

# PHYSICAL CHARACTERISTICS REPORT FOR PROPOSED SAND EXTRACTION AT SANDIWAY, NORTHWICH, CHESHIRE

Following the request for detailed information on the physical characteristics of soil at Sandiway, members of the RPG visited the site in July 1990. An Agricultural Land Classification survey was undertaken and soils augered to 100 cms, and a soil pit dug to determine physical characteristics.

## Location, Altitude & Relief

The site lies between Daleford's Lane and Kennel Lane, to the south of Sandiway village, with Daleford Manor to the south of the site. The site is divided into three fields; the two northern fields are very gently undulating, mainly between 74 metres and 76 metres in altitude. The southern most field consists of an old sand quarry, with steep external margins. These margins are scrub-covered and classified as non-agricultural. Gradient is not a limiting factor within the agricultural part of the site.

## Climate and Rainfall

The main parameters used in the assessment of the climatic limitations are Average Annual Rainfall (AAR) and Accumulated Temperature (ATO). For this site these figures are 850 mm and 1377°C respectively, indicating that there are no climatic restrictions on the site. The field capacity days figure is 195 days for this site. The mean last frost occurs in late April.

## Geology and Soils

The area overlies a bedrock of Triassic Lower Keuper Marl which is overlain by Glacial Sand of the late Devensian Age. The associated soils are typically well-drained loamy sands overlying sand at depth. These soils are easily worked in both spring and autumn, but the weak soil structure can result in surface layer damage as a result of badly timed cultivations or heavy rain. These soils can be drought prone in summer and are inherently fertile.

## Land Use

At the time of survey, the northern field was under winter barley, except for a small area of spring barley along the northern edge. The central field supported a crop of oilseed rape, whilst the southern field in the old quarry was down to grass ley.

## AGRICULTURAL LAND CLASSIFICATION

The site is of good to moderate quality agricultural land.

Sub-Grade 3a : This accounts for 13.3 ha and 75% of the site. It occurs in the two northern fields on the site where soils are typically loamy sand topsoils overlying loamy sand upper subsoils with sand at depth. The stone content within the subsoil is variable, and small areas of lower quality land may be included within this area. Droughtiness is the main limitation to the agricultural use of this land.

Sub Grade 3b : This accounts for 2.8ha and 16% of the site. It occurs in the southern field on the site where soils are typically loamy sand topsoils overlying sand subsoils. The depth of the loamy sand topsoil is variable, with some sand occurring at the surface in some places. Droughtiness is the main limitation to the agricultural use of this land, although a more detailed survey would probably reveal a pattern limitation.

Non-Agricultural Ltd : This accounts for 1.7 ha and 9% of the site. It occurs around the margins of the old quarry and includes areas of scrub, bracken, trees and exposed sand on the steepest slopes.

#### Breakdown of ALC Grades

Grade	Area	%
3a	13.3	75
3b	2.8	16
Non-Agric	1.7	9
TOTAL	<u>17.84 ha</u>	<u>100</u>

#### SOIL UNITS

The area is underlain by uniform soils, although two soil units have been identified, which may require separate handling if the site is worked for sand.

##### Unit 1

this is mapped in the two northern most fields and corresponds to the area shown as sub-grade 3a. Soils are typically loamy sand to 25 cms, overlying slightly stony loamy sand to 50 cms, overlying slightly to moderately stony sand. Some profiles are stoneless at depth. Details from the soil pit are shown in Appendix 1.

##### Unit 2

This is mapped in the southern most field and corresponds to the area shown as sub-grade 3b. For convenience, the non-agricultural margins have been included within this unit. Soils are typically loamy sand to 30 cms, overlying sand, although in places the sand occurs closer to the surface.

Resource Planning Group  
Wolverhampton RO

30 July 1990

## APPENDIX 1

## MINERAL SITE RECORD

Site Name : Dalefords Lane  
Sandiway

## SOIL PIT DETAILS

Pit Number : 1

Slope : Level

Land Use : Oil Seed Rape Stubble

Aspect : N/A

Depth	Texture	Minsell Colour	Mottles Abundance Colour	Structure Grade/Class/ Type	Porosity	Stone Abundance/ Type	Plant Roots	Comments
0 - 25	LS	10YR 2/2 Very dark brown	None	-	>2%	Pebbly layer at boundary of topsoil/upper subsoil boundary	Many fine fibrous roots	
25 - 49	LS	7.5 YR 5/6 stony brown	Few faint ochreous mottles	Weak, medium, angular breaking down to single grain	>2%	Sub rounded + rounded pebbles up to 5 cms Aug. 3-4 cms	Common fine & v. fine roots	No clearly defined boundary with lower subsoil
49-120	S	7.5 YR 6/6 Reddish yellow	None	Single grain	>2%	Slightly stony sub rounded & rounded pebbles Aug. <u>27</u> 4cms +	Common roots to 80 cms	

Profile Details :

Plant roots :

Soil Fauna : Occasional earthworms in topsoil

General Comments :