameter

Overburden 0.3 m (1.0 ft)
Mineral 5.3 m (17.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Plateau Gravel	Sand, silty	0.1	(0.5)	0.3	(1.0)
	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint with a trace of quartz Sand: medium with coarse and some fine flint and quartz	5.3	(17.5)	5.6	(18.5)
Lower Bagshot Beds	Silt, clayey and sandy, brownish orange	0.5+	(1.5+)	6.1	(20.0)

GRADING

	Mean for Deposit %	mm	%	Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
Gravel	60	+16	20	0.3 - 0.8	40	37	23
		-16 + 4	40	0.8 - 1.6	30	68	2
				1.6 - 2.6	21	23	56
		- 4 + 1	7	*2.6 - 3.6	10	16	74
Sand	25	- 1 + $\frac{1}{4}$	14	*3.6 - 4.6	[3	9	88]
		- $\frac{1}{4}$ + 1/16	4	*4.6 - 5.6	3	9	88
Fines	15	- 1/16	15				

SU 66 NW 16 6456 6509 College Piece, Stratfield Mortimer Block F

Surface level (+97.2 m) +319 ft
Water struck at +94.8 m
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.4 m (1.5 ft)
Mineral 4.7 m (15.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	Clay, pebbly	0.3	(1.0)	0.4	(1.5)
	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium and coarse with some fine quartz and flint	4.7	(15.5)	5.1	(17.0)
Lower Bagshot Beds	Clay, silty, orange-brown	0.5+	(1.5+)	5.6	(18.5)

GRADING

	Mean for Deposit %	mm	%
Gravel	67	+16	29
		-16 + 4	38
		- 4 + 1	11
Sand	23	- 1 + $\frac{1}{4}$	10
		- $\frac{1}{4}$ + 1/16	2
Fines	10	- 1/16	10

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
0.4 - 1.6	16	25	59
1.6 - 2.6	14	29	57
2.6 - 3.4	11	28	61
*3.4 - 4.4	2	16	82
*4.4 - 5.1	2	15	83

SU 66 SW 6 6074 6447 Court Farm, Aldermaston Block E

Surface level (+100.6 m) +330 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.2 m (0.5 ft)
Mineral 2.1 m (7.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Plateau Gravel	Gravel Gravel: fine to coarse, scattered cobbles, sub-angular to subrounded flint Sand: medium with coarse and fine flint and quartz	2.1	(7.0)	2.3	(7.5)
Lower Bagshot Beds	Sand and clay, orange-brown, mottled grey	0.5+	(1.5+)	2.8	(9.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	61	+16	26
		-16 + 4	35
		- 4 + 1	6
Sand	30	- 1 + $\frac{1}{4}$	18
		- $\frac{1}{4}$ + 1/16	6
Fines	9	- 1/16	9

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.2 - 1.2	9	32	59
1.2 - 2.3	8	28	64

SU 66 SW 7 6086 6230 Tadley Common, Tadley Block E

Surface level (+101.5 m) +332 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
June 1972

Overburden 0.1 m (0.5 ft)
Mineral 4.8 m (16.0 ft)
Bedrock 1.2 m+ (4.0 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium with coarse and some fine quartz and flint	4.8	(16.0)	4.9	(16.0)
Lower Bagshot Beds	Clay, sandy, orange-brown mottled bluish grey and reddish brown	1.2+	(4.0+)	6.1	(20.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	62	+16	31
		-16 + 4	31
		- 4 + 1	8
Sand	26	- 1 + $\frac{1}{4}$	15
		- $\frac{1}{4}$ + 1/16	3
Fines	12	- 1/16	12

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.1 - 0.9	12	28	60
0.9 - 1.9	10	38	52
1.9 - 2.9	9	31	60
2.9 - 3.9	10	17	73
3.9 - 4.9	18	18	64

SU 66 SW 8 6141 6426 Old Warren, Aldermaston Block E

Surface level (+100.3 m) +329 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.2 m (0.5 ft)
Mineral 2.9 m (9.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: medium and coarse with fine quartz and flint	2.9	(9.5)	3.1	(10.0)
Lower Bagshot Beds	Clay, silty and sandy, orange-brown mottled grey	0.5+	(1.5+)	3.6	(12.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	65	+16	36
		-16 + 4	29
		- 4 + 1	9
Sand	24	- 1 + $\frac{1}{4}$	9
		- $\frac{1}{4}$ + 1/16	6
Fines	11	- 1/16	11

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.2 - 0.7	13	25	62
0.7 - 1.7	11	13	76
1.7 - 3.1	11	31	58

SU 66 SW 9 6155 6345 Near Soke Plantation, Aldermaston Block E

Surface level (+100.3 m) +329 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.7 m (2.5 ft)
Mineral 2.3 m (7.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	(ft)	Depth m	(ft)
	Made ground	0.7	(2.5)	0.7	(2.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: medium with coarse, and some fine, quartz and flint	2.3	(7.5)	3.0	(10.0)
Lower Bagshot Beds	Clay, silty and sandy, bright orange-brown mottled grey	0.5+	(1.5+)	3.5	(11.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	66	+16	36
		-16 + 4	30
		- 4 + 1	8
Sand	24	- 1 + $\frac{1}{4}$	13
		- $\frac{1}{4}$ + 1/16	3
Fines	10	- 1/16	10

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.7 - 1.7	9	20	71
1.7 - 2.5	8	30	62
2.5 - 3.0	13	27	60

SU 66 SW 10 6290 6483 Morgan's Slade, Mortimer West End Block F

Surface level (+98.8 m) +324 ft
Water struck at +95.7 m
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.3 m (1.0 ft)
Mineral 4.6 m (15.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: coarse and medium, with some fine, quartz and flint	4.6	(15.0)	4.9	(16.0)
Lower Bagshot Beds	Clay, silty and sandy, orange-brown	0.5+	(1.5+)	5.4	(18.0)

GRADING

Mean for Deposit

	%	mm	%
Gravel	66	+16	26
		-16 + 4	40
		- 4 + 1	10
Sand	21	- 1 + $\frac{1}{4}$	8
		- $\frac{1}{4}$ + 1/16	3
Fines	13	- 1/16	13

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.3 - 1.3	21	15	64
1.3 - 2.3	17	19	64
2.3 - 3.5	13	36	51
*3.5 - 4.9	3	16	81

SU 66 SW 11 6232 6406 Welshman's Pond, Mortimer West End Block E

Surface level (+99.4 m) +326 ft
Water struck at +98.2 m
Shell and auger (modified) 6 in (152 mm) diameter
April 1972

Overburden 0.3 m (1.0 ft)
Mineral 4.1 m (13.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	Gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium and coarse, with some fine, quartz and flint	4.1	(13.5)	4.4	(14.5)
Lower Bagshot Beds	Sand and silt with clay, orange-brown, reddish brown and grey	0.5+	(1.5+)	4.9	(16.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	70	+16	28
		-16 + 4	42
		- 4 + 1	9
Sand	25	- 1 + $\frac{1}{4}$	13
		- $\frac{1}{4}$ + 1/16	3
Fines	5	- 1/16	5

Bulk Samples Depth below surface (m)	Percentages Fines	Sand	Gravel
0.3 - 1.3	7	28	65
*1.3 - 2.3	4	22	74
*2.3 - 3.3	3	27	70
*3.3 - 4.4	7	20	73

SU 66 SW 12 6286 6232 Near Silchester Hall, Silchester Block E

Surface level (+99.7 m) +327 ft
Water struck at +98.5 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.6 m (2.0 ft)
Mineral 3.9 m (13.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
Made ground		0.6	(2.0)	0.6	(2.0)
Plateau Gravel	Gravel Gravel: fine to coarse, scattered cobbles, sub-angular to rounded flint Sand: medium and coarse, with some fine, quartz and flint	3.9	(13.0)	4.5	(15.0)
Lower Bagshot Beds	Clay, silty and sandy, orange-brown mottled grey	0.5+	(1.5+)	5.0	(16.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	60	+16	21
		-16 + 4	39
		- 4 + 1	14
Sand	33	- 1 + ¼	16
		- ¼ + 1/16	3
Fines	7	- 1/16	7

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.6 - 1.6	9	27	64
*1.6 - 2.6	8	27	65
*2.6 - 3.6	5	37	58
*3.6 - 4.5	6	40	54

SU 66 SW 13 6338 6424 West End Farm, Mortimer West End Block F

Surface level (+98.2 m) +322 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
October 1972

Overburden 0.4 m (1.5 ft)
Mineral 5.0 m (16.5 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.4	(1.5)	0.4	(1.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, sub-angular to subrounded flint with quartz and quartzite in the upper 0.8 m Sand: coarse and medium, with some fine, quartz and flint	5.0	(16.5)	5.4	(18.0)
Lower Bagshot Beds	Clay, silty, mottled brown, yellow and grey	0.5+	(1.5+)	5.9	(19.5)

GRADING

	Mean for Deposit.			Bulk Samples			
				Depth below	Percentages		
	%	mm	%	surface (m)	Fines	Sand	Gravel
Gravel	64	+16	26	0.4 - 0.8	32	13	55
		-16 + 4	38	0.8 - 1.8	10	18	72
				1.8 - 2.8	13	15	72
		- 4 + 1	10	2.8 - 3.8	26	17	57
Sand	18	- 1 + $\frac{1}{4}$	6	3.8 - 4.8	16	20	64
		- $\frac{1}{4}$ + 1/16	2	4.8 - 5.4	17	25	58
Fines	18	- 1/16	18				

SU 66 SW 14 6389 6299 Near Stone Hill, Mortimer West End Block E

Surface level (+96.2 m) +316 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.3 m (1.0 ft)
Mineral 3.9 m (13.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.3	(1.0)	0.3	(1.0)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium and coarse, with some fine, quartz and flint	3.9	(13.0)	4.2	(14.0)
Lower Bagshot Beds	Clay, silty, orange-brown mottled grey	0.5	(1.5+)	4.7	(15.5)

GRADING

Mean for Deposit

	%	mm	%
Gravel	60	+16	29
		-16 + 4	31
		- 4 + 1	10
Sand	26	- 1 + ¼	12
		- ¼ + 1/16	4
Fines	14	- 1/16	14

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.3 - 1.3	20	22	58
1.3 - 1.7	6	30	64
2.7 - 3.7	21	21	58
3.7 - 4.2	10	32	58

SU 66 SW 15 6464 6441 Near Summerlug, Mortimer West End Block F

Surface level (+96.2 m) +316 ft
Water not struck
Shell and auger (modified) 6 in (152 mm) diameter
March 1972

Overburden 0.3 m (0.5 ft)
Mineral 3.1 m (10.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.2	(0.5)	0.2	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium and coarse, with some fine, quartz and flint	3.1	(10.0)	3.3	(11.0)
Lower Bagshot Beds	Clay, silty and sandy, orange-brown mottled grey	0.5+	(1.5+)	3.8	(12.5)

GRADING

	Mean for Deposit %	mm	%
Gravel	63	+16	23
		-16 + 4	40
		- 4 + 1	8
Sand	24	- 1 + $\frac{1}{4}$	13
		- $\frac{1}{4}$ + 1/16	3
Fines	13	- 1/16	13

Bulk Samples

Depth below surface (m)	Percentages Fines	Sand	Gravel
0.2 - 0.9	4	33	63
0.9 - 1.9	16	21	63
1.9 - 3.3	[16	21	63]

SU 66 SE 1 6568 6483 Mortimer Common, Stratfield Mortimer Block F

Surface level (+95.4 m) +313 ft
Water struck at +93.6 m
Shell and auger (modified) 6 in (152 mm) diameter
May 1972

Overburden 0.1 m (0.5 ft)
Mineral 2.7 m (9.0 ft)
Bedrock 0.5 m+ (1.5 ft+)

LOG

Geological Classification	Lithology	Thickness m	Thickness (ft)	Depth m	Depth (ft)
	Soil	0.1	(0.5)	0.1	(0.5)
Plateau Gravel	'Clayey' gravel Gravel: fine to coarse, sub-angular to rounded flint Sand: medium with coarse and fine quartz and flint	2.7	(9.0)	2.8	(9.0)
Lower Bagshot Beds	Clay, silty and sandy, orange-brown mottled grey	0.5+	(1.5+)	3.3	(11.0)

GRADING

	Mean for Deposit %	mm	%
Gravel	52	+16	14
		-16 + 4	38
		- 4 +1	7
Sand	37	- 1 + $\frac{1}{4}$	27
		- $\frac{1}{4}$ + 1/16	3
Fines	11	- 1/16	11

Bulk Samples	Percentages		
Depth below surface (m)	Fines	Sand	Gravel
0.1 - 1.2	9	26	65
1.2 - 1.8	16	22	62
*1.8 - 2.8	9	59	32

Appendix G: List of Workings

In 1975 the seven sand and gravel pits listed were known to be operational. All the worked-out areas are shown on the map accompanying the report.

Location	Grid Reference	Deposit
West of Widmead Lock	5040 6635	River Terrace Deposits
South-west of Thatcham	5100 6686	River Terrace Deposits
South of Woolhampton	5700 6550	River Terrace Deposits
North of Aldermaston Wharf	6020 6790	River Terrace Deposits
Brimpton Common	5730 6300	Plateau Gravel
East of Ufton Nervet	6410 6760	Plateau Gravel
Pickling Yard Plantation	6420 6490	Plateau Gravel

Appendix H: Conversion Table, Metres to Feet (to nearest 0.5 ft)

m	ft	m	ft	m	ft	m	ft	m	ft
0.1	0.5	6.1	20	12.1	39.5	18.1	59.5	24.1	79
0.2	0.5	6.2	20.5	12.2	40	18.2	59.5	24.2	79.5
0.3	1	6.3	20.5	12.3	40.5	18.3	60	24.3	79.5
0.4	1.5	6.4	21	12.4	40.5	18.4	60.5	24.4	80
0.5	1.5	6.5	21.5	12.5	41	18.5	60.5	24.5	80.5
0.6	2	6.6	21.5	12.6	41.5	18.6	61	24.6	80.5
0.7	2.5	6.7	22	12.7	41.5	18.7	61.5	24.7	81
0.8	2.5	6.8	22.5	12.8	42	18.8	61.5	24.8	81.5
0.9	3	6.9	22.5	12.9	42.5	18.9	62	24.9	81.5
1.0	3.5	7.0	23	13.0	42.5	19.0	62.5	25.0	82
1.1	3.5	7.1	23.5	13.1	43	19.1	62.5	25.1	82.5
1.2	4	7.2	23.5	13.2	43.5	19.2	63	25.2	82.5
1.3	4.5	7.3	24	13.3	43.5	19.3	63.5	25.3	83
1.4	4.5	7.4	24.5	13.4	44	19.4	63.5	25.4	83.5
1.5	5	7.5	24.5	13.5	44.5	19.5	64	25.5	83.5
1.6	5	7.6	25	13.6	44.5	19.6	64.5	25.6	84
1.7	5.5	7.7	25.5	13.7	45	19.7	64.5	25.7	84.5
1.8	6	7.8	25.5	13.8	45.5	19.8	65	25.8	84.5
1.9	6	7.9	26	13.9	45.5	19.9	65.5	25.9	85
2.0	6.5	8.0	26	14.0	46	20.0	65.5	26.0	85.5
2.1	7	8.1	26.5	14.1	46.5	20.1	66	26.1	85.5
2.2	7	8.2	27	14.2	46.5	20.2	66.5	26.2	86
2.3	7.5	8.3	27	14.3	47	20.3	66.5	26.3	86.5
2.4	8	8.4	27.5	14.4	47	20.4	67	26.4	86.5
2.5	8	8.5	28	14.5	47.5	20.5	67.5	26.5	87
2.6	8.5	8.6	28	14.6	48	20.6	67.5	26.6	87.5
2.7	9	8.7	28.5	14.7	48	20.7	68	26.7	87.5
2.8	9	8.8	29	14.8	48.5	20.8	68	26.8	88
2.9	9.5	8.9	29	14.9	49	20.9	68.5	26.9	88.5
3.0	10	9.0	29.5	15.0	49	21.0	69	27.0	88.5
3.1	10	9.1	30	15.1	49.5	21.1	69	27.1	89
3.2	10.5	9.2	30	15.2	50	21.2	69.5	27.2	89
3.3	11	9.3	30.5	15.3	50	21.3	70	27.3	89.5
3.4	11	9.4	31	15.4	50.5	21.4	70	27.4	90
3.5	11.5	9.5	31	15.5	51	21.5	70.5	27.5	90
3.6	12	9.6	31.5	15.6	51	21.6	71	27.6	90.5
3.7	12	9.7	32	15.7	51.5	21.7	71	27.7	91
3.8	12.5	9.8	32	15.8	52	21.8	71.5	27.8	91
3.9	13	9.9	32.5	15.9	52	21.9	72	27.9	91.5
4.0	13	10.0	33	16.0	52.5	22.0	72	28.0	92
4.1	13.5	10.1	33	16.1	53	22.1	72.5	28.1	92
4.2	14	10.2	33.5	16.2	53	22.2	73	28.2	92.5
4.3	14	10.3	34	16.3	53.5	22.3	73	28.3	93
4.4	14.5	10.4	34	16.4	54	22.4	73.5	28.4	93
4.5	15	10.5	34.5	16.5	54	22.5	74	28.5	93.5
4.6	15	10.6	35	16.6	54.5	22.6	74	28.6	94
4.7	15.5	10.7	35	16.7	55	22.7	74.5	28.7	94
4.8	15.5	10.8	35.5	16.8	55	22.8	75	28.8	94.5
4.9	16	10.9	36	16.9	55.5	22.9	75	28.9	95
5.0	16.5	11.0	36	17.0	56	23.0	75.5	29.0	95
5.1	17	11.1	36.5	17.1	56	23.1	76	29.1	95.5
5.2	17	11.2	36.5	17.2	56.5	23.2	76	29.2	96
5.3	17.5	11.3	37	17.3	57	23.3	76.5	29.3	96
5.4	17.5	11.4	37.5	17.4	57	23.4	77	29.4	96.5
5.5	18	11.5	37.5	17.5	57.5	23.5	77	29.5	97
5.6	18.5	11.6	38	17.6	57.5	23.6	77.5	29.6	97
5.7	18.5	11.7	38.5	17.7	58	23.7	78	29.7	97.5
5.8	19	11.8	38.5	17.8	58.5	23.8	78	29.8	98
5.9	19.5	11.9	39	17.9	58.5	23.9	78.5	29.9	98
6.0	19.5	12.0	39.5	18.0	59	24.0	78.5	30.0	98.5

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Assessment of British Sand and Gravel Resources

No. 1 The sand and gravel resources of the country south-east of Norwich, Norfolk: Description of 1 : 25 000 resource sheet TG 20. By E. F. P. Nickless. Price £1.15. Report No. 71/20

No. 2 The sand and gravel resources of the country around Witham, Essex: Description of 1 : 25 000 resource sheet TL 81. By H. J. E. Haggard. Price £1.20. Report No. 72/6

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INSTITUTE OF GEOLOGICAL SCIENCES

MINERAL ASSESSMENT UNIT

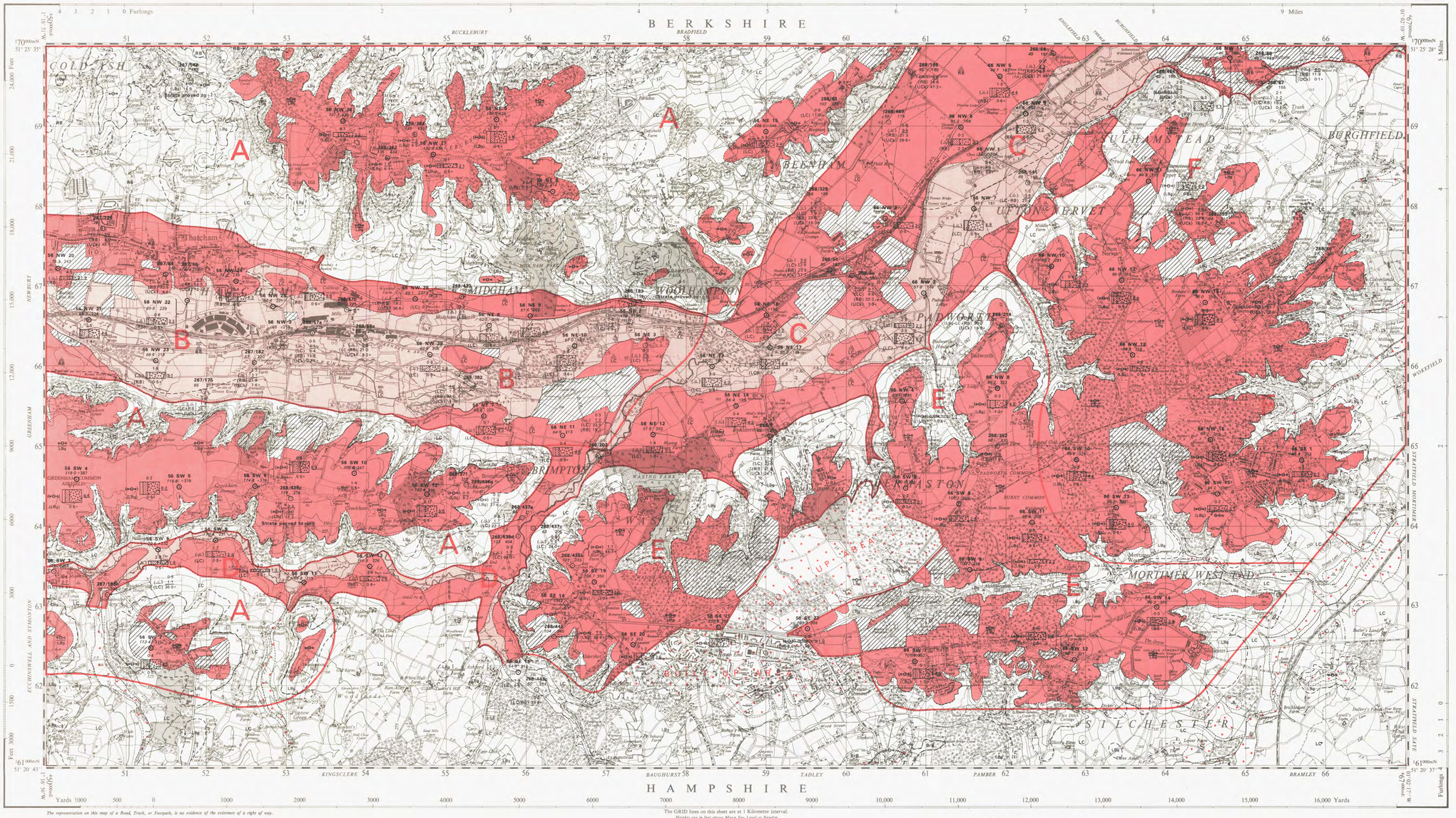
THE SAND AND GRAVEL RESOURCES OF THE COUNTRY AROUND ALDERMASTON, BERKSHIRE

Scale 1:25 000 or about 2½ Inches to 1 Mile

ORDNANCE SURVEY

PARTS OF SHEETS SU 56 & SU 66

PROVISIONAL EDITION



The representation on this map of a Road, Track, or Footpath, is no evidence of the existence of a right of way.

Original geological survey on the one-inch scale by H. W. Bristow.
W. T. Aveline, W. Whitaker, T. R. Polwhele and R. Trench in 1857-62
Surveyed on the six-inch scale by F. J. Bennett in 1895.
Published on the one-inch scale in 1898. Sir Archibald Geikie, D.C.L., F.R.S. Director General
Colour-printed on the one-inch scale in 1904. Reprinted in 1946 and 1971
Amended by H. C. Squirrell in 1973-4

Sand and Gravel Survey by H. C. Squirrell, C. E. Corser, P. G. Hoare and R. Robson in 1972-74
R. G. Thurrell, Head, Mineral Assessment Unit

1:25 000 Sand and Gravel Resource Sheet published 1976
Austin W. Woodland, C.B.E., Director, Institute of Geological Sciences,
incorporating the Geological Survey of Great Britain, the Museum
of Practical Geology and Overseas Geological Surveys
1000/76

The GRID lines on this sheet are at 1 Kilometre interval.
Heights are in feet above Mean Sea Level at Newlyn
Contour Values are in feet
1 square inch on this map represents
99·639 acres on the ground

Data quoted for an individual borehole refer strictly to that site: reliable conclusions cannot be drawn about the thickness and grading elsewhere in the deposit, particularly in material as variable as sand and gravel. However, estimates of the volume and mean grading of the mineral as a whole in each Resource Block are given in the Report.

Compiled from 6" sheets last fully revised 1908-32
Other partial systematic revision 1936-56 has been incorporated

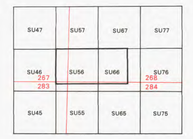


Diagram showing the relationship of the National Grid 1:25 000 sheets with the One-Inch Geological Sheets 267, 268, 283 and 284

This map should be read in conjunction with the accompanying Report which contains details of the assessment of resources.

24

EXPLANATION OF SYMBOLS AND ABBREVIATIONS

RECENT AND PLEISTOCENE

DRIFT

~	Alluvium A-2
≙	River Terrace Deposits (undifferentiated) RT-6
€	Head H-12
o-o-o	Plateau Gravel PL-2

EOCENE CRETACEOUS

SOLID

BrB	Bracklesham Beds
LBg	Lower Bagshot Beds
LC	London Clay
RB	Reading Beds
UCk	Upper Chalk (proved in some boreholes only)

BOUNDARY LINES

- Geological boundary, Drift
- Geological boundary, Solid
- Resource Block boundary
- Inferred boundary between recognised categories of deposits
- Worked out sand and gravel areas WO-8

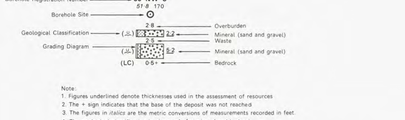
Broken lines denote uncertainty

BOREHOLE DATA

SITE LOCATIONS

- Mineral Assessment Unit (M.A.U.) boreholes
- Other boreholes

M.A.U. BOREHOLES



Note:
1. Figures underlined denote thicknesses used in the assessment of resources
2. The + sign indicates that the base of the deposit was not reached
3. The figures in *italics* are the metric conversions of measurements recorded in feet.
4. The geological classification is given only for mineral and bedrock

Borehole Registration Number

Each M.A.U. borehole is identified by a registration number e.g. 66 NW 3. The first four characters refer to the quarter sheet and the figures following to the I.G.S. serial number for the borehole within that quarter.

Grading Diagrams

Each grading diagram shows the mean particle size distribution of a distinct deposit of mineral

The height of the diagram is proportional to the mineral thickness
The widths of the divisions show the proportions of **Fines**, **Sand** and **Gravel**

OTHER BOREHOLES

The layout of information is the same as for M.A.U. boreholes although data available may not be as comprehensive. They are registered in the same series, except for records in the Hydrogeological Department, for example, **268/353** signifies Hydrogeological Department borehole 353 on New Series One-Inch Geological Sheet 268

CATEGORIES OF DEPOSITS

Exposed mineral	CAT-E6
Continuous or almost continuous spreads of mineral beneath overburden	CAT-C1
Sand and gravel not assessed (exposed and beneath cover)	CAT-N3
Sand and gravel absent or not potentially workable	CAT-A2

RESOURCE BLOCKS

For the purpose of assessment the mineral is divided into Resource Blocks (see report). Each is designated by a letter

Detailed records may be consulted on application to the Head, Mineral Assessment Unit, Institute of Geological Sciences, Exhibition Road, London SW7 2DE

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