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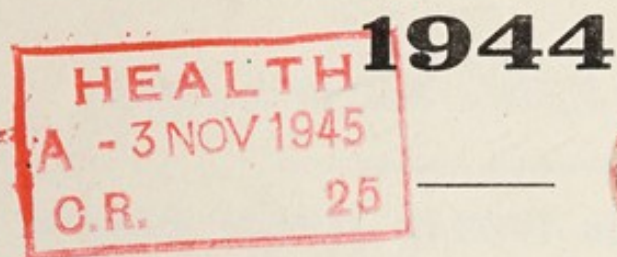
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# Annual Report

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OF THE

Medical Officer of Health

OF THE

Urban Sanitary Authority

OF


EAST DEREHAM,  
Norfolk.

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EAST DEREHAM:

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# EAST DEREHAM URBAN DISTRICT

## INTERIM ANNUAL REPORT of the MEDICAL OFFICER OF HEALTH for 1944

### Sec A. STATISTICS AND SOCIAL CONDITIONS OF THE AREA.

Area, (in acres),	...	...	...	5,313
Population, (Census 1931),	...	...	...	5,643
„ (Registrar-General's estimate, 1944)	...	...	...	6,214
Number of inhabited houses, (end 1944)	...	...	...	1,835
Rateable value,	...	...	...	£26,105
Sum represented by a penny rate	...	...	...	£106/6/1½

The estimated population has varied during the war years as follows:

1939	...	5,788	1942	...	6,552
1940	...	6,262	1943	...	6,403
1941	...	6,640	1944	...	6,214

### EXTRACTS FROM THE VITAL STATISTICS OF THE YEAR

			Totals	M	F
Live Births	Legitimate	...	98	57	41
	Illegitimate	...	19	10	9
Birth Rate per 1,000 of the estimated resident population			...	...	18'8
Still Births	Legitimate	...	2	2	—
	Illegitimate	...	1	—	1
Rate per 1,000, (Live and Still), births			...	...	25'0
Deaths	...	...	77	39	38
Death Rate per 1,000 of the estimated resident population			...	...	12'3

## Death Rate of infants under one year of age :

All infants per 1,000 live births	...	...	59
Legitimate infants per 1,000 legitimate live births			40
Illegitimate infants per 1,000 illegitimate live births			157
Deaths from Cancer, (all ages)	...	...	15
„ Measles, (all ages)	...	...	Nil
„ Whooping Cough, (all ages)	..		Nil
„ Diarrhoea, (under 2 years of age)	...		Nil

For the third year in succession, the Birth Rate has continued at a high figure, being 1'7 higher than in the previous year. This is the highest rate recorded since 1925.

As in the previous year, there was an unusually high illegitimate birth rate. Last year 10% of the total births were illegitimate and this year the figure has risen to 16%.

There were seven deaths of infants under one year of age. Three of these were prematurely born and one was a case of congenital malformation. The rate per thousand live births was 59 as compared with 45 last year and a National rate of 46.

The Death Rate, (12'3), is 2'6 lower than in 1943 and 0'7 less than the National average, (11'6). 38 of the 77 deaths were of persons over 70 years of age, equal to 49%.

AGE	M	F
70-80	8	9
80-90	12	6
90-100	1	2
Totals	21	17



## Sec. B. GENERAL PROVISIONS OF HEALTH SERVICES FOR THE AREA.

The Public Health Staff of the Urban District Council consists of a part-time Medical Officer of Health and a Sanitary Inspector. The latter also carries out the duties of Engineer, Surveyor and Markets Inspector.

The County Isolation Hospital at Dereham has accommodation for 96 beds and hutments provide accommodation for a further 29. Shortage of nursing and domestic staff has prevented full use being made of the accommodation available. 8 cases from the District were admitted to the Isolation Hospital during the year.

### IMMUNISATION AGAINST DIPHTHERIA.

The recent progress in immunising children against Diphtheria has not been maintained during the year, and the proportion of the lower age group protected is still unsatisfactory.

The necessity for immunising children in the susceptible age group 1-5 years cannot be too strongly emphasised.

The figures of those immunised and estimated child population are as follows:

TOTAL NUMBERS IMMUNISED.			
Year	1-5 years	5 to 15 years	
	Totals	Totals	
1941	118	814	
1942	102	35	
1943	103	46	
1944	70	24	
	<hr/>	<hr/>	
	Totals 393	919	
	<hr/>	<hr/>	
Estimated child pop. (1944)	535	1040	
Percentage immunised ..	60	88	

Sec. C.      SANITARY CIRCUMSTANCES  
OF THE AREA.

(1) WATER.

The average daily consumption was 132,054 gallons as compared with 124,496 gals. in the previous year, the average daily pumping hours being 16.5 compared with 17.9 in 1943.

Apart from a short period during a breakdown, all the water supplied during the year has been obtained from the new borehole, using a submersible Beresford 16-h.p. pump.

Work was commenced upon the sinking of a new borehole in May, 1943. Water was found at 69 ft., 170 ft., 230 ft. and 410 ft. At the last depth, a seven day continuous pumping test was made when the standing water level was at 109 ft. below surface. Pumping with a 45-h.p. Beresford submersible pump, the yield was 194,400 gals. per day, the average hourly yield being 8,114 gals. The bore was then deepened to a depth of 456 ft., finishing in water-bearing hard chalk with a few flints. It was only 5 inches out of the vertical line in a South Westerly direction, the customary allowance being 2 ins. in 100 ft. The bore was constructed as follows :

Excavation	...	2 ft. from ground level		
18 in. cylinders	..	135 ft.	„	„
15 in. cylinders	...	212 ft.	„	„
15 in. bore in hard chalk		107 ft.	„	„
Total depth		456 ft.		

The last 59 ft. of the 15 in. tubes were slotted, each slot being 6 x  $\frac{3}{8}$  in. The space between the 18 in. and 15 in. cylinders where they overlap was grouted with cement, giving a seal of 77 ft.



Strata penetrated were as follows :

				Thickness of Strata	Depths from surface
				ft.	ft.
Top soil	...	...	...	2	2
Sandy clay and stones	...	...	...	1	3
Clay and very large flints	...	...	...	5	8
Boulder clay and chalk flints	...	...	...	13	21
Boulder clay	...	...	...	5	26
Sand and stones	...	...	...	3	29
Boulder clay	...	...	...	19	49
Sandy clay and stones	...	...	...	13	61
Gravel	...	...	...	10	71
Sand and stones	...	...	...	19	90
Boulder clay	...	...	...	22	112
Chalk of gradually improving quality and flints	...	...	...	338	450

A three day continuous pumping test at the final depth was made on 5th September, 1943, with the following results

Depth of bore	...	...	456 ft.
Total length of rising main	...	...	263 ft. : diam 4 ins.
Height of delivery above surface	...	...	3 ft.
Standing water level	...	...	87 ft. below surface
Type of pump	...	...	Beresford 45 h.p. submersible

Date 1943	Yield in gals. per day	Condition of water	Pumping water level
4th Sept.	281,470	Chalky to clear to cloudy	8 a.m. 87 ft. 9 a.m. 230 ft. 10 a.m. 240 ft. 11 a.m. 256 ft.
5th Sept.	277,120	Cloudy to clear	256 ft.
6th Sept.	277,120	Clear	256 ft.

The yield is equivalent to 11,330 g.p.h. The time taken for the water to return to the original rest level was 4 hours.

Ground surface level = 210 ft. above Ordnance Datum.



Level of water :—

At commencement of pumping—123 ft. above Ordnance Datum.

At cessation of pumping—50 ft. above Ordnance Datum.

During the 3 day test, the water level in No. 1 Well fell below suction level after 3 hours pumping. The yield from No. 2 borehole appeared to be only slightly affected.

The total yield now available is approximately 15,330 g.p.h., 11,300 from No. 3 borehole and 4,000 from No. 2 outside bore.

No. 1 Well provides an alternative source, but the present working yield of Nos. 1 and 2 boreholes working together is only 122,000 gals. in 24 hours. After 3 to 4 hours pumping, both pumps are partially on exhaust and pumping has to be discontinued at intervals to allow the water to rise sufficiently above suction level for pumping to be recommenced.

It has not been possible to make use of the total available supply from the new borehole, as the temporary pump, a Beresford 16 h.p. submersible, is only rated to lift 6,500 gals. per hour.

The quality of the water obtained is excellent in all respects, except for hardness, which is a little above the average for the County, and a rather high iron content. The water as it reaches the consumer is not so satisfactory, as considerable scaling off the mains is taking place increasing the amount of iron in suspension. This sediment accumulates in the dead ends of the service mains and passes intermittently to the consumers' taps.

The Urban District Council has agreed to install a Paterson filter by means of which water would be filtered and softened, but, unfortunately the Ministry of Health was unable to sanction the carrying out of this project owing to wartime restrictions.

The installation of a permanent centrifugal pump with a head of 300 ft. has been sanctioned. Meanwhile, the accumulation in the dead ends is being dealt with, though inadequately, by regular flushings, and 8 new flushouts have been fitted. The hydrants are of the ball type which are much less effective for flushing purposes than the positive screw-down pattern.

Copy of analysis of water from new borehole deepened to 456 ft. taken on 6th Sept., 1943, on third day of test-run, suction level 256 ft.

	Grains per gal.	Parts per 100,000
Total solids in solution	26.1	37.3
Ammonia Free and saline	0.0112	0.016
Albuminoid	0.0035	0.0050
Chlorine in Chlorides	1.7	2.43
Nitrogen as Nitrates	Nil	Nil
Nitrites	Nil	Nil
Oxygen absorbed from permanganate	0.040	0.057
Hardness Total	18.80°	27.0
Permanent	3.8°	5.43
Colonies per ml. on agar at 37° C.	66	
Bacillus Coli present in	5 ml.	
Physical characteristics	Very slight rusty sediment Iron in solution : 0.0022	

#### REMARKS :

Compared with the sample analysed on 9th August,\* this water shows some deterioration in organic quality with increase in mineral content, including hardness. On the other hand, the iron content shows marked decrease, the iron remaining in solution being quite negligible. The coliform organisms present in the sample may be ignored, as they are merely surface organisms acquired in the process of collection of the sample. The water is quite suitable for drinking purposes. Its organic quality should improve on continued pumping.

(Signed) W. LINCOLNE SUTTON,  
Norfolk & Suffolk County Laboratories,  
Norwich.

\*The sample referred to was taken when boring was suspended at a depth of 400 ft. It contained a distinct trace of iron and had noticeable turbidity.



Copy of analysis of water from No. 3 (new) borehole taken from outlet of rising main on 24th November, 1943.

	Grains per gal.	Parts per 100,000
Total solids in solution	22.4	32.0
Ammonia Free and saline	0.0098	0.014
Albuminoid	0.0007	0.001
Chlorine in Chlorides	1.12	1.6
Nitrogen as Nitrates	Nil	Nil
Nitrites	Nil	Nil
Oxygen absorbed from permanganate	0.0217	0.031
Iron in solution	0.014	0.02
Hardness Total	17°	24.3
Permanent	3.8°	5.43
Physical characteristics	Faintly opalescent with small rusty sediment	

#### REMARKS.

This water is of great organic purity, whilst it possesses less mineral content, including hardness, than any other previous sample. There is no reduction, however, in iron content: indeed, the present sample shows the highest content of any sample so far. I am of the opinion that this supply will continue to deposit rusty iron oxycarbonate during distribution. The water is otherwise of such excellent quality that appropriate treatment for the removal of iron would render it in every respect a high grade water for public supply.

(Signed) W. LINCOLNE SUTTON,  
Norfolk & Suffolk County Laboratories,  
Norwich.

Copy of analysis of Town water from a tap in Olney Road, Dereham, taken on 24th, November, 1943.

	Grains per gal.	Parts per 100,000
Total solids in solution	24.15	34.5
Ammonia Free and saline	0.0098	0.014
Albuminoid	0.0007	0.001
Chlorine in Chlorides	1.12	1.6
Nitrogen as Nitrates	Nil	Nil
Nitrites	Nil	Nil
Oxygen absorbed from permanganate	0.0217	0.031
Hardness Total	17°	24.3
Permanent	3.8	5.43
Iron in solution	0.014	0.02
Physical characteristics	Small rusty sediment	



## REMARKS.

This sample shows a deposit of separable iron oxide as does the sample direct from the borehole, and it's content of residual iron in solution is the same.

(Signed) W. LINCOLNE SUTTON,  
Norfolk & Suffolk County Laboratories,  
Norwich.

Unfortunately, a bacteriological examination of this sample was not made.

A sample of tap water taken from a service main in Quebec Road on 26th November, 1937, revealed one bacillus per c.c. on agar at 37° C., B. Coli absent in 100 c.c., B. Welchii absent in 30 c.c. but B. Aerogenes present in 65 c.c. There was a slight sediment of chalk with spongioles and a small nematode worm.

This sample was reported upon by Mr. Lincolne Sutton as follows:

"This water is of great organic purity and free both chemically and bacteriologically from any sign of pollution of a dangerous character. The presence of B. Aerogenes is probably connected with conditions where the sample was taken or maybe connected with the sediment. The latter is not such as one would wish to see in a public supply and suggests that the mains require flushing."

At the time this sample was taken, lime softening was being carried out, though very inadequately, as the plant was dealing with three times the amount of water it was capable of softening. Owing to the reduction in time available for settling after the introduction of lime, a considerable amount of lime in suspension was being carried forward into the mains. Nevertheless, the lime took up a proportion of the iron before the water left the settling tanks.

Since the supply has been obtained from the new borehole, softening has not been attempted, the settling tanks being used as a reservoir with a total capacity of 105,000 gallons.

The foregoing analyses do not represent fair samples of the water always reaching the consumer. When there is an unusually heavy demand, as takes place when the fire engine is connected to the mains or the markets are being washed down, the accumulations in the dead ends of the mains are stirred up and the water rendered turbid and amber in colour by the excessive amount of iron in suspension.

The hardness causes heavy scaling in boilers and hot water service pipes and extravagant use of soap.

From the foregoing, it is concluded that the following additions and improvements are required to provide an adequate supply of wholesome water with the necessary reserve :

- (1) A permanent pump of greater lifting capacity to serve the new borehole.
- (2) A modern plant for filtration and softening.
- (3) Deepening of No. 1 borehole to provide an increased yield together with new pumping machinery to replace the existing obsolete plant. This would provide an alternative source of supply in the event of a breakdown of the pumping machinery in No. 3 borehole, supplemented by the yield from No. 2 outside borehole.
- (4) Extra storage capacity is necessary to provide the desirable minimum of 2 days' demand, the present capacity of ground reservoirs and gravity tank being equal to one day's demand only.
- (5) Replacement of the existing ball-type hydrants by the screw-down pattern.

A future necessity is the replacement of the present 3 inch main along Norwich Road by a 6 inch main, as the water pressure in this length is far too low.



For purposes of reference, the following details concerning the pre-existing boreholes are included :

No. 1 Well and Borehole	No. 2 Outside Borehole
Well, 7 ft. 6 ins. diam., depth 93 ft.—1861	Well, 4 in. diam., depth 26½ ft. machinery, 1922
Extension, 8 ins. diam., depth 53 ft.—1888	Borehole, lined, 12 ins. diam., depth 67½ ft.
Borehole depth 136 ft.—1898	„ „ 10 ins. diam., depth 191¼ ft.
Total depth, 282 ft. less subsequent silt 22 ft. (1943)	„ unlined, 10 ins. diam., depth 5 ft.
Resting water level 98½ ft.	Total depth, .. 290¼ ft.
Pumping level 146 ft.	Pump suction 220 ft. 2 ins.
Approx. yield 3412 gals. per hour	Yield on test 4224 gals per hour
Strata :	Resting water level 90 ft. (circ.)
Gravel & sand .. 96 ft.	Strata :
Marley clay .. 26 ft.	Gravel and sand .. 99 ft.
Chalk of improving quality 160 ft.	Marley clay .. 23 ft.
282 ft.	Chalk of improving quality 168 ft.
	290 ft.

Proportion of dwelling-houses with Town water supply :

(a) Direct to the houses	...	54 per cent
(b) By means of standpipes	...	15 per cent

## (2) DRAINAGE AND SEWERAGE.

The Works continue to show signs of over-loading. During the war, the estimated population rose by about 1,000, but it is considered that the Works can cope with all present domestic sewage as was allowed for in the original plans.

After the Works were re-constructed, however, it was found that the steepes discharged from the maltings in the Town had an oxygen destroying capacity equal to three times that of strong domestic sewage. Without this trade waste, a good effluent should be obtained. The provision of balancing tanks at the three maltings would serve to even out the flow of steepes to the Works and so prevent large volumes being discharged over a short period of time as is now the case.



The distributor arms of Nos. 3 and 4 filters require renewal or extensive repairs. It is hoped that this will be put in hand shortly.

The two new sludge drying beds have been completed and are working satisfactorily, though it will be necessary to pipe the liquid filtrate from the beds to the sludge well.

### (3) CLOSET ACCOMMODATION.

No conversions to W.Cs. were made during the year. There are 634 pail closets in the District, 285 of these being in the central portions of the Town. Of this latter number, 193 are within 100 ft. of the sewer mains.

### (4) PUBLIC CLEANSING.

10 privy vaults have been emptied during the year and some 1,700 dustbins emptied weekly.

The Council's refuse dump is badly sited and should be removed to a less populous area or replaced by a proper refuse destructor.

### (5) SUMMARY OF DUTIES CARRIED OUT BY SANITARY INSPECTOR.

Houses and premises inspected	...	204
Nuisances abated	...	10
Houses disinfected	...	3
Disinfections of bedding	...	1

### (6) SALVAGE.

The collection of salvaged material has been maintained at about the same level as in the previous year. Labour has been the chief problem, resulting in some diminution in the quantities collected from private households, but, with the salvage from business establishments, the balers have been kept fully occupied.

Only light rubber is now collected and certain metals are no longer required.

Total quantities received during the year are as follows :

Paper and cardboard	...	91 tons
Rags	... ..	5 „ 4 cwts.
Bones	... ..	2 „ 14 „
Rubber	... ..	1 „ 1 „

The Honorary Organiser is to be congratulated on maintaining the collection of Salvage at such a high level, in spite of many difficulties.

#### Sec. D. HOUSING

Number of houses erected in the District during the Year :

(a) By the Local Authority	...	Nil
(b) By other bodies or persons	...	Nil

Summary of houses erected by the Urban District Council up to the end of 1944 :

Housing Acts, 1919, 1923 and 1924	...	64
Housing Acts, 1930, 1936 and 1938	...	80
		<hr/>
		144
		<hr/>

8 of the houses built under the 1938 Act were for the relief of overcrowding.

#### Sec. E. INSPECTION AND SUPERVISION OF FOOD.

(a) *Milk Supply* :—

Milk and Dairies Order, 1926 :

(i) Number of registered purveyors of milk	8
(ii) Number of registered cow-keepers and wholesale purveyors of milk	...
	20

*Milk (Special Designations), Orders, 1936 & 1938 :*

(i) Number of licensed producers of Accredited Milk	7
(ii) Number of licensed purveyors of Accredited Milk	4



## Milk Samples :

35 samples of milk have been taken for testing. 22 were sent to the County Laboratory for the Methylene Blue test, 8 of which failed. 13 samples were sent to Chorley Wood to be tested for Tubercle bacilli, all of which proved negative.

*(b) Meat and other Foods :—*

Slaughtering is now carried out at a central slaughter-house under Government control.

## Condemned as unfit for human consumption :

	Cattle	Cows	Calves	Sheep & L.	Pigs
<i>Tuberculosis :</i>					
Whole carcasses	5	—	—	—	—
Organs or parts	982	90	2	49	62
<i>Other diseases :</i>					
Whole carcasses	—	—	—	—	—
Organs or parts	14	1	—	9	1
<i>Miscellaneous :—</i>					
10 sides Bacon	110 lbs. Meat		1 cwt. Macaroni		
11 lbs. Butter	2 cwts. Tea		15 tins fruit		
20 lbs. Cheese	1 cwt. Oatmeal		138 tins other foods		
193 Oranges	12½ cwts Carrots		Small quantity of Sugar		

*Sec. F.* PREVALENCE OF AND CONTROL  
OVER INFECTIOUS AND OTHER DISEASES.

Disease	Total cases notified	Cases admitted to Hospital	Total Deaths
Scarlet Fever .. ..	8	6	—
Pneumonia .. ..	2	—	—
Whooping Cough.. ..	6	1	—
Measles .. ..	1	—	—
Cerebro-spinal Fever .	—	1	1
Dysentery .. ..	2	2	—
Erysipelas .. ..	1	—	—
Ophthalmia Neonatorum ..	2	—	—

One of the Dysentery cases was a Flexner infection and the other Sonne's.



## AGE GROUPS :—

AGE GROUPS (years)	0-1	1-2	2-3	3-4	4-5	5-10	10-15	15-20	20-35	35-45	45-65	65 & over
Scarlet Fever	—	—	—	—	—	4	2	1	1	—	—	—
Pneumonia	—	—	—	—	—	1	—	—	—	—	1	—
Whooping Cough	—	—	1	2	1	2	—	—	—	—	—	—
Measles	—	—	—	—	—	—	—	—	—	1	—	—
Dysentery	1	—	—	—	—	—	1	—	—	—	—	—
Cerebro-spinal Meningitis	—	—	—	—	—	—	—	—	—	—	1	—
Erysipelas	—	—	—	—	—	—	—	—	—	—	1	—

## TUBERCULOSIS.

New Cases and Mortality during 1944 :—

Age Groups	New Cases				Deaths			
	Respiratory		Non-Respiratory		Respiratory		Non-Respiratory	
	M	F	M	F	M	F	M	F
0 — 1	—	—	—	—	—	—	—	—
1 — 5	—	—	2	1	—	—	—	—
5 — 15	—	—	1	2	—	—	—	—
15 — 25	—	—	1	—	—	—	—	—
25 — 35	3	—	—	—	—	—	—	—
35 — 45	1	—	—	—	—	—	—	—
45 — 55	—	—	—	—	—	—	—	—
55 — 65	—	—	—	—	—	—	—	—
65 & upwards	—	—	—	—	—	—	—	—
Totals	4	—	4	3	—	—	—	—

In only one previous year, viz.—1931, were no deaths reported from Tuberculosis, the records dating back to 1883.

There were three more cases notified than in the previous year.

At the end of the year, there were 52 cases of Tuberculosis on the District Register, 17 respiratory and 35 non-respiratory.

### GOVERNMENT EVACUATION SCHEME.

With the advent of increased aerial activity from flying bombs and rockets in July, a further influx of evacuated persons was received into the District bringing the total up to 700. Generally speaking, the new arrivals were well received and settled down well. By the end of the year, many had returned home, but 100 or more still remained.

A few of the requisitioned houses have been given up, but there is little hope of further de-requisitioning taking place for the time being as most of the inhabitants of this type of house have no homes to which to return. 12 houses still remain requisitioned. All have been kept in a reasonably clean condition and inspections have been made at regular intervals. The Official Helper, Mrs. Decker, resigned during the latter part of the year.

### BRITISH RESTAURANT.

The British Restaurant has continued to function successfully throughout its fourth year of existence, the greater proportion of its patrons being industrial workers. A large number of children were also served. Hot midday meals have been prepared in the Restaurant and sent out regularly to the schools at Scarning, Wendling and Fransham in the Ford Emergency Food Van.



All the helpers have been found by the W.V.S., with the exception of the kitchen staff. The Centre Organiser, Mrs. Gordon Aldiss, and her voluntary workers have earned the gratitude of the community for the splendid work they have done over so long a period.

### EMERGENCY MATERNITY HOME.

The County Emergency Maternity Home near Downham Market has continued to function during the year. Although primarily for the use of evacuated persons, some accommodation has been available for other persons on payment of a maintenance charge. Preference is given to wives of men serving in H.M. Forces with no homes of their own.

With a rising birth rate and the present shortage of domestic accommodation and help in the home, it is hoped that these beds for maternity cases will continue to be available, and, if possible, increased in number, as there is a great shortage of institutional accommodation for maternity cases generally.

**NORMAN E. D. CARTLEDGE,**

*Medical Officer of Health.*



