Telford & Wrekin Local Plan

Examination in Public

Matter 7: Environmental Resources

EiP Ref K24 -32a

1. The Inspector has asked the Council to consider two options for mineral safeguarding areas (MSAs) in Telford and Newport. Option 1 would be to apply the MSAs across both urban areas. Option 2 would be to provide additional evidence to justify why MSA's should not be shown across the urban areas (Telford and Newport) and change the shadings for mineral buffer zones.

2. The Council has reviewed its approach in the light of the oral evidence given, and statement made at the Examination in Public which its officers and fellow officers from Shropshire Council provided[1]

3. The Council has now mapped the theoretical minerals resources identified in the BGS study[2] across both urban areas (see Appendix 1).

4. Over this layer, the Council has subsequently identified sites with Section 7(1) consents and environmental constraints (World Heritage Site, Area of Outstanding Natural Beauty, Sites of Special Scientific Interest, Local Wildlife Sites, Existing and Proposed Local Nature Reserves, Ancient Woodlands, Local Geological Sites, Strategic Landscapes, Conservation Areas, Historic Parks and Gardens and Scheduled Ancient Monuments) as well as major sites in the south of Newport that benefit from planning permission or which have been minded to grant approvals[3]. These areas have been 'blacked' out to show the remaining MSA areas.

5. The remaining MSA areas are overwhelmingly in built up areas. There are no viable economic 'pockets' with the exception of Site H1. However, as evidenced by borehole data (See Appendix 2). There are no viable economic deposits.

6. As a result of this review, the Council concludes that it should pursue Option 2 and not apply the MSA across the urban areas of Telford and Newport. The Council's approach of excluding MSA's within built up areas has been accepted in urban areas elsewhere. For example, the Greater Manchester

[1] J8/TWC
[2] C6h
[3] Helpfully shown in Appendix 3 to J8/55/1

Joint Minerals Plan (2013) also excludes MSA's from urban areas where the policy[4] allows proposals to be considered as they come forward and does not prevent extraction of minerals in the urban area in appropriate circumstances. In other urban areas with single tier (unitary) authorities the position is similar; Stoke, and various London Boroughs (Hillingdon, Hounslow and Redbridge) also avoid the blanket covering of urban areas with MSA.

7. The Council has contacted the Minerals Products Association for their view on this. They concur with the Council's approach (see Appendix 3).

8. The MSA's are designed to be shown on the interactive proposals map where the shadings are crisp and clear.

[4] (Paragraph 4.5 Greater Manchester Minerals Plan April 2013)

Telford & Wrekin Local Plan : Mineral Safeguarding Areas map - Post Examination in Public
EiP Library Reference: K24/32b

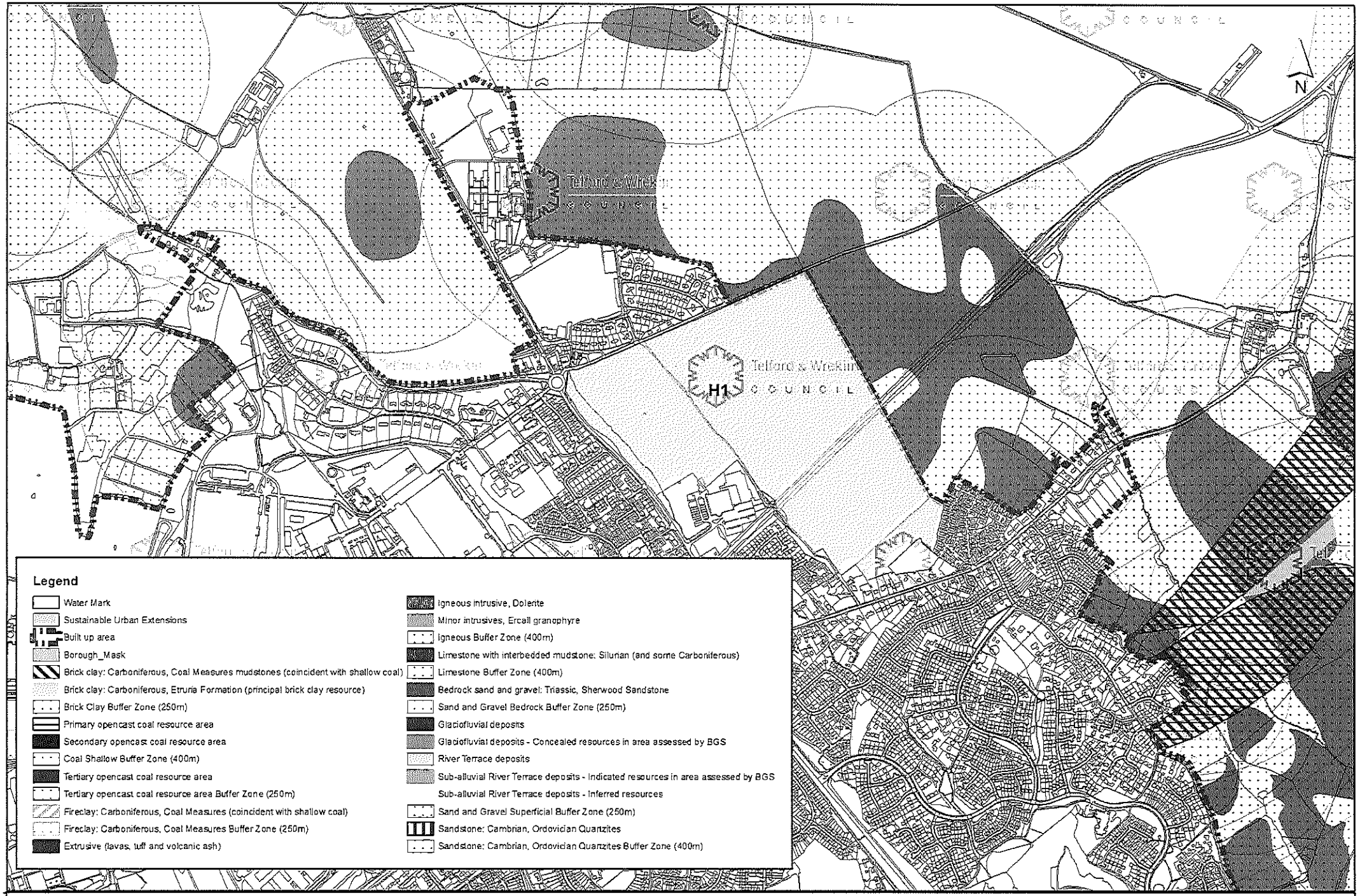
Telford & Wrekin Local Plan - Post Examination in Public Minerals Safeguarding Areas Map

This map should be read in conjunction with the Telford & Wrekin Local Plan 2011 - 2031.

Legend

- Telford & Wrekin Boundary
- Built up area
- Environmental designations, Planning permissions, Resolution to grant & Section 7(1) consents
- Brick clay: Carboniferous, Coal Measures mudstones (coincident with shallow coal)
- Brick clay: Carboniferous, Etruria Formation (principal brick clay resource)
- Brick Clay Buffer Zone (250m)
- Primary opencast coal resource area
- Secondary opencast coal resource area
- Coal Shallow Buffer Zone (400m)
- Tertiary opencast coal resource area
- Tertiary opencast coal resource area Buffer Zone (250m)
- Fireclay: Carboniferous, Coal Measures (coincident with shallow coal)
- Fireclay: Carboniferous, Coal Measures Buffer Zone (250m)
- Extrusive (lavas, tuff and volcanic ash)
- Igneous intrusive, Dolerite
- Minor intrusives, Ercall granophyre
- Igneous Buffer Zone (400m)
- Limestone with interbedded mudstone: Silurian (and some Carboniferous)
- Limestone Buffer Zone (400m)
- Bedrock sand and gravel: Triassic, Sherwood Sandstone
- Sand and Gravel Bedrock Buffer Zone (250m)
- Glaciofluvial deposits
- Glaciofluvial deposits - Concealed resources in area assessed by BGS
- River Terrace deposits
- Sub-alluvial River Terrace deposits - Indicated resources in area assessed by BGS
- Sub-alluvial River Terrace deposits - Inferred resources
- Sand and Gravel Superficial Buffer Zone (250m)
- Sandstone: Cambrian, Ordovician Quartzites
- Sandstone: Cambrian, Ordovician Quartzites Buffer Zone (400m)

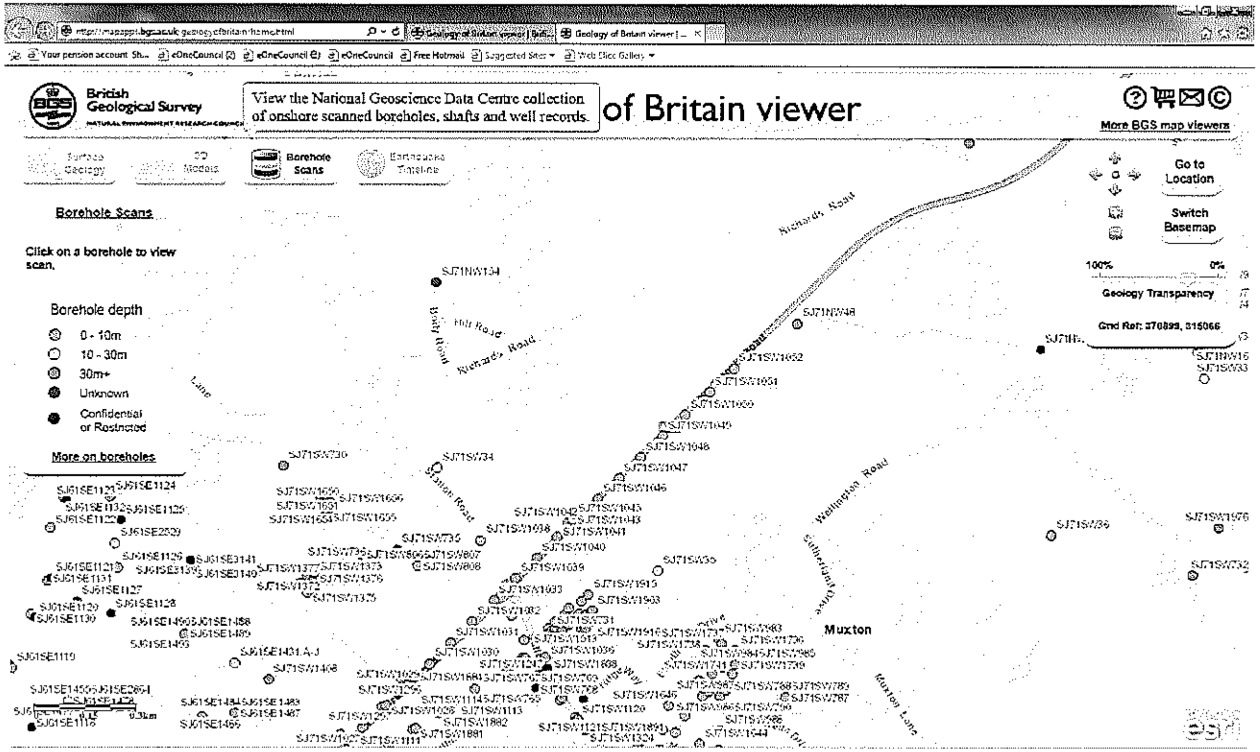
N W E S

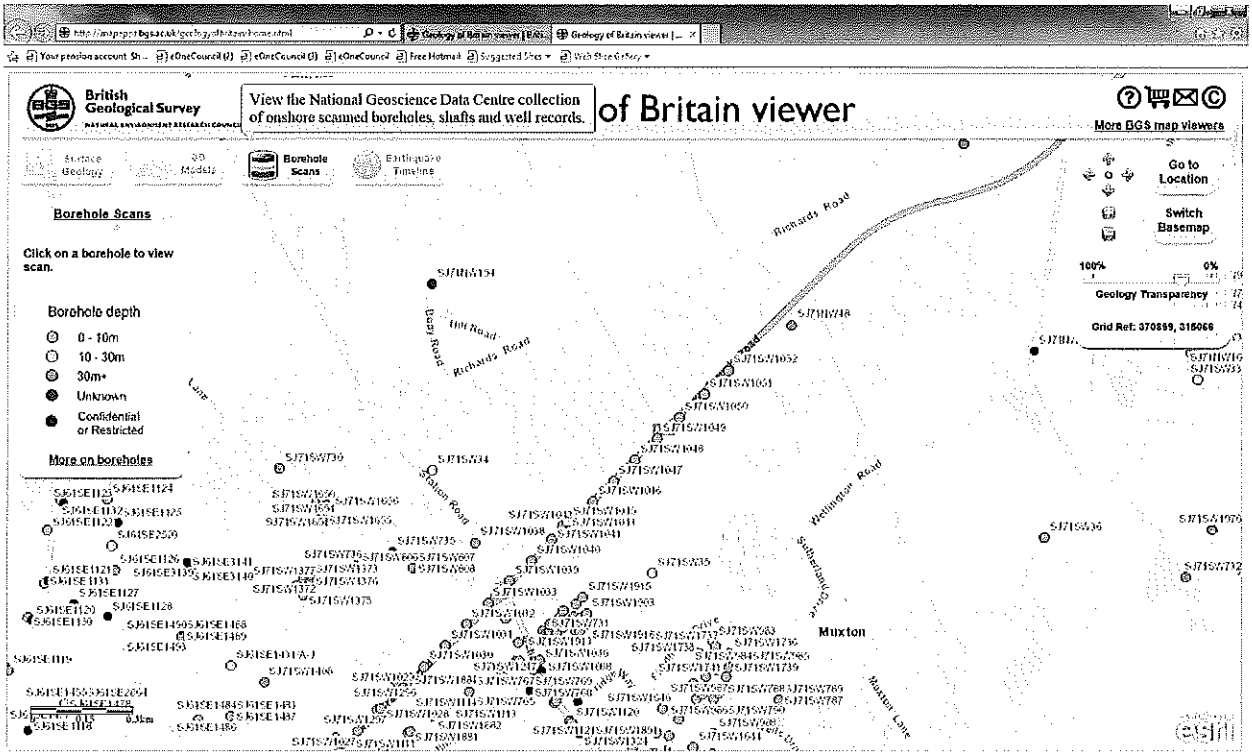


Telford & Wrekin COUNCIL

Site H1 Sustainable urban extension Vs BGS data

Scale: 1:12,500


British Geological Survey
View the National Geoscience Data Centre collection of onshore scanned boreholes, shafts and well records.
of Britain viewer
More BGS map viewers
Borehole Scans
Click on a borehole to view scan.
Borehole depth
0 - 10m
10 - 30m
30m+
Unknown
Confidential or Restricted
More on boreholes
Go to Location
Switch Basemap
100%
0%
Geology Transparency
Muxton
Richards Road
Wellington Road
Muxton Lane
Hill Road
SJ71NW134
SJ71NW48
SJ71SW34
SJ71SW730
SJ71SW36


British Geological Survey
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of Britain viewer
More BGS map viewers
Surface Geology
3D Models
Borehole Scans
Earthquake Timeline
Borehole Scans
Click on a borehole to view scan.
Borehole depth
0 - 10m
10 - 30m
30m+
Unknown
Confidential or Restricted
More on boreholes
Go to Location
Switch Basemap
100%
0%
Geology Transparency
Grid Ref: 370899, 315066
Richards Road
Bury Road
Hill Road
Richards Road
Station Road
Wellington Road
Muxton
Muxton Lane
Lane

SJ71SW34— DONNINGTON A1
370 560, 314690 DEPTH: 14·63m.

SJ71SW/34-3

Augering programme - B30 power auger

Honnington and Donnington area

Donnington A1 SJ 7056 1419 SJ71SW/34.

0-3'. Late glacial lacustrine deposit; clay, medium yellow-grey; soft sandy, unbedded.

5-12'. Upper Boulder Clay: boulder clay, rich purple-brown; rather soft sandy, pebbly.

13-48'. Middle Sands: sand, medium brown; largely LMS material, also m angular grains, small shell fragments; few pebbles to 2cm main quartz. Harder at 24', harder from 28'-33', hard at 44'. Coars downwards, with larger pebbles, to 5cm, including ?Cretaceous and rounded grit clasts.

Donnington A2 SJ 7122 1438. SJ71SW/35.

0-8'. Top few feet sandy soil, feather edge of a large outcrop of Mi glacial sands. Then Lower Mottled Sandstone.

8-35'. Lower Mottled Sandstone. Sand, red and yellow, rounded frosted Change at 21', to yellow coarse sand with pieces to 2cm of hard sandstone (rounded grains in siliceous matrix); few small clay patches. Becoming dark red and clayey at 33'. Hole abandoned a still drilling easily.

Honnington A1 SJ 7240 1448. SJ71SW/36.

0-3'. Sand, pale grey; soft, mixed angular material.

3-8'. Boulder clay, then lacustrine clay.

8-13'. Lacustrine clay to 12', then thin fine clayey sand, dark brown very wet and runny, mixed angular grains, little Bunter materi

13-20'. Sand as above. Drilling abandoned at 20' at an obstruction. Bi revealed Coal Measures dark grey mudstone.

Honnington

One hole was sunk to explore the extension of the glacial lake deposits mapped on the Lower Mottled Sandstone west of Honnington Gran Twenty feet of drift were recorded, sand resting on a thin boulder cla then lacustrine clay and sand. At 20' (6.1m) Coal Measures mudstones w encountered. At this point the published map shows drift-free Basal Co Measures Sandstone.

Donnington, Hoo Hall, Trench

Five holes were sunk to investigate the drift deposits between Donnington and Lubstree, where solid Lower Mottled Sandstone outcrops, the Trench Borehole where only thin drift is recorded. A deep drift-fi depression was found, contrasting with the Honnington area, where only drifts are mapped capping the higher ground. The succession revealed i follows:-

Upper Sands; loose gravelly sand and clayey sand; recorded only in Trench A1 and Donnington A2, maximum thickness drille (1.2m), but mapped over large areas inaccessible to t

Upper Boulder Clay; chocolate brown pebbly clay, maximum thickness recorded 1[illegible]'(4.0m) at Hoo Hall A1 and A3.

Laminated lake clay; Hoo Hall A1 only.

Middle Sands; wet brown sand, gravelly below; maximum thickness re 35'(10.6m) in Donnington A1.

Lower Boulder Clay; hard clay with small pebbles, as recorded at C Oak (see below); Hoo Hall A1 and A3 only, maximum thi recorded 9'(2.7m).

Laminated lake clay - Hoo Hall A3 only.

Donnington A2 lay on the feather edge of the depression; this revealed thin Upper Sands directly on Lower Mottled Sandstone, not separated by lacustrine deposits as in the Honnington Grange area.

SJ17 SW 35 - DONNINGTON A2
371220, 314380 DEPTH: 10.66m.

SJ71SW/34-2

Augering programme - B30 power auger

Honnington and Donnington area

Donnington A1 SJ 7056 1469. SJ71SW/34.

0-3'. Late glacial lacustrine deposit; clay, medium yellow-grey; soft sandy, unbedded.

5-13'. Upper Boulder Clay: boulder clay, rich purple-brown; rather soft sandy, pebbly.

13-48'. Middle Sands: sand, medium brown; largely LMS material, also m angular grains, small shell fragments; few pebbles to 2cm main quartz. Harder at 24', harder from 28'-33', hard at 44'. Coars downwards, with larger pebbles, to 5cm, including ?Cretaceous and rounded grit clasts.

Donnington A2 SJ 7122 1438. SJ71SW/35.

0-8'. Top few feet sandy soil, feather edge of a large outcrop of Mi glacial sands. Then Lower Mottled Sandstone.

8-35'. Lower Mottled Sandstone. Sand, red and yellow, rounded frosted Change at 21', to yellow coarse sand with pieces to 2cm of hard sandstone (rounded grains in siliceous matrix); few small clay patches. Becoming dark red and clayey at 33'. Hole abandoned a still drilling easily.

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3-8'. Boulder clay, then lacustrine clay.

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Laminated lake clay - Hoo Hall A3 only.

Donnington A2 lay on the feather edge of the depression; this revealed thin Upper Sands directly on Lower Mottled Sandstone, not separated by lacustrine deposits as in the Honnington Grange area.

SJ71 SW 1039   A518 DIVERSION PHASE 2   BH19
370792, 314360   DEPTH: 5m

BOREHOLE RECORD
(SCALE 1:50 m)

BORING COMMENCED 31.3.83
BORING COMPLETED 31.3.83
GROUND LEVEL 70.00m A.O.D.

TYPE OF BORING CABLE PERCUSSION
DIAMETER OF BORING 150mm
BOREHOLE CASING NOT USED

CLIENT: TELFORD DEVELOPMENT CORPORATION

SITE A518 DIVERSION PHASE 2 PKG 3
BOREHOLE 19
SHEET 1 OF 1

Description of strata	Legend	Water level	Thickness	Depth	Reduced level	Sample depth	Type	MC %	LL %	PL %	PI	N value	Bulk density	Dry density	Type	Cohesion	Angle of shearing resistance	Chemical analyses and remarks
				GL	70.00													
TOPSOIL.			0.40	0.40	69.60	0.45	B1											
Stiff red-brown slightly sandy silty CLAY with some angular to subrounded gravel. (GLACIAL).						1.00	U2	14.9					Diameter of sample to small for triaxial test					pH=7.6 Total SO3=0.??
			2.05			1.50	B3											Soluble SO3=0.02 g/l
						2.00	U4	11.6					2151	1879	100 mm	76	12	
Red-brown clayey silty fine medium SAND with occasional angular fragments of very weak friable sandstone.				2.45	67.55	2.45	B5											
						2.50	S6					24						pH=7.3 Total SO3<0.03
-3.50 with weak sandstone fragments. (BRIDGNORTH SANDSTONE).			2.55			3.50	S7					43						Chiselling for 1 hr below 3.50m
						4.00	B8											
						4.50	S9					60	Blows for 225mm penetration					Slight water added to assist drilling below 2.45m
				5.00	65.00													

Borehole Complete.
No water encountered.

Borehole dry 1.4.83

KEY
∇ GROUNDWATER LEVEL ON STRIKE
▼ FINAL GROUND WATER LEVEL
▲ STANDPIPE
PIEZOMETER
W — WATER SAMPLE
B — BULK SAMPLE

mm DIAMETER SAMPLE
U — UNDISTURBED SAMPLE
R — REMOULDED SPECIMEN
MC — NATURAL MOISTURE CONTENT
LL — LIQUID LIMIT
PL — PLASTIC LIMIT

PI — PLASTICITY INDEX
N — STANDARD OR CONE PENETRATION TEST RESULTS
T — UNDRAINED TRIAXIAL
M — MULTI STAGE UNDRAINED TRIAXIAL

D — DRAINED TRIAXIAL
CD — CONSOLIDATED DRAINED TRIAXIAL
CU — CONSOLIDATED UNDRAINED TRIAXIAL
UC — UNCONFINED COMPRESSION

S — STANDARD PENETRATION TEST
C — CONE PENETRATION TEST
V — VANE TEST
SO3 — SOLUBLE SULPHATE ANALYSIS

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BOREHOLE RECORD
(SCALE - 1:50 m)

BORING COMMENCED: 31.5.83
BORING COMPLETED: 31.5.83
GROUND LEVEL: 65.80m A.O.D.
TYPE OF BORING: CABLE PERCUSSION
DIAMETER OF BORING: 150mm
BOREHOLE CASING: NOT USED
CLIENT: TELFORD DEVELOPMENT CORPORATION
SITE: A518 DIVERSION PHASES 2 AND 3
BOREHOLE: 20
SHEET 1 OF 1

Description of strata	Thickness	Depth	Reduced level	Sample depth	Type	N values	Remarks
		GL	65.80	GL	B1		
FILL - Firm friable brown very sandy silty clay and clayey sand with occasional to rare ash fragments.	1.00	1.00	64.80	1.00	S1	9	pH=8.0; Total SO_3%=0.30; Soluble SO_3=0.61 g/l
Loose to medium dense brown silty fine medium SAND. (GLACIAL).	0.45	1.45	64.35	1.45	B2		
Firm friable red-brown very sandy CLAY with occasional angular to subangular gravel.	0.95			2.00	S2	27	
		2.40	63.40	2.40	B3		
--2.00 becoming stiff sandy with rare gravel. (GLACIAL).	0.75			3.00	S3	75 Blows for 150mm penetration	Chiselled for 1 hr. below 2.40m. Water added to assist drilling below 2.40m.
		3.15	62.65				
Highly weathered, very weak friable poorly cemented silty fine medium SANDSTONE. (BRIDGNORTH SANDSTONE).							

Borehole Complete.

No water encountered.

Borehole dry 3.6.83.

KEY: ▽ GROUNDWATER LEVEL AT STRIKE; ▼ FINAL GROUND WATER LEVEL; ▲ STANDPIPE; ● PIEZOMETER; W WATER SAMPLE; B BULK SAMPLE; U UNDISTURBED SAMPLE; R REMOULDED SPECIMEN; M/C NATURAL MOISTURE CONTENT; LL LIQUID LIMIT; PL PLASTIC LIMIT; PI PLASTICITY INDEX; N STANDARD OR CONE PENETRATION TEST RESULT; T UNDRAINED TRIAXIAL; M MULTISTAGE UNDRAINED TRIAXIAL; D DRAINED TRIAXIAL; CD CONSOLIDATED DRAINED TRIAXIAL; CU CONSOLIDATED UNDRAINED TRIAXIAL; UC UNCONFINED COMPRESSION; S STANDARD PENETRATION TEST; C CONE PENETRATION TEST; V VANE TEST; SO SOLUBLE SULPHATE ANALYSIS

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BOREHOLE RECORD
(SCALE :- 1.50 m)

BORING COMMENCED: 31.5.83
BORING COMPLETED: 31.5.83
GROUND LEVEL: 69.85m A.O.D.

TYPE OF BORING: CABLE PERCUSSION
DIAMETER OF BORING: 150mm
BOREHOLE CASING USED TO A DEPTH OF 1.70m

CLIENT: TELFORD DEVELOPMENT CORPORATION

SITE: A518 DIVERSION PHASE 2 AND 3
BOREHOLE: 21
SHEET 1 OF 1

DRILLING: Description of strata	Legend	Water level	Thickness	Depth	Reduced level	SAMPLES: Depth	Type	INDEX PROPERTIES: MC %	LL %	PL %	PI	% passing	DENSITIES: Wet	Dry	STRENGTH TESTS: Type	Cohesion	Angle	In situ chemical and other tests and remarks
				GL	69.85													
TOPSOIL.			0.50	0.50	69.35	0.50	B1											
FILL- Brown mottled clayey silty fine medium sand with some interbedded topsoil material and occasional coal and ash fragments.			0.50	1.00	68.85	1.00	B2					20						
Medium dense to dense brown slightly clayey silty fine medium SAND. --1.50 with some subangular to subrounded gravel. (GLACIAL).			1.00			1.50	B3											
			1.35	2.00	67.85	2.00	B4 B5					73	Blows for 2?5mm penetration					Chiselled below 1.70m for 1 hr. Water added to assist drilling below 2.00m
Highly weathered very weak friable, red-brown, poorly cemented silty fine medium SANDSTONE. (BRIDGNORTH SANDSTONE).				3.35	66.50	3.00	B6					75	Blows for 1?0mm penetration					

Borehole Complete

No water encountered

Borehole dry 1.6.83.

KEY
- ▽ — GROUND WATER LEVEL ON STRIKE
- ▼ — FINAL GROUND WATER LEVEL
- ▲ — STANDPIPE
- ● — PIEZOMETER
- W — WATER SAMPLE
- B — BULK SAMPLE
- mm DIAMETER SAMPLE
- U — UNDISTURBED SAMPLE
- R — REMOULDED SPECIMEN
- M/C — NATURAL MOISTURE CONTENT
- LL — LIQUID LIMIT
- PL — PLASTIC LIMIT
- PI — PLASTICITY INDEX
- N — STANDARD OR CONE PENETRATION TEST RESULT
- T — UNDRAINED TRIAXIAL
- M — MULTISTAGE UNDRAINED TRIAXIAL
- D — DRAINED TRIAXIAL
- CD — CONSOLIDATED DRAINED TRIAXIAL
- CU — CONSOLIDATED UNDRAINED TRIAXIAL
- UC — UNCONFINED COMPRESSION
- S — STANDARD PENETRATION TEST
- C — CONE PENETRATION TEST
- V — VANE TEST
- SO_3 — SOLUBLE SULPHATE ANALYSIS

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SJ 171 SW 1043 – A518 DIVERSION PHASE 2 BH23
370963, 314504 DEPTH: 4M

BOREHOLE RECORD
(SCALE :- 1:50 m)

BORING COMMENCED 25.5.83
BORING COMPLETED 26.5.83
GROUND LEVEL: 71.00m A.O.D.

TYPE OF BORING: CABLE PERCUSSION
DIAMETER OF BORING: 150mm
BOREHOLE CASING: NOT USED

CLIENT
WELSH DEVELOPMENT CORPORATION

SITE: A518 DIVERSION PHASE 2
BOREHOLE: 23 AOD 7
SHEET 1 OF 1

DRILLING | SAMPLES | RESULTS OF TESTS (INDEX PROPERTIES; DENSITIES; STRENGTH TESTS)

DESCRIPTION OF STRATA	WATER LEVEL	THICKNESS	DEPTH	REDUCED LEVEL	SAMPLES DEPTH	SAMPLES TYPE	INDEX PROPERTIES	DENSITIES	STRENGTH TESTS	REMARKS
TOPSOIL/FILL:- Dark grey brown clayey silty fine sand mixed with very stony clay with some angular to subrounded slag and sandstone fragments.		1.00	GL	71.00	GL	B1				pH=4.6 TOTAL SO_3=<0.0%
			1.00	70.00	1.00	D2 B2				
Dense brown very silty fine medium SAND. Slightly clayey in places with some hands (7-15cm) of fine stony silt and occasional subangular gravel (GLACIAL).		3.00	3.00	68.00	3.00	D3 B3				Chiselled below 3.00m for 2 hrs Water added to assist drilling below 3.00m
		1.00								
Dense red-brown slightly silty fine medium some coarse SAND. (DESICCATED SANDSTONE).			4.00	67.00	4.00	D4			15 blows for 150mm penetration	
Highly weathered, very weak friable red-brown slightly silty fine medium SANDSTONE. (DESICCATED SANDSTONE).		1.15	5.15	65.85	4.00	B4			15 blows for 150mm penetration	pH=8.9 Total SO_3=<0.0%

Borehole Complete.

No water encountered.

Borehole Dry 26.5.83.

KEY

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SJ71 SW1042 - A518 DIVERSION PHASE 2 BH22
370950, 314524 DEPTH: 4m.

BOREHOLE RECORD
(SCALE = 1:50 m)

BORING COMMENCED: 20.5.83
BORING COMPLETED: 24.5.83
GROUND LEVEL: 70.50m A.O.D.

TYPE OF BORING: CABLE PERCUSSION
DIAMETER OF BORING: 150mm
BOREHOLE CASING: USED TO A DEPTH OF 3.30m

CLIENT: TELFORD DEVELOPMENT CORPORATION

SITE: A518 DIVERSION PHASES 2 AND 3
BOREHOLE: 22
SHEET 1 OF 1

Description of strata	Legend	Water level	Thickness	Depth	Reduced level	Sample depth	Type	M/C %	LL %	PL %	PI	N blows	Bulk density	Dry density	Type	Cohesion	Angle of shearing resistance	Remarks
				GL	70.50													
TOPSOIL.			0.30	0.30	70.20	0.30	B1											pH=7.3 Total SO_3%=0.09
FILL- Orange-brown and red-brown silty fine medium sand with some topsoil material.			0.70	1.00	69.50	1.00	B2 / D3					20						
Medium dense brown silty fine medium some coarse SAND with very occasional subrounded gravel. (GLACIAL).			2.00			2.00	S4					28						Chiselling below 3.00m for 1 hr. Water added to assist drilling below 1.00m
				3.00	67.50	3.00	B5 / S6					75	Blows for 150mm penetration					
Highly weathered, very weak friable, red brown, poorly cemented slightly clayey silty fine medium some coarse SANDSTONE with very occasional subangular gravel. (BRIDGNORTH SANDSTONE).			1.15	4.15	66.35	4.00	S7					75	Blows for 100mm penetration					pH=7.0 Total SO_3%=0.25

Borehole Complete.

No water encountered.

Borehole dry 7.6.83.

KEY
- ▽ — GROUND WATER LEVEL ON STRIKING
- ▼ — FINAL GROUND WATER LEVEL
- ▲ — STANDPIPE
- ● — PIEZOMETER
- W — WATER SAMPLE
- B — BULK SAMPLE
- U — UNDISTURBED SAMPLE
- R — REMOULDED SPECIMEN
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- CU — CONSOLIDATED UNDRAINED TRIAXIAL
- UD — UNCONFINED COMPRESSION
- S — STANDARD PENETRATION TEST
- C — CONE PENETRATION TEST
- V — VANE TEST
- SO — SOLUBLE SULPHATE ANALYSIS

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SJ71SW1045 - A518 DIVERSION PHASE 2 BH 258A
370965, 314536 DEPTH: 17m

BOREHOLE RECORD
(SCALE :- 1:50 m)

BORING COMMENCED 31/5/83
BORING COMPLETED 31/5/83
GROUND LEVEL 78.50m A.O.D.

TYPE OF BORING Cable Percussion.
DIAMETER OF BORING 150mm.
BOREHOLE CASING Used to a depth of 5.00m

CLIENT: Telford Development Corporation

SITE: A518 Diversion, Phase 2 and 3
BOREHOLE [illegible]
SHEET 1 OF 1

Description of strata	Depth casing	Depth	Reduced level	Sample depth	Sample type	N (blows)	Results of tests	Remarks
		G.L.	78.50					
TOPSOIL.	0.30	0.30	78.25	0.30	S1			pH = 7.2 Total SO_3% = 0.05
Dense red brown silty fine medium SAND with occasional subangular gravel.	0.30	1.00	77.50	1.00	S2 T3	43		Water added to assist drilling below 1.00m. Sieve Analysis.
Dense brown fine medium some coarse SAND with occasional gravel and a thin band of firm clay at 2.50m (GLACIAL).				2.00	S4	50		
				2.50	B5 D6			pH = 8.0
	2.50			2.95	S7		Sample unsuitable for Triaxial Test.	Total SO_3% = 0.05
		3.50	75.00	3.50	S8	62		Chiselling below 3.50 for 2 hrs.
Dense red-brown silty SAND grading with depth into very weak friable slightly fine medium some coarse SANDSTONE. (BRIDGNORTH SANDSTONE.)				5.00	S9 S10	75	Blows for 150mm penetration.	pH = 6.8 Total SO_3% = 0.03
	5.00							
		6.30	74.40	6.00	S11	75	Blows for [illegible]mm penetration.	
Borehole complete. No water encountered. Borehole dry 7/6/83.								

KEY
- GROUND WATER LEVEL ON STRIKE
- FINAL GROUND WATER LEVEL
- STANDPIPE
- PIEZOMETER
- W — WATER SAMPLE
- B — BULK SAMPLE
- mm DIAMETER SAMPLE
- U — UNDISTURBED SAMPLE
- R — REMOULDED SPECIMEN
- MC — NATURAL MOISTURE CONTENT
- LL — LIQUID LIMIT
- PL — PLASTIC LIMIT
- PI — PLASTICITY INDEX
- N — STANDARD OR CONE PENETRATION TEST RESULT
- T — UNDRAINED TRIAXIAL
- M — MULTISTAGE UNDRAINED TRIAXIAL
- D — DRAINED TRIAXIAL
- CD — CONSOLIDATED DRAINED TRIAXIAL
- CU — CONSOLIDATED UNDRAINED TRIAXIAL
- UC — UNCONFINED COMPRESSION
- S — STANDARD PENETRATION TEST
- C — CONE PENETRATION TEST
- V — VANE TEST
- SO_3 — SOLUBLE SULPHATE ANALYSIS

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SJ71SW 1046 - A518 DIVERSION PHASE 2 BH26
371041, 314597 DEPTH: 5m

BOREHOLE RECORD
(SCALE 1:50 m)

BORING COMMENCED	27.5.83.
BORING COMPLETED	27.5.83.
GROUND LEVEL	69.90m A.O.D.
TYPE OF BORING	CABLE PERCUSSION
DIAMETER OF BORING	150mm
BOREHOLE CASING	USED TO A DEPTH OF 4.50m
CLIENT	TELFORD DEVELOPMENT CORPORATION
SITE	A5/A518 DIVERSION, PHASES 2 and 3
BOREHOLE	26
SHEET	1 OF 1

DRILLING: Description of strata	Thickness	Depth	Reduced level	SAMPLES: Depth	Type	MC %	N value	Results of tests	Remarks
		G.L.	69.90						
TOPSOIL.	0.20	0.20	69.70	[illegible]					
FILL - Grey brown sand with some dark grey silty clay and some angular slag fragments.	0.60	0.80	69.10	0.50	B 1	6.7		Sample unsuitable for triaxial test.	pH = 7.9 Total SO_3 % = 0.47 Soluble SO_3 = 0.05 g/l
Compact orange brown fine medium occasional coarse SAND.				1.00	B 2				
-- 1.50 becoming dense				1.55	S 3		36		
-- 2.00 becoming brown	2.70			2.01	B 4				
-- 2.50 becoming very dense with some angular to subrounded gravel.				2.50	S 5		50		
				3.00	B 6				
(GLACIAL).		3.50	66.40	3.50	S 7		75	75 blows 350mm penetration.	Chiselling below 3.50m for 1 hour.
Very weak friable red brown poorly cemented silty fine medium SANDSTONE with occasional subangular to subrounded gravel. (BRIDGNORTH SANDSTONE).				4.00	B 8				
	1.50			4.50	S 9		75		
		5.00	64.90						

Borehole complete.

No water encountered.

Borehole dry 7.6.83.

KEY

GROUNDWORKS (Soil Mechanics) Ltd.

BOREHOLE RECORD
(SCALE - 1:50 m)

BORING COMMENCED 27.5.83.
BORING COMPLETED 27.5.83.
GROUND LEVEL 69.80 M A.O.D.

TYPE OF BORING: CABLE PERCUSSION.
DIAMETER OF BORING: 150mm.
BOREHOLE CASING: USED TO A DEPTH OF 3.00m.

CLIENT: TELFORD DEVELOPMENT CORPORATION.

SITE: A.518 DIVERSION, PHASES 2 and 3
BOREHOLE: 27
SHEET 1 OF 1

Description of strata	Depth (m)	Reduced level	Sample depth	Sample type	N value	In situ chemical and other tests
TOPSOIL.	0.1 / 0.20	69.83 / 69.60				
FILL - Dark grey sandy silty clay with some angular to rounded gravel and some coal material.	0.80	69.00	0.50	B 1		pH = 7.0 Total Sulphate = 0.38 Soluble Sulphate = 0.02 g/l
Dense brown slightly clayey silty fine medium SAND, with occasional subangular to subrounded gravel. - 4.50 becoming very dense. (GLACIAL)			1.00	S 2	37	
			1.50	B 3		
			2.00	S 4	30	
			2.50	B 5		
			3.00	S 6	45	
			3.75	B 7		
			4.50	S 8	57	
	5.00	64.80				

Casing/water column: 0.20, 0.80, 4.70

Borehole complete.
No water encountered.
Borehole dry 27.5.83.

KEY

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SJ71SW1048 - A518 DIVERSION PHASE 2 BH 28
371169,314720 DEPTH: 5m

BOREHOLE RECORD
(SCALE - 1 50 m)

BORING COMMENCED 31.5.83.	TYPE OF BORING: CABLE PERCUSSION	CLIENT:	SITE A.518 DIVERSION, PHASES 2 AND 3
BORING COMPLETED 31.5.83.	DIAMETER OF BORING: 150mm	TELFORD DEVELOPMENT	BOREHOLE: 28
GROUND LEVEL 69.50m A.O.D.	BOREHOLE CASING, USED TO A DEPTH OF 3.20m	CORPORATION.	SHEET 1 OF 1

DRILLING						SAMPLES		RESULTS OF TESTS										
								INDEX PROPERTIES					DENSITIES		STRENGTH TESTS			
DESCRIPTION OF STRATA	Legend	Water level	Thickness	Depth	Reduced level	Depth	Type	MC %	LL %	PL %	PI	N blows	Wet	Dry	Type	Cohesion	Angle of shearing resistance	In-situ tests, other tests and remarks
				G.L.	69.50	G.L.	B 1											pH = 7.5
FILL - Medium dense dark grey black silty clay with much ash, slag and metal fragments. Sandy in places with occasional coal material.			1.30			0.50	C 2					11						Total SO_3% = 0.03
				1.30	68.20	1.35	B 3											
Stiff red brown slightly sandy silty clay with some angular to subangular gravel.			1.20			1.50	U 4	14.7					2195	1910	M 105 mm	124	5	
-- 1.95 becoming very sandy with some irregular clayey sand bands (GLACIAL).						1.95	P 5											
				2.50	67.00	2.50	B 6 S 7					30						
Dense brown, fine medium coarse SAND. Occasional to some angular to subrounded gravel becoming very dense below 4.50m. (GLACIAL).			2.50			3.50	S 8					50						Water added to assist drilling.
						4.50	S 9					60						
				5.00	64.50													
Borehole complete.																		
No water encountered.																		

KEY
- ▽ — GROUND WATER LEVEL IF STRUCK
- ▼ — FINAL GROUND WATER LEVEL
- ▲ — STANDPIPE
- ◆ — PIEZOMETER
- W — WATER SAMPLE
- B — BULK SAMPLE
- 38/(U1) — mm DIAMETER SAMPLE
- U — UNDISTURBED SAMPLE
- R — REMOULDED SPECIMEN
- M/C — NATURAL MOISTURE CONTENT
- LL — LIQUID LIMIT
- PL — PLASTIC LIMIT
- PI — PLASTICITY INDEX
- 'N' — STANDARD OR CONE PENETRATION TEST RESULT
- T — UNDRAINED TRIAXIAL
- M — MULTI STAGE UNDRAINED TRIAXIAL
- D — DRAINED TRIAXIAL
- CD — CONSOLIDATED DRAINED TRIAXIAL
- CU — CONSOLIDATED UNDRAINED TRIAXIAL
- UO — UNCONFINED COMPRESSION
- S — STANDARD PENETRATION TEST
- C — CONE PENETRATION TEST
- V — VANE TEST
- SO3 — SOLUBLE SULPHATE ANALYSIS

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SJ71SW1049 – A158 DIVERSION PHASE 2 29
371235, 314782 DEPTH: 5m.

BOREHOLE RECORD

(SCALE :- 1:50 m)

BORING COMMENCED: 13/5/83
BORING COMPLETED: 15/5/83
GROUNDLEVEL: 69.30 m A.O.D.

TYPE OF BORING: Cable Percussion.
DIAMETER OF BORING: 150mm
BOREHOLE CASING: Used to a depth of 4.70m

CLIENT: Telford Development Corporation

SITE: A518 Diversion phase 2 and 3
BOREHOLE: 19
SHEET 1 OF 1

Description of strata	Legend	Water level	Casing depth	Depth	Reduced level	Sample depth	Sample type	MC %	LL %	PL %	PI	N value	Bulk density	Dry density	Type	Cohesion	Angle of shearing resistance	In situ chemical and other tests
Topsoil:Fill - Brown silty fine medium sand with some angular to subrounded gravel and occasional slag fragments			0.80	GL	69.30	GL	B1											pH = 7.2; Total SO_3% = 0.17; pH = 5.6; Total Sulphate% = 0.31; Soluble Sulphate = 0.1
				0.80	68.50	0.80	B2											
Fill :- Firm friable grey and brown mottled very sandy silty clay with some angular to subrounded gravel, very occasional brick fragments and root material.			0.20	1.00	68.30	1.00	U3	17.9	28	14	12		2211	1893	N 105 MT	32	13	
			1.00			1.50	B4											
Firm brown silty CLAY and sandy CLAY with some angular to subrounded gravel. Occasional pockets of clayey sand. (GLACIAL)				2.00	67.30	2.00	B5											
							S6					8						
			2.50			3.00	D7											
Loose to medium dense brown clayey silty fine medium SAND with occasional subrounded gravel, becoming clayey in places. (GLACIAL).				3.50	65.80	3.50	D8											
							S9					31						
			3.50			4.50	S10					48						
Dense brown slightly silty fine medium coarse SAND with some subangular to subrounded gravel. (GLACIAL).				5.00	64.30													

Borehole complete
No water encountered.

KEY
▽ GROUND WATER LEVEL ON STRIKE
▼ FINAL GROUND WATER LEVEL
▲ STANDPIPE
● PIEZOMETER
W — WATER SAMPLE
B — BULK SAMPLE
$\frac{34}{101}$ 100mm DIAMETER SAMPLE
U — UNDISTURBED SAMPLE
R — REMOULDED SPECIMEN
M.C. — NATURAL MOISTURE CONTENT
LL — LIQUID LIMIT
PL — PLASTIC LIMIT
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SO_3 — SOLUBLE SULPHATE ANALYSIS

GROUNDWORKS (Soil Mechanics) Ltd.

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Rayet, Harjot

From: Mark North [mark.north@mineralproducts.org]
Sent: 06 March 2017 10:40
To: Rayet, Harjot
Subject: FW: Telford and Wrekin Council EiP
Attachments: Telford and Wrekin Modifications - objections of MPA,March 2017.pdf

Dear Harjot

I refer to your call earlier today

To clarify the MPA are now content with the council's revised position on safeguarding .

Best wishes
Mark

Mark E North
Director of Planning-Aggregates and Production
Mineral Products Association

Registered Office: 38-44 Gillingham Street, London, SW1V 1HU

T 0207 963 8011 **M** 07568 427719 **W** www.mineralproducts.org **F** 0207 963 8001

From: Mark North
Sent: 06 March 2017 08:41
To: 'Rayet, Harjot'
Subject: RE: Telford and Wrekin Council EiP

Dear Harjot

I refer to your email below with attachments and subsequent telephone calls .

In respect of the safeguarding issue the Mineral Products Association has nothing further to add.

In respect of the strategic approach to minerals please see the attached response on behalf of the Mineral Products Association,

Yours sincerely

Mark

Mark E North
Director of Planning-Aggregates and Production
Mineral Products Association

Registered Office: 38-44 Gillingham Street, London, SW1V 1HU

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https://twitter.com/MineralProduct

From: Rayet, Harjot [mailto:Harjot.Rayet@telford.gov.uk]
Sent: 24 February 2017 16:28
To: Mark North
Cc: 'Adrian Cooper'; Maher, Vincent
Subject: Telford and Wrekin Council EiP
Importance: High

Dear Mr North

I understand that you have spoken to Adrian Cooper this morning and are aware of the particulars.

Many thanks for taking the time to talk with me, particularly given your current time constraints. As per our conversion, I am sending you this email. Below is a table, highlighting where the Inspector as requested further information on which we are required to liaise with the MPA:

Council to consider Option 1: Show Minerals Safeguarding Areas across urban areas OR Option 2: providing additional evidence to justify why MSA are not shown across the urban areas (Telford and Newport). If option 2 then provide plan of historical mineral workings in the urban areas • Provide any additional further evidence e.g. areas of mineral sterilised by subsequent development and show any pockets for potential mineral recovery that might remain. • Show areas where mineral is no longer present in the urban areas • Rewrite ER2 to reasoned justification paras 10.2.1.2 to 10.2.1.4 to set out revised approach to MSA's and clarify what the approach is to mineral extraction outside the MSA. • Will require changes to the Policies Map. Change the shadings for mineral buffer zones on the relevant maps – because not easily identified.	Council are minded to go with Option 2. We are p mapped evidence to the Inspector providing evide deposits in the urban areas of Telford and Newpo the built up area, section 7(1) consents and enviro There are no viable economic pockets. This map on **Monday**. Added a paragraph in ER2 to clarify workings of M area – see attached 'ER2 Mods.doc'
Review Statement of Common Ground with Mineral Products Association around issue of strategic approach to minerals planning in particular around LAA, Duty to Cooperate, minerals hierarchy etc.	See attached titled 'Modification to ER3 and ER4. now clarified our strategic approach to minerals a is the original SoCG we signed with the MPA.
Add latest LAA from Shropshire AMR Nov 2016 to TWC evidence base	Can be found here: http://www.telford.gov.uk/downloads/file/5340/k24 _local_aggregates_assessment_2015-16

If at all possible would you be able to respond by end of play 28 February 2017?

If you have any questions or queries please do not hesitate to contact me. I look forward to hearing from you.

Kind regards

Harjot Rayet
Senior Policy Officer

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Development Management
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