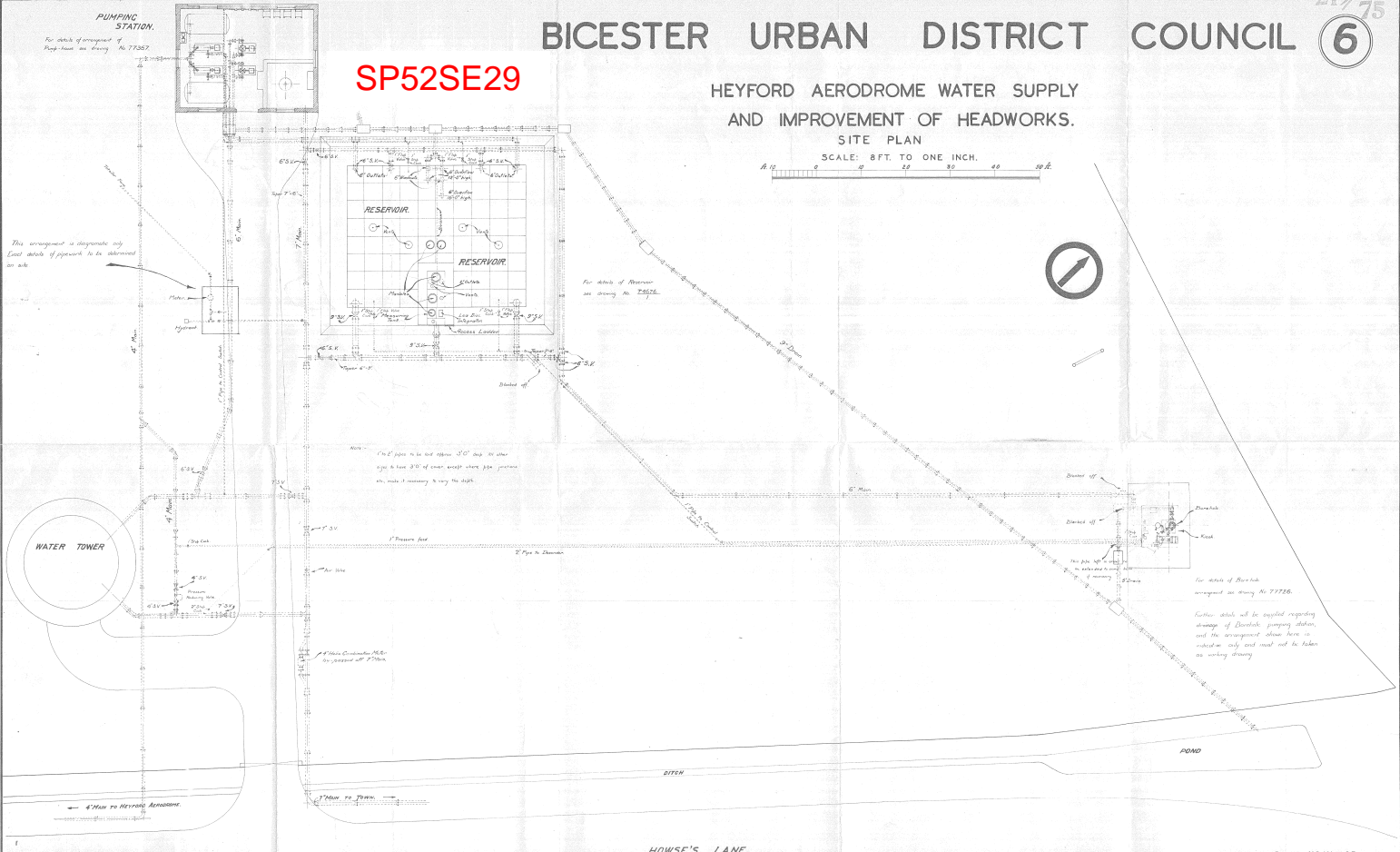
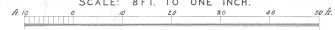


SP52SE29

HEYFORD AERODROME WATER SUPPLY AND IMPROVEMENT OF HEADWORKS.

SITE PLAN

SCALE: 8 FT. TO ONE INCH.



DRAWING No. DRAWN BY: [initials] TRACED BY: [initials] CHECKED BY: [initials]

For details of Reservoir arrangement see drawing No. 77376.

Further details will be supplied regarding drainage of Reservoir pumping station, and the arrangement of valves here to indicate on only need need not be taken as working drawing.

WHERST BAYMAN M.C. M.A.S.T.C.E.
 CONSULTING ENGINEER
 BRISTOLTON BATH,
 33 VICTORIA STREET WESTMINSTER S.W.
 JULY 1928

SP52SE29

219/75.1
SP52|19



British
Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

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[SP52SE BJ 29 .]

SP52SE29 [5715 2388] Bicester Town No 2 Well (1936) Datum +85.3 (Ground level)

	<i>Depth ft</i>	<i>Thickness m</i>	<i>Depth m</i>
Forest Marble Formation	<i>17.00</i>	5.18	5.18
White Limestone Formation: Bladon Member and Ardley Member	<i>49.50</i>	9.91	15.09
Sipton Member	<i>66.50</i>	5.18	20.27
Rutland Formation	<i>90.00</i>	7.16	27.43
Taynton Limestone Formation	<i>102.00</i>	3.66	31.09
Sharp's Hill Formation and 'White Sands'	<i>124.00</i>	6.71	37.80
Northampton Sand Formation	<i>127.00</i>	0.91	38.71
Whitby Mudstone Formation	<i>142.50</i>	4.72	43.43

Stratigraphical classification by M G Sumner, May 1999.

RECORD OF WELL (SHAFT OR BORE)

Gowell Farm no 2.

~~(Horse Farm no 2)~~

SP52/19B

1" N.S. 219
4-8.E.
219

Town or Village Bicester County Oxon. Six-inch quarter sheet XXI 1 N

Exact site See 6 inch & 1/4 inch scale plans attached in parish of (SP52/19B) Bicester U.D.C. (A rough sketch-map or a tracing from map is very desirable)

Level of ground surface above sea-level (O.D.) 280.50 ft. If well starts below ground surface, state how far

Shaft 440 ft., diameter 3 1/2" ft. Bore 142 1/2 ft. Diameter of bore: at top 20 ins.; at bottom 23 ins.

Details of permanent lining tubes (internal diameters preferred). 24 inch inside diam. to 187.34 O.
Remainder 22 3/8 inch inside diam. to 141.00 C

Water struck at depths of (feet) SP 5715 2388

Rest-level of water below top of well 226.00 feet. o.d. Suction at 141.69 feet. o.d. Yield on 14 hours' tes
7,069 gallons per hour (with pump of capacity - g.p.h.); depressing water level to 92 fee

below top. Time of recovery - hrs. Amount normally pumped daily - g.p.h. for - hours

Quality (attach copy of analysis if available)

Sunk by Francis Cementing Co Ltd for Bicester U.D.C. Date of well 1936

Information from Bicester U.D.C. + Francis Cementation Co + W.H. Belman, Esq. + C.M.C

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA (and any additional remarks).	THICKNESS		DEPTH	
		Feet.	Inches.	Feet.	Inches.
<u>Make ground, 4 in</u> <u>trough clay, with</u>	<u>Surface soil</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>
<u>2 old Cornish</u> <u>mass</u>	<u>Yellow clay</u> <u>FmB</u>	<u>10</u>	<u>0</u>	<u>11</u>	<u>0</u>
<u>? Wychnor Beds?</u>	<u>Blue clay</u>	<u>6</u>	<u>0</u>	<u>17</u>	<u>0</u> ⁵⁻¹⁸
<u>Ramble Beds</u> <u>13' 6"</u>	<u>White rock</u>	<u>2</u>	<u>0</u>	<u>19</u>	<u>0</u> ⁵⁻⁷⁹
	<u>Blue clay</u>	<u>7</u>	<u>0</u>	<u>26</u>	<u>0</u>
	<u>Grey shale</u> <u>whk</u>	<u>1</u>	<u>6</u>	<u>27</u>	<u>6</u> ⁸⁻³⁸
	<u>Grey rock</u> <u>(bluish)</u>	<u>3</u>	<u>6</u>	<u>31</u>	<u>0</u> ⁹⁻⁸⁵
	<u>Grey shale</u> <u>Adkly</u>	<u>1</u>	<u>6</u>	<u>32</u>	<u>6</u> ⁹⁻⁹¹
<u>Fimbriata -</u> <u>walteri beds 9'</u>	<u>Grey clay rock</u>	<u>8</u>	<u>0</u>	<u>40</u>	<u>6</u> ¹²⁻³⁴
	<u>Grey calc. clay</u>	<u>1</u>	<u>0</u>	<u>41</u>	<u>6</u> ¹²⁻⁶⁵
	<u>Grey rock</u>	<u>7</u>	<u>0</u>	<u>48</u>	<u>6</u> ¹⁴⁻⁷⁸
<u>White beds 31' 6"</u>	<u>Sandy shale</u>	<u>1</u>	<u>0</u>	<u>49</u>	<u>6</u> ¹⁵⁻⁰⁹
	<u>Grey rock with bands of shale.</u> <u>whk (shaly)</u>	<u>17</u>	<u>0</u>	<u>66</u>	<u>6</u> ²⁰⁻²⁷
	<u>Grey sandy clay</u>	<u>6</u>	<u>6</u>	<u>73</u>	<u>0</u> ²²⁻²⁵
	<u>Grey rock</u>	<u>5</u>	<u>0</u>	<u>78</u>	<u>0</u> ²³⁻²⁷
<u>Hampden (Beds)</u> <u>13'</u>	<u>Clay</u> <u>Rm</u>	<u>3</u>	<u>6</u>	<u>81</u>	<u>6</u> ²⁴⁻⁸⁴
	<u>Shale with bands of clay rock</u>	<u>4</u>	<u>6</u>	<u>86</u>	<u>0</u> ²⁶⁻²⁴
<u>Tangra Stone</u> <u>10'</u>	<u>Grey rock with bands of shale.</u>	<u>4</u>	<u>0</u>	<u>90</u>	<u>0</u> ²⁷⁻⁴³
	<u>Grey rock</u> <u>IV</u>	<u>12</u>	<u>0</u>	<u>102</u>	<u>0</u> ³¹⁻⁰³
<u>Sweetford & Hook</u> <u>Alston Beds</u> <u>25'</u>	<u>light grey sand.</u> <u>WS</u>	<u>16</u>	<u>0</u>	<u>118</u>	<u>0</u> ³⁵⁻²⁷
	<u>light sandstone</u>	<u>6</u>	<u>0</u>	<u>124</u>	<u>0</u> ³⁷⁻⁸⁰
	<u>Dark sandstone</u> <u>?WS</u>	<u>3</u>	<u>0</u>	<u>127</u>	<u>0</u> ³⁸⁻⁷¹
<u>4. Kies 8' 15' 6"</u>	<u>Dark clay</u> <u>whm</u>	<u>15</u>	<u>6</u>	<u>142</u>	<u>6'</u> <u>430 43m</u>
<u>R.V.M.</u> <u>16.3.39</u>	See letter from H.F. Smith Esq., Surveyor, Bicester U.D.C. dated 26. vi. 40, in 9509/28. P.W.L. 94' lfp. Suction 108 1/2' lfp. AWW 26. vi. 40.				

	THICKNESS		DEPTH	
	Feet	Inches	Feet	Inches
?			13	6
Blue clay	7	-	20	6
Gray rock	11	6	32	-
" " , broken	5	-	37	-
" " " , w. vert. joints	1	6	38	6
Gray rock	37	6	76	-
Rock ; sandy clay	4	-	80	-
Shale w. bands of gray rock	6	-	86	-
Clay	1	6	87	6
Gray rock w. soft joints	2	6	90	-
Gray rock	5	6	95	6
" " , dark	11	-	106	6
Soft rock	5	-	111	6
Soft sand	7	-	118	6
Light gray sand	4	-	122	6
Light sandstone	4	-	126	6
Dark " w. bands of sandy clay			5	
	4	-	130	6
Dark clay	10	-	140	6

RECORD OF WELL (SHARED SURFACE)

At SP52 SE9 5746 24 24
These are the site a location reference number, which

Town or Village Bicester

County Oxfordshire Six-inch quarter sheet 23 NW

For Air Ministry and British EDC

Exact site of well 170 yds N.E. of Lords Farm, and
20 yds S.W. of stream

Attach a tracing from a map, or a sketch-map, if possible.

Level of ground surface above sea-level (O.D.) 260 feet.

SP52SE9

Is well-top at ground level? Y If not, state how far above; below; _____ feet.

Shaft _____ ft., diameter _____ ft. Details of headings _____

Bore _____ ft.; diameter of bore: at top 15 ins.; at bottom 6 ins.

Lengths, diameters, perforations, etc., of lining tubes 137 ft x 15 in, from surface.

Water struck at depths, below well-top, of (feet) _____

TEST DETAILS { Rest-level of water _____ ft. above well-top. Suction at _____ ft. Yield on _____ hours' days' pumping _____ gallons per _____ (max. capacity of pump _____ g.p.h.), with depression of _____ feet. Recovery to _____ in _____ mins. hours.

WORKING CONDITIONS { Rest-level of water in _____ (month), _____ (year), _____ ft. above well-top. Highest " in _____ (month), _____ (year), _____ ft. above below. Lowest " in _____ (month), _____ (year), _____ ft. above below. Suction at _____ ft. Rate of pumping _____ galls. per _____ for _____ hours per day. with average depression of _____ ft. Recovery to _____ in _____ mins. hours.

Quality of water (attach copy of analysis if available) _____

Well made by _____ Date of well _____

Information from _____

ADDITIONAL NOTES.

Yield from depth of 137 ft, 1000 g.p.h.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.	Date received.	G.S.M. Office File No.	1" N.S. Map No.	1" O.S. Map No.	Site marked (use symbol) on 1" Map. on 6" Map.	
		3/3/41	53/36	219	45SE.	o	o

(17208) Wt.42901/0877 10,000 2/41 A.& E.W.Ltd. Gp.686

If measurements start below
ground surface, state how far... ..

Feet Inches
... ..

Feet Inches
... ..

Combrash	Clay, limestone fragments	7		7	
	Limestone	6	6	13	6
Forst Marble	Clay	1		14	6
	Limestone	3		17	6
	'Marble' rock	2	6	20	
	Hard blue clay	2		22	
	'Marble' rock	1		23	
White Limestone	Hard clay and rock fragments	5	6	28	6
	Limestone	4		32	6
	Alternating beds of grey shale rock	33	6	66	
Hampshire Marble Bed	Blue rock	3	6	69	6
	Blue clay bands of rock	4		73	6
Taynton Stone Swains on Hook system bed	Alternating bands of blue rock & grey shale	17	6	90	
	Hard sandstone	5	6	95	6
	Alternating bands of grey rock bands	26		121	6
Upper lias	Hard clay and flint	15	6	137	
	Blue clay & clay stone	5		142	
	Blue clay	16	6	158	6
	Blue clay stone	13	6	172	
	'Marlstone'	1		173	
Middle lias	Hard grey rock	3		176	
	Blue clay	58		234	
	Rock conglomerate *	8		242	
	Blue lias	4		246	
Lower lias	Conglomerate *	8		254	
	Blue clay and bands of marl	8		262	

∅. Probably 16. 6., on depth of bore is correct at 262 ft

*. M. Conglomerate, but muddy limestone: specimen seen in field by T.B.C. 3/3/61

#. Mr. Prof. H. L. Hawkins classifies this under a group

Drift	6	6	6	6
Combrash	7	6	14	
61 v. v. v.	24		58	
U. Estuarine Beds	37	6	95	6
Northampton Sand	24		119	6
Upper lias	114		233	6
middle lias	28		261	6

No good specimens were available either to Mr. G. S. or to Prof. Hawkins. The survey classification is more in accord with the latter.

~~CONFIDENTIAL~~
RECORD OF WELL (SHAFT OR BORE)

219
122

SP52SE9

BICESTER.

At _____
Town or Village Bicester. Oxon
County Oxfordshire. Six-inch quarter sheet
For Mr. Air Ministry. Directorate of Works
No. 11. Area, Abingdon, Berks.
Exact site of well Lords Farm,
Nr. Bicester.

{ Attach a tracing from a map, or a sketch-map, if possible.

Level of ground surface above sea-level (O.D.) _____ feet.

SP52 / 18

Is well-top at ground level? _____ If not, state how far above; _____ feet.
below; _____

Pit _____
Shaft 6 ft., diameter 6' x 6' Details of headings _____

Bore 262 ft.; diameter of bore: at top 18 ins.; at bottom 15 ins.

Lengths, diameters, perforations, etc., of lining tubes _____
33' 6" of 18" top 2' 0" b.s. 89' 1" of 15" top 1' 1" b.s.

Water struck at depths, below well-top, of (feet) 13', 90', 246'

TEST DETAILS { Rest-level of water 12' ft. above well-top. Suction at _____ ft. Yield on _____ hours' days'
36' ft. below
Month April pumping 1,350 gallons per hour (max. capacity of pump _____ g.p.h.),
Year 1941 with depression of 30' feet. Recovery to _____ in _____ mins. hours.

WORKING CONDITIONS { Rest-level of water in _____ (month), _____ (year), _____ ft. above well-top.
below
Highest ,, in _____ (month), _____ (year), _____ ft. above below
Lowest ,, in _____ (month), _____ (year), _____ ft. above below
Suction at _____ ft. Rate of pumping _____ galls. per _____ for _____ hours per day.
with average depression of _____ ft. Recovery to _____ in _____ mins. hours

Quality of water (attach copy of analysis if available) _____

Well made by LeGrand Sutcliffe & Gell Ltd. Date of well April 1941
Information from Southall.

ADDITIONAL NOTES.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W.7.

Date received.	G.S.M. Office File No.	1" N.S. Map No.	1" O.S. Map No.	Site marked (use symbol) on 1" Map. on 6" Map.	

(17208) Wt.42901/0877 10,000 2/41 A.& E.W.Ltd. Cp.686

4

(For Survey use only)

GEOLOGICAL
CLASSIFICATION

SP52SE9

NATURE OF STRATA

If measurements start below
ground surface, state how far... ..

THICKNESS

feet inches
... ...

DEPTH

feet inches

Clay and Limestone Flints (very hard)	6	6	6	6
Limestone Rock.	6	6	13	0
Hard Clay.	1	0	14	0
Limestone Rock.	3	0	17	0
Marble Rock Formations.	3	0	20	0
Hard Blue clay and flints	2	0	22	0
Marble Rock Formation.	1	0	23	0
Hard Clay and Flints.	5	6	28	6
Limestone Formation.	4	0	32	6
Grey shale.	3	0	35	6
Grey Rock.	2	0	37	6
Greys shale.	2	6	40	0
Grey Rock.	2	0	42	0
Hard Clay.	1	0	43	0
Grey Shale with hard bands.	4	6	47	6
Grey Rock.	2	0	49	6
Hard Clay.	6	0	55	6
Grey Rock.	2	6	58	0
Grey Shale.	4	0	62	0
Hard Clay.	2	0	64	0
Grey Rock.	1	6	65	6
Grey Shale.	1	0	66	6
Blue Rock.	3	6	70	0
Hard blue Clay with hard bands.	4	0	74	0
Blue rock.	2	0	76	0
Greys shale.	4	6	80	6
Hard clay with hard bands	3	6	84	0
Dark Grey Rock(not too hard)	6	0	90	0
Hard sandstone.	5	6	95	6
Dark Grey Rock.	2	0	97	6
Hard Sandstone.	3	6	101	0
Dark Grey Rock.	3	0	104	0
Sandstone.	5	0	109	0
Dark Grey Rock.	2	0	111	0
Sandstone.	2	0	113	0
Dark Grey Rock.	1	6	114	6
Sandstone.	2	6	117	0
Dark grey Rock.	1	0	118	0
Sandstone.	1	6	119	6
Hard Clay and Flints.(small)	0	6	120	0
Clay and flints.	6	0	126	0
Clay and Claystones.	11	0	137	0
Blue Lias Clay & claystones.	5	0	142	0
Blue lias Clay.	16	6	158	6
Blue lias clay and claystones.	13	6	172	0
Marlstone.	1	0	173	0
Hard Grey Rock.	3	0	176	0
Blue Lias Clay	58	0	234	0
Rock formation.	1	0	235	0
Conglomeration of ironstone, rock & clay.	7	0	242	0
Blue Lias Clay.	4	0	246	0
Conglomerate rock, Ironstone, Marlstone ' clay	3	0	249	0
Conglomeration of ironstone, marlstone & clay.	5	0	254	0
Blue lias clay & bands of marlstone about every 3"	8	0	262	0
	262	0	262	0

LeGrand, Sutcliff & Gell Ltd.,

RECORD OF WELL (SHARPLESS BORE)

How far this site is from a boundary reference number, which is SP52 SE 24 24
 At Arnt Farm

SP52SE9

Town or Village Bicester

County Oxfordshire Six-inch quarter sheet 23 NW

For Oil Mining and Research Ltd

Exact site of well 170 yds N.E. of Arnt Farm, and 20 yds South of v. lane (Attach a tracing from a map, or a sketch-map, if possible.)

Level of ground surface above sea-level (O.D.) 260 (79.24m) feet.

Is well-top at ground level? Y If not, state how far above; below;

Shaft _____ ft., diameter _____ ft. Details of headings _____

Bore _____ ft.; diameter of bore: at top 5 ins.; at bottom 6 ins.

Lengths, diameters, perforations, etc., of lining tubes 137 ft x 1.5 in. from surface.

Water struck at depths, below well-top, of (feet) _____

TEST DETAILS { Rest-level of water _____ ft. above well-top. Suction at _____ ft. Yield on _____ hours' days' pumping _____ gallons per _____ (max. capacity of pump _____ g.p.h.), with depression of _____ feet. Recovery to _____ in _____ mins. hours.

WORKING CONDITIONS { Rest-level of water in _____ (month), _____ (year), _____ ft. above below well-top. Highest " in _____ (month), _____ (year), _____ ft. above below. Lowest " in _____ (month), _____ (year), _____ ft. above below. Suction at _____ ft. Rate of pumping _____ galls. per _____ for 12 hours per day. with average depression of _____ ft. Recovery to _____ in _____ mins. hours.

Quality of water (attach copy of analysis if available) _____

Well made by _____ Date of well _____

Information from _____

ADDITIONAL NOTES.

Yield from depth of 137 ft, 1000 gph.



If measurements start below ground surface, state how far...
Feet Inches Feet Inches

		Feet	Inches	Feet	Inches
Limestone	Clay, limestone fragments	7		7	0
	Limestone	6	6	13	6
Four Fossil	Clay	1		14	6
	Limestone	3		17	6
	Marble rock	2	6	20	6
White Limestone	Hard blue clay	2		22	6
	Marble rock	1		23	6
	Hard clay and rock fragments	5	6	28	6
	Limestone	4		32	6
Hampton Marble rock	Alternating beds of grey shale rock	83	6	66	
	Blue rock	3	6	69	6
Largest Stones 1100 ft 1100 ft	Blue clay bands of rock	4		73	6
	Alternating bands of blue rock & grey shale	17	6	90	6
	Hard sandstone	5	6	95	6
	Alternating bands of grey rock bands	26		121	6
Upper Lias	Hard clay and flint	15	6	137	
	Blue clay & clay stones	5		142	
	Blue clay	16	6	158	6
	Blue clay stones	13	6	172	
	"Marble rock"	1		173	
Middle Lias	Hard grey rock	3		176	6
	Blue clay	58		234	
	Rock conglomerate *	8		242	
Lower Lias	Blue lias	4		246	
	Conglomerate *	8		254	
Clay to 1100 ft	Blue clay and bands of marl	8		262	
	p. Probably to be in depth of bore is correct at 262 ft				
* M. conglomerate, but muddy limestone: specimen seen in pits to 1100 ft					
* The R.P. H.L. Hawkins classifies the used as follows					
	Dry	6	6	268	6
	Chert	24	6	292	6
	U. Lias	37	6	329	6
	W. Lias	24		353	6
	Upper lias	114		467	6
	middle lias	28		495	6
No good specimens were available either to the G.S. or to the H.L. Hawkins					
The same classifies in more in accord with the classification in the G.S. report.					

SP52SE9

RECORD OF WELL (SHAFT OR BORE)

219
122

BICESTER.

SP52SE9

At _____
 Town or Village Bicester. Oxon
 County Oxfordshire. Six-inch quarter sheet _____
 For Mr. Air Ministry. Directorate of Works
No. 11. Area, Abingdon, Berks.
 Exact site of well Lords Farm,
Nr. Bicester.

Attach a tracing from a map, or a sketch-map, if possible.

Level of ground surface above sea-level (O.D.) _____ feet.

Is well-top at ground level? _____ If not, state how far above; _____ feet.
 below; _____ feet.

Pit _____
 Shaft 6 ft., diameter 6' x 6' Details of headings _____

Bore 262 ft.; diameter of bore: at top 18 ins.; at bottom 15 ins.

Lengths, diameters, perforations, etc., of lining tubes _____
33' 6" of 18" top 2' 0" b.s. 89' 1" of 15" top 1' 1" b.s.

Water struck at depths, below well-top, of (feet) 13', 90', 246'.

TEST DETAILS { Rest-level of water 12' ft. above well-top. Suction at _____ ft. Yield on _____ hours' days' _____
36' ft. below well-top.
 Month April pumping 1,350 gallons per hour (max. capacity, of pump _____ g.p.h.),
 Year 1941 with depression of 30' feet. Recovery to _____ in _____ mins. hours.

WORKING CONDITIONS { Rest-level of water in _____ (month), _____ (year), _____ ft. above well-top.
 below well-top.
 Highest " in _____ (month), _____ (year), _____ ft. above " below "
 Lowest " in _____ (month), _____ (year), _____ ft. above " below "
 Suction at _____ ft. Rate of pumping _____ galls. per _____ for _____ hours per day.
 with average depression of _____ ft. Recovery to _____ in _____ mins. hours.

Quality of water (attach copy of analysis if available) _____

Well made by LeGrand Sutcliffe & Gell Ltd. Date of well April 1941
Southall.
 Information from _____

ADDITIONAL NOTES.

LOG OF STRATA OVERLEAF

GEOLOGICAL CLASSIFICATION

If measurements same as above ground surface, state how far...

Feet Inches Feet Inches

		Feet	Inches	Feet	Inches	
FML	Clay and Limestone Flints (very hard)	6	6	6	6	1.98
	Limestone Rock.	6	6	13	0	3.96
	Hard Clay.	1	0	14	0	4.27
	Limestone Rock.	3	0	17	0	5.18
	Marble Rock Formations.	3	0	20	0	6.1
	Hard Blue clay and flints	2	0	22	0	6.71
	Marble Rock Formation.	1	0	23	0	7.01
wHL	Hard Clay and Flints.	5	6	28	6	8.69
	Limestone Formation.	4	0	32	6	9.91
	Grey shale.	3	0	35	6	10.82
	Grey Rock.	2	0	37	6	11.43
	Greys shale.	2	6	40	0	12.19
	Grey Rock.	2	0	42	0	12.8
	Hard Clay.	1	0	43	0	13.11
	Grey Shale with hard bands.	4	6	47	6	14.44
	Grey Rock.	2	0	49	6	15.07
	Hard Clay.	6	0	55	6	16.92
	Grey Rock.	2	6	58	0	17.68
	Grey Shale.	4	0	62	0	18.90
	Hard Clay.	2	0	64	0	19.51
	Grey Rock.	1	6	65	6	19.96
	Grey Shale.	1	0	66	6	20.27
Rld	Blue Rock.	3	6	70	0	21.34
	Hard blue Clay with hard bands.	4	0	74	0	22.56
	Blue rock.	2	0	76	0	23.16
	Greys shale.	4	6	80	6	24.54
	Hard clay with hard bands	3	6	84	0	25.60
	Dark Grey Rock (not too hard)	6	0	90	0	27.43
SHP,	Hard sandstone.	5	6	95	6	29.11
WS,	Dark Grey Rock.	2	0	97	6	29.72
NS,	Hard Sandstone.	3	6	101	0	30.78
	Dark Grey Rock.	3	0	104	0	31.70
	Sandstone.	5	0	109	0	33.22
	Dark Grey Rock.	2	0	111	0	33.83
	Sandstone.	2	0	113	0	34.44
	Dark Grey Rock.	1	6	114	6	34.9
	Sandstone.	2	6	117	0	35.66
	Dark grey Rock.	1	0	118	0	35.97
	Sandstone.	1	6	119	6	36.42
	Hard Clay and Flints. (small)	0	6	120	0	
WHM	Clay and flints.	6	0	126	0	
	Clay and Claystones.	11	0	137	0	
	Blue Lias Clay & claystones.	5	0	142	0	
	Blue lias Clay.	16	6	158	6	
	Blue lias clay and claystones.	13	6	172	0	
? MKB	Marlstone.	1	0	173	0	
	Hard Grey Rock.	3	0	176	0	
	Blue Lias Clay	58	0	234	0	
	Rock formation.	R	0	235	0	71.63
ChM	Conglomeration of ironstone, rock & clay.	7	0	242	0	73.76
	Blue Lias Clay.	4	0	246	0	74.96
	Conglomerate rock, Ironstone, Marlstone & clay	3	0	249	0	75.90
	Conglomeration of ironstone, marlstone & clay.	5	0	254	0	77.42
	Blue lias clay & bands of marlstone about every 3"	8	0	262	0	79.86
		262	0	262	0	

This log differs in minor respects from hand-written version

LeGrand, Sutcliffe & Gell Ltd.



SP52SE9 [c. 5919 2048] Graven Hill Well (1941) Datum +88 (Ground level)

	<i>Depth ft</i>	Thickness m	Depth m
Oxford Clay Formation	128.00	39.01	39.01
Kellaways Formation	146.00	5.49	44.50
Great Oolite Group and Inferior Oolite Group undifferentiated	281.00	72.24	85.65
Whitby Mudstone Formation	290.00	2.74	88.39

Stratigraphical classification by M G Sumblar, May 1999.

~~BUCKNELL~~
~~BICESTER~~
BICESTER TOWN SUPPLY.

Gowell Farm, near Bicester, 1 1/4 miles N.W. of Market Place.
Communicated by Mr. Edgar F. WILLSON, Surveyor to the Urban District Council.
Height above O.D. 277 feet.

A pit, 8 feet square and 11 feet deep, was lined with brickwork and floored with concrete 1 ft. 6 in. thick. A steel tube 11 inches diam. was taken to 112 ft. 4 in. from surface, with perforation at 77 feet. No water worth mentioning was met with until 92 feet, when it rose to the surface. At 105 feet the bulk was struck, and overflowed at the rate of 6,000 gallons per hour when not pumping. The water will rise 3 feet above the surface.

	Thickness.		Depth.	
	Ft.	Ins.	Ft.	In.
Surface soil	1	6	1	6
Grey rock (Cornbrash)	3	0	4	6
Sandy marl	8	0	12	6
Blue rock (Forest Marble)	3	0	15	6
Light shale	2	6	18	0
Limestone	2	0	20	0
Blue clay or shale	3	6	23	6
White rock	7	0	30	6
Grey shale with hard beds	12	6	43	0
Grey rock	6	0	49	0
Dark shale	1	0	50	0
Rock	0	6	50	6
Blue binds	2	0	52	6
Blue shale	1	6	54	0
Grey rock	3	0	57	0
Grey shale	1	0	58	0
Grey rock	1	0	59	0
Variegated rock	3	6	62	6
Grey rock... ..	3	0	65	6
Dark shale	7	0	72	6
Rock	2	0	74	6
Blue clay	5	0	79	6
Blue rock	2	6	82	0
Dark shale with hard beds	3	0	85	0
Limestone	1	6	86	6
Limestone with shale beds	3	0	89	6
Blue shale	1	0	90	6
Grey sandy shale with water	2	0	92	6
Grey rock	2	6	95	0
Dark sandy shale	2	6	97	6
Light sandy shale	2	0	99	6
Grey rock	2	6	102	0
Soft rock, water, bulk here	6	0	108	0
Estuarine Beds 4 ft. 4 in. (penetrated) { Peat	1	3	109	3
Light sand	0	8	109	11
Dark clay and sand	2	4	112	3
Rock, 1 inch only into it	0	1	112	4

Analysis by Mr. W. W. Fisher in "The Salinity of Water from the Oolites"
"The Analyst," February, 1904. See p. 92.

Mr. E. Foster Tanner, Clerk to the Urban District Council, has kindly added the following particulars :-

"The deep well pump has been fixed. Motive power supplied by Crossley's 13-h.p. gas engines in duplicate, either capable of driving the pumping plant, which has the capacity for raising 8,000 gallons per hour. The water is pumped into tanks, constructed of steel, on the top of a tower, immediately adjoining the well. The tanks are in duplicate, i.e., an inner and an outer tank. Their combined holding capacity is about 45,000 gallons. Height from ground to bottom of tanks, 40 feet. There is a 7-inch main from the water tower to the town, and the distribution mains in the town are respectively 6-inch, 5-inch, 4-inch, and 3-inch. The cost of the works was £7,000."

O.D. given as +287 by H.T. Smith Esq. Surveyor to Bicester U.D.C. See
Letter in 9509/28.
Bore caught in; pump removed.

This well has a good reference water supply

of 52 ft
 75
 520 190 02
 175 505

BICESTER WATER WORKS.

Well at Gowell Farm. Present supply, 1909.

Yield.—140,000 to 212,000 gallons per day. Water reduced by 14 days test-pumping to 70 feet from surface, but rose again to surface in two hours after cessation of pumping.

Report on analysis of water received 30th September, 1905, at end of pumping test. By Mr. W. W. Fisher, F.I.C.

Description.—The sample is slightly cloudy and contains a little sand. The residue left on evaporation is alkaline and contains a little sodium carbonate.

Odour.—None.

Appearance in two-foot tube.—Pale-yellowish.

The results of the analysis are stated in grains per gallon.

Total dissolved solid matter	...	...	...	...	...	26.6
Chlorine in chlorides	...	...	...	...	...	1.1
Ammonia, free and saline	...	...	...	...	...	.028
" albuminoid	...	...	...	...	...	.003
Nitrogen in nitrates	...	...	...	...	...	.014
" in nitrites	...	...	...	...	...	0
Oxygen required to oxidise organic matter (in 3 hours)	...	...	...	...	...	.007
Hardness in Clark's degree	...	...	...	...	...	14.5

Remarks.—The total dissolved solid constituents are normal for water from the Oolite. The chlorides are not in excess of the natural amount; the nitrates are small, and the proportion of organic matter is extremely small. The water is of a moderate degree of hardness.

Published in
 'The Water Supply
 of Oxfordshire',

Page 5 92, 93

C. ISLER & Co., Ltd.,
ARTESIAN & CONSULTING WELL ENGINEERS,
BEAR LANE, SOUTHWARK, S.E.1.

Telegraphic Address: "ISLER, LONDON."
 Telephone No.: Hop 4460 (3 Lines).

BIRMINGHAM BRANCH: 58 Summer Row.

CHART

Showing the Soils passed through at

M 2222 The Leicester Waterworks

Drawn - **219**
 SP52SE5
 1" 219 A **75**

Surface Soil	1	6	1	6
Grey Rock.	3		4	6
Sandy shal	8		12	6
Blue Rock.	3		15	6
Light Shale	2	6	18	
Limestone	2		20	
Blue Shale	3	6	23	6
White Rock.	7		30	6
Grey Shale with hard beds	12	6	43	
Grey Rock.	6		49	
Dark Shale	1		50	
Rock		6	50	6
Blue Binds	2		52	6
Blue Shale	1	6	54	
Grey Rock.	3		57	
Grey Shale	1		58	
Grey Rock	1		59	
Variogated Shale	3	6	62	6
Grey Rock	3		65	6
Dark Shale	7		72	6
Rock	2		74	6
blue clay	5		79	6
Blue Rock.	2	6	82	
Dark Shale with hard ribs	3		85	
Limestone	1	6	86	6
Limestone with Shale beds	3		89	6
Blue Shale.	1		90	6

This must agree with report.

219
75

②
G. ISLER & Co., Ltd.,
ARTESIAN & CONSULTING WELL ENGINEERS,
BEAR LANE, SOUTHWARK, S.E.1.

SP52SE5

Telegraphic Address: "ISLER, LONDON."
Telephone No.: Hop 4460 (3 Lines).

BIRMINGHAM BRANCH: 58 Summer Row.

CHART

Showing the Soils passed through at

M. Bicester Waterworks
Gowell Farm Bicester

Grey Sandy Shale (with water)	2	0	92	6
Grey Rock.	2	6	95	0
Dark Sandy Shale	2	6	97	6
Light " "	2	0	99	6
Grey Rock.	2	6	102	0
Soft Rock	6	0	108	0
Peat	1	3	109	3
Light Sand		8	109	11
Dark clay & Sand Rock.	2	4	112	4
15'6" of 15" 8ft below				
97ft 11" Tubes level with surface				
15 " 10 1/2" " 97ft below				
perforated from 77ft below				
perforations 1/2" on 3 1/2" pitch covered				
with fine mesh brass wire gauge				
W.L. Overflow				
12,000 g.p.h. at P.W.L. of 70ft				
Dug Well Pump.				
Bored by J. Thom.				



9
Thomas 219
Inland Water Survey for Great Britain

SP52SE5

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i 16 74

Name or Description of Authority or Undertaking..... ~~Avon~~ Bicester Urban District

Postal Address..... The Causeway,
Bicester, Oxon.

(A) OVER-GROUND WATER.

(I) (a) Do you take systematic records of levels of water in:—

- (1) rivers
- (2) streams
- (3) reservoirs
- (4) lakes
- (5) canals or navigable rivers

(b) If so, please give a short description of the method used.

(c) How often are the readings taken?

(d) Exact points at which the records are taken. (A map or sketch would be helpful.)

(e) Have the levels been related to Ordnance Datum Level or to some other standard (in the latter case please specify standard)?

(f) Are all the levels (e.g., highest and lowest) covered satisfactorily by the records taken?

(g) Are arrangements made for extra readings during rise and fall of floods, etc.?

(II) What types of systematic records of discharge other than records of levels are kept as regards:—

- (1) rivers
- (2) streams
- (3) reservoirs
- (4) lakes
- (5) canals or navigable waterways

Form K268

(385) Wt. 31991/G5745 9M 3/35 S.E.R. Ltd. Gp. 662.

(III) (a) Have measurements been made from which the data for levels can be converted to records of discharge of :—

- (1) rivers and streams
- (2) reservoirs
- (3) lakes
- (4) canals or navigable waterways

(b) If so, how have these measurements been made (e.g., by current meters, velocities of floats, surveys of sections, calibration of weirs, records of water used for locking, etc.)?

(IV) (a) Are records kept in the case of springs breaking overground of the amount of water yielded?

(b) If so, what form of recording is used?

(c) How often are readings taken?

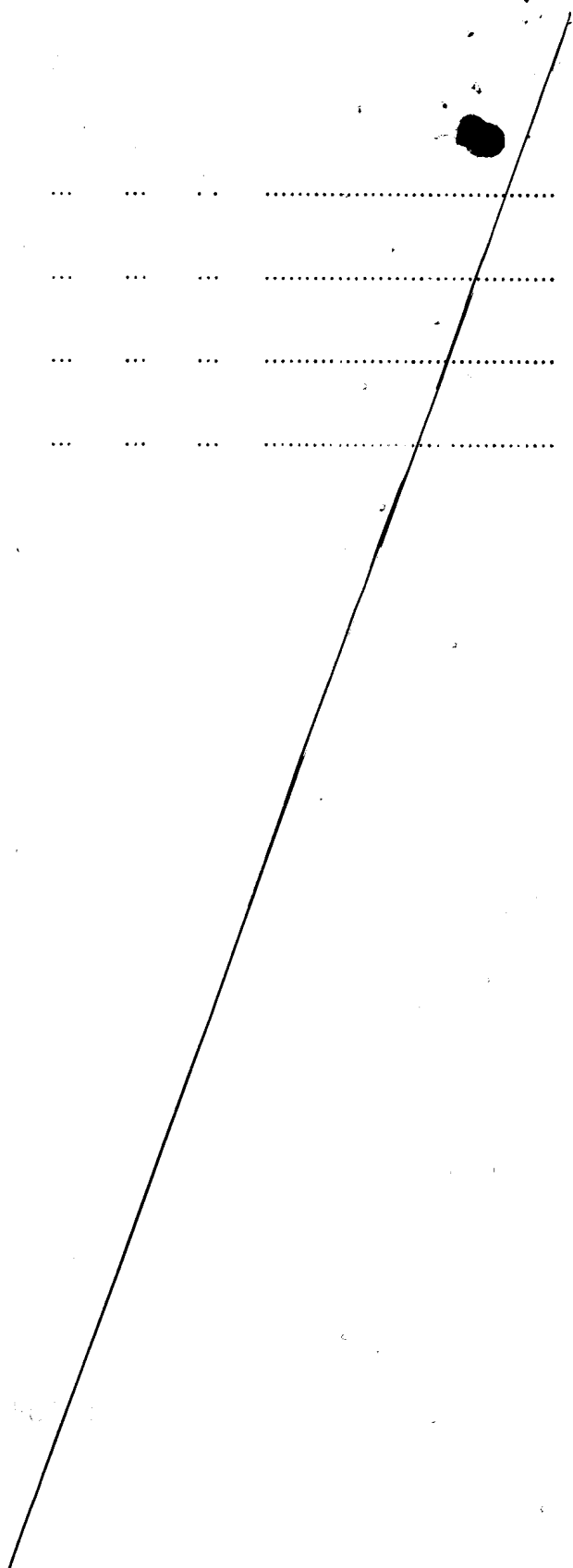
(d) Exact location of the spring. (A map or sketch would be helpful.)

(V) Since when have the records under I, II, III and IV been kept?

(VI) Are past records available?

(VII) REMARKS.

(Please indicate here any further information or particulars which may be thought likely to assist in the survey.)



(B) UNDERGROUND WATER—(WELLS AND BORINGS).

(In each case please state whether a well and/or boring is in question.)

SP52SE5

75
(A)

I. GENERAL.

- 1. Exact site of well or boring Well and boring at Gowell Farm, Near Bicester, Oxon.
(A map or sketch showing position would be useful.)
- 2. Surface level of ground above Ordnance Datum 277 ft.
- 3. Date of construction 1905.

WELLS.

- 4. Depth of well from surface level of ground (i.e., 2 above). If top of well is below the surface level of the ground (i.e., 2 above) state how much 268.25 ft.
- 5. Depth of floor of galleries at site of well: also dimension and direction of galleries None. ft.

BORINGS.

- 6. Depth of boring from surface level of ground (i.e., 2 above). If boring is in bottom of well, state depth of well 164.66 ft. *= O.D. Bottom Goring*
- 7. (a) Diameter of top of boring (8'0" b.s. to .97' b.s.) 11 in.
- (b) Diameter of bottom of boring... (97' b.s. to 112'0" b.s.) 10 1/2 in.
- 8. Tubed from top of boring to full depth. ft.
- 9. Lining tubes perforated at depths of 77'0" ft.
- 10. Water struck during boring at depths of 105 ft.
- 11. What was rest level on completion of boring? 3'0" above surface.

WELLS AND BORINGS.

- 12. Is the water raised by pump or air lift? Pump.
- 13. Depth from top of well or boring to bottom of suction pipe 95 ft.

II. If systematic measurements of water levels are made, state whether these include :-

- (a) Pumping levels..... 75'0"(b) Rest levels ... overflowed.
Test 70'0"
- (c) Time of recovery to rest level on cessation of pumping ... 4 hours... September, 1934.
Test 2 hours.
- (d) Changes in pumping level, if rate of pumping is altered. ... Not altered.

Also state : (e) at what intervals records are taken (i.e., daily, weekly, etc.) ... Daily.

Please furnish a specimen graph of records taken over as long a period as available (up to 1 year).

Taken by hour's pumping.

III. If measurements are made only occasionally, please indicate what is, or has been, done in this respect and furnish examples of any graphs or figures available.

Test taken twice in one day in July last - average per hour 6563 gallons
Test taken twice in one day in March last - 7854 gallons.

IV. YIELDS.

- (1) Number of gallons pumped per hour ... At present 7854 gallons.
- (2) Is pumping continuous? ... No.
- (3) If not, how many hours pumping per day? ... Average - 9 hours.
- (4) Maximum daily yields available (Test 140,000 to 212,000) in 1905. See above (With old pump)

Estimated 300,000 gallons per day.

Based on actual tests Further test proposed in near future.

V. If a section or record of strata can be given please attach to this form.

Herewith.

VI. (1) If a chemical analysis can be given please attach.

(2) If not state hardness ... (1920) ... 15.5

(3) For what purpose is the water used? ... Mainly Domestic.

Copy

50-52 Bygone St.
SP52SE5
13th Nov. 1935
75

Lab. report No 121135/1

Sample of water from Bicester Water works - No 3 pumping at 6740 gph.

Total solids 31.6 parts/100,000
Chlorine 2.2

Solids consist of Magnesium bicarbonate & sulphate
Traces of sodium & chlorine. No calcium salts present.

No 3a pumping at 6740 gph

Total solids 39.6 parts/100,000
Chlorine 3.2

Solids as above

No 4 pumping at 7020 gph.

Total solids 39.0 parts/100,000
Chlorine 2.1

Solids as above

No 4a pumping at 7020 gph

Total solids 40.6 parts/100,000
Chlorine 2.3

Solids as above

No 5 pumping at 6420 gph.

Total solids 40.0 parts/100,000
Chlorine 2.2

Solids as above.

(Sgd)
John Bell & Coyle

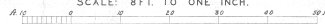
SP52SE5

BICESTER URBAN DISTRICT COUNCIL

HEYFORD AERODROME WATER SUPPLY AND IMPROVEMENT OF HEADWORKS.

SITE PLAN

SCALE: 8 FT. TO ONE INCH.

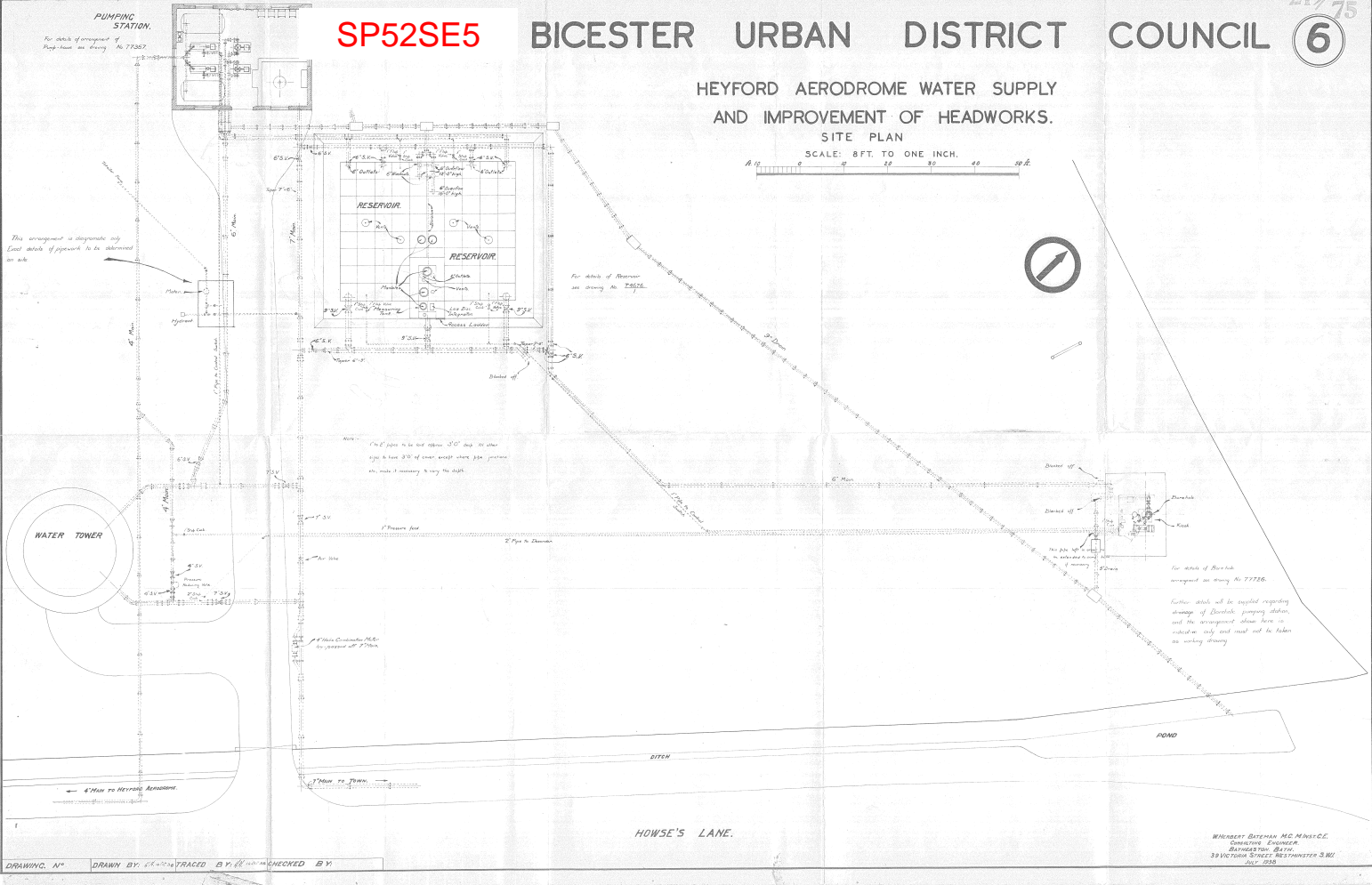


This arrangement is diagrammatic only. Exact details of pipework to be determined on site.

For details of Reservoir see drawing No. 22525E.

For details of Bicester arrangements see drawing No. 7775E.

Further details will be required regarding drainage of Bicester pumping station, and the arrangements shown here to indicate only and need not be taken as working drawings.



DRAWING No. DRAWN BY: [initials] TRACED BY: [initials] CHECKED BY: [initials]

HOWSE'S LANE.

WHERST BAYMAN M.C. MASTERS C.E. CONSULTING ENGINEER. BANBURY, OXFON. 33 VICTORIA STREET BANBURY 3 W. OCT. 1928.

SP52SE5

219/75.1
SP52|19



British
Geological Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

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[SP52SE BJ 5.]

~~Bicester~~
BICESTER TOWN SUPPLY.

Gowell Farm, near Bicester, 1 1/4 miles N.W. of Market Place.

Communicated by Mr. Edgar F. WILLSON, Surveyor to the Urban District Council.

Height above O.D. 277 feet. (84.42m)

A pit, 8 feet square and 11 feet deep, was lined with brickwork and floored with concrete 1 ft. 6 in. thick. A steel tube 11 inches diam. was taken to 112 ft. 4 in. from surface, with perforation at 77 feet. No water worth mentioning was met with until 92 feet, when it rose to the surface. At 105 feet the bulk was struck, and overflowed at the rate of 6,000 gallons per hour when not pumping. The water will rise 3 feet above the surface.

	Thickness.		Depth.	
	Ft.	In.	Ft.	In.
Surface soil	1	6
Grey rock (Cornbrash)	3	0
Sandy marl	8	0
Forest Blue rock (Forest Marble)	3	0
Light shale	2	6
Limestone	2	0
Blue clay or shale	3	6
White rock	7	0
Grey shale with hard beds	12	6
Grey rock	6	0
Dark shale	1	0
Rock	0	6
Blue binds	2	0
Blue shale	1	6
Grey rock	3	0
Grey shale	1	0
Grey rock	1	0
Variegated rock	3	6
Grey rock...	3	0
Dark shale	7	0
Rock	2	0
Blue clay	5	0
Blue rock	2	6
Dark shale with hard beds	3	0
Limestone	1	6
Limestone with shale beds	3	0
Blue shale	1	0
Grey sandy shale with water	2	0
Grey rock	2	6
Dark sandy shale	2	6
Light sandy shale	2	0
Grey rock	2	6
Soft rock, water, bulk here	6	0
Peat	1	3
Estuarine Beds 4 ft. 4 in. (penetrated)	0	8
Dark clay and sand	2	4
Rock, 1 inch only into it	0	1

Analysis by Mr. W. W. Fisher in "The Salinity of Water from the Oolites" "The Analyst," February, 1904. See p. 92.

Mr. E. Foster Tanner, Clerk to the Urban District Council, has kindly added the following particulars:—

"The deep well pump has been fixed. Motive power supplied by Crossley's 13-h.p. gas engines in duplicate, either capable of driving the pumping plant, which has the capacity for raising 8,000 gallons per hour. The water is pumped into tanks, constructed of steel, on the top of a tower, immediately adjoining the well. The tanks are in duplicate, i.e., an inner and an outer tank. Their combined holding capacity is about 45,000 gallons. Height from ground to bottom of tanks, 40 feet. There is a 7-inch main from the water tower to the town, and the distribution mains in the town are respectively 6-inch, 5-inch, 4-inch, and 3-inch. The cost of the works was £7,000."

O.D. given as +287 by St. T. Smith Esq. Surveyor to Bicester U.D.C. See

Letter in 9509/28.

Bore cased in; pump removed.

Published in

The Water Supply

②
 C. ISLER & Co., Ltd.,
 ARTESIAN & CONSULTING WELL ENGINEERS,
 BEAR LANE, SOUTHWARK, S.E.1.

SP52SE5

SP52SE5

219
 /
 75

Telegraphic Address: "ISLER, LONDON."
 Telephone No.: Hop 4460 (3 Lines).

BIRMINGHAM BRANCH: 58 Summer Row.

CHART

Showing the Soils passed through at

M. Bicester Waterworks
 Gowell Farm Bicester

Grey Sandy Shale (with water)	2	0	92	6
Grey Rock.	2	6	95	0
Dark Sandy Shale	2	6	97	6
Light " "	2	0	99	6
Grey Rock.	2	6	102	0
Soft Rock	6	0	108	0
Peat	1	3	109	3
Light Sand		8	109	11
Dark clay & Sand	2	4	112	4
Rock.	2			
15'6" of 15" 8ft below				
97ft 11" Tubes level with surface				
15 " 10 1/2" " 97ft below				
perforated from 77ft below				
perforations 1/2" on 3 1/2" pitch covered				
with fine mesh brass wire gauge				
W.L. Overflow				
12,000 gph. at P.W.L. of 70ft				
Dug Well Pump.				
Bored by J. Thom.				

SP52SE5

219

75

BICESTER WATER WORKS.

Well at Gowell Farm. Present supply, 1909.

This well has a good reference depth of 52 ft

520 ft

Yield.—140,000 to 212,000 gallons per day. Water reduced by 14 days test-pumping to 70 feet from surface, but rose again to surface in two hours after cessation of pumping.

Report on analysis of water received 30th September, 1905, at end of pumping test. By Mr. W. W. Fisher, F.I.C.

Description.—The sample is slightly cloudy and contains a little sand. The residue left on evaporation is alkaline and contains a little sodium carbonate.

Odour.—None.

Appearance in two-foot tube.—Pale-yellowish.

The results of the analysis are stated in grains per gallon.

Total dissolved solid matter	...	...	...	...	26.6
Chlorine in chlorides	...	...	...	...	1.1
Ammonia, free and saline	...	...	...	...	.028
" albuminoid	...	...	...	...	.003
Nitrogen in nitrates	...	...	...	...	.014
" in nitrites	...	...	...	...	0
Oxygen required to oxidise organic matter (in 3 hours)	...	...	...	...	.007
Hardness in Clark's degree	...	...	...	...	14.5

Remarks.—The total dissolved solid constituents are normal for water from the Oolite. The chlorides are not in excess of the natural amount; the nitrates are small, and the proportion of organic matter is extremely small. The water is of a moderate degree of hardness.

SP 5709 2384

Published in
'The Water Supply
of Oxfordshire',
Page 5 92, 93

210
75-0

SP52SE5

<u>Ft.</u>	<u>ins.</u>	
1.	6	Surface Soil
3.	0	Grey Rock.
8..	0.	Sandy Marl
3.	0.	Blue Rock
2.	6	Light Shale
2.	0	Limestone.
3.	6	Blue Shale.
7.	0	White Rock.
12.	6	Grey Shale with hard beds.
6.	0	Grey Rock.
1.	0	Dark Shale.
	6	Rock
2.	0	Blue Binds.
1.	6	Blue Shale.
3.	0	Grey Rock.
1.	0	Grey Shale.
1.	0	Grey Rock.
3.	6	Variegated Shale.
3.	0	Grey Rock.
7.	0	Dark Shale.
2.	0	Rock.
5.	0	Blue Clay.
2.	6	Blue Rock.
3.	0	Blue Shale with hard ribs.
1.	6	Limestone.
3.	0	Limestone with Shale beds.
1.	0	Blue Shale.
2.	0	Grey Sandy Shale.
2.	6	Grey Rock.
2.	6	Dark Sandy Shale.
2.	0	Light Sandy Shale.
2.	6	Grey Rock.
6.	0	Soft Rock.
1.	3	Peat.
	8	Light Sand.
2.	4	Dark Clay and Sand, Rock.

See SP52SE/5



SP52SE5

SP 52 SE/6 [5851 2319] Bicester Station Well (19--) Datum +77.7 (Ground level)

	<i>Depth ft</i>	Thickness m	Depth m
Cornbrash Formation	8.50	2.59	2.59
Forest Marble Formation and White Limestone Formation: Bladon Member	29.75	6.48	9.07
Ardley Member and Shipton Member	76.00	14.10	23.16
Rutland Formation and Taynton Limestone Formation	100.00	7.32	30.48
Sharp's Hill Formation, 'White Sands' and Northampton Sand Formation	120.00	6.10	36.58

Stratigraphical classification by M G Sumbler, May 1999.