26th July 1900.

TO THE CHAIRMAN AND DIRECTORS OF THE

SOUTH STAFFORDSHIRE WATER WORKS CO.

Gentlemen

In view of the intended application to Parliament in the next Session. I beg in pursuance of your instructions to submit my report upon the capacity of the existing works of the Company, together with my recommendations as to further works to meet the continually increasing demand.

The following table shows the capacity of existing works and the estimated yield from additional works now under construction:-

LICHFIELD		Millions of Gallons
Hanch & Lemonsley Brooks (minimum yield in Summer Weather)		1.00
Tunnel & Well		3.00
HEDNESFORD		1.25
HUNTINGTON		.25
FRADLEY		1.00
SHENSTONE		1.00
ALDRIDGE		1.50
ASHWOOD (including extension)	Estimated	2.00
HINKSFORD (New Works)	-do-	1.50
TRENT VALLEY -do-	-do-	1.00

STORAGE (available)

Stowe Reservoir	47 Millions	
Hanch "	26 "	
Walsall "	31 "	
	104 Millions	÷ 160 days = .65
		Total 13.15

MeMo:- In addition to the above, land has been purchased at Stafford Brook, Rugeley, for a pumping station.

It will be seen from the foregoing figures that when the New Works now in hand are completed, and assuming all the works could be kept going constantly at full speed, the maximum total yield per day would not exceed 13.15 Million Gallons. It is of course impracticable to keep the whole of the works at full speed, and if we allow a margin of 10% our total available quantity is reduced to 11.84 Million Gallons.

The average daily consumption for the past year (1899) was 9,764,229 gallons, the average daily consumption for the three months ending September 30th of that year was 10,088,994 gallons, and the figures for the past half year ending June 30th 1900 show a daily consumption of 10,476,996 gallons. Similarly the average daily consumption for the months of July ~~and~~ August & September for the following years are as under:-

	1896	1897	1898	1899	1900
July	9017688	9830292	9871618	10458147	11362067
August	8194574	9174246	9736041	10408227	
September	7818921	8837498	9702833	9400608	

In a previous report dated 23rd March 1899 I gave the average daily increase per annum as 300,000 gallons, but it will be seen from the following table that these figures were exceeded during the 5 years ending December 1899 and it will therefore now be nearer the mark to estimate the daily increase per annum at 500,000 gallons.

Length of Time	Date.	Total daily average Consumption	Total increase Daily	Average daily increase per annum.	DOMESTIC. Average daily Consumption Domestic purposes.	DOMESTIC. Average daily increase per annum	TRADE. Average daily Consumption Trade Supply	TRADE. Average daily increase per annum.	Total Capacity of Works.
20	1879	3966048			2876639		1089409		4250000
Years	1899	9764229	5798181	289909	6964335	204384	2799894	85524	9500000
10	1889	5841063			4071265		1769798		6500000
Years	1899	9764229	3923166	392316	6964335	289307	2799894	103009	9500000
5	1894	7392061			5379656		2012405		9000000
Years	1899	9764229	2372168	474433	6964335	316935	2799894	157497	9500000

(1900.) now 750 000

Having regard to the fact that the period occupied in negotiating for and completing a new pumping station may be estimated at not less than 3 years, and also remembering that in projecting new Water Works it is customary to allow for the requirements of a period of at least from 10 to 15 years; it is incumbent on the Company to consider at once what works shall be undertaken to meet the demands for say the next 10 years.

We may, I think, estimate the probable requirements as follows:-

Average daily consumption for July, August & September 1899	10,088,994 Gallons
Estimated increase for 10 years at 500000~~0~~ Gallons per day per annum.	5,000,000 "
10% Surplus	1,508,899 "
Estimated quantity required per day 1910=	16,597,893 Gallons

It will be seen from the foregoing figures that assuming the average daily increase in demand for the next 10 years to be at the same rate as during the past 5 years, we shall, by the year 1910 require works equal to a supply of 16½ Million Gallons per day.

We have therefore to consider the best means of obtaining this additional 3.4 Million Gallons per day.

It would not be wise to calculate upon getting much more than 1 Million Gallons per day from any one pumping

station; if therefore it is decided to get the water from new pumping stations we shall require two other sites in addition to the Stafford Brook site already purchased.

The expenditure involved in the completion of works now in hand, I estimate as follows as from June 30th 1900:-

	£	
KINGSWINFORD (not including main)		
Estimated expenditure	17158	
Already certified	10091	7067
KINKSFORD		
Estimated expenditure	29444	
Already certified	13309	16135
TRENT VALLEY		
Estimated expenditure	36929	
Already certified	2813	34116
SPRINGS MIRE (re-pumping)		
Estimated expenditure	14500	
Already certified	697	13803
BURTON MAINS		
Estimated expenditure	18600	
Already certified	9790	8810
KINGSWINFORD MAINS		
Estimated expenditure	13048	
Already certified	7675	5373
BARR BEACON MAINS		
Estimated expenditure	7000	
Already certified	5858	1142
		£ 86446

I estimate the cost of further New Works as follows:-

	£
Stafford Brook New Station, near Rugeley	35000
Two other stations at £35000 each	70000
Large main from Barr Beacon for West Bromwich & Smethwick	17219
Covering Barr Beacon Reservoir	12000
Ordinary main extensions 10 years at £8000 per ann:	80000
	£214219

SUMMARY OF EXPENDITURE

	£
For completion of works now in hand	86446
For further New Works	214219
Total	£ 300665

I am, Gentlemen

Your obedient Servant,

H.Ashton.Hill, Mem:Inst.C.E.

Engineer.

February 1901.

The expenditure involved in the completion of works now in hand is estimated as follows from 31st December 1900.

Ashwood	(Not including main)		
	Estimated expenditure	£17158	
	Already certified	£13674	£3484
Hinksford			
	Estimated expenditure	£29444	
	Already certified	£19639	£9805
Trent Valley			
	Estimated expenditure	£36929	
	Already certified	£4437	£32492
Springs Mire	(re-pumping)		
	Estimated expenditure	£14500	
	Already certified	£2819	£11681
Burton Mains			
	Estimated expenditure	£18600	
	Already certified	£17563	£1037
Kingswinford Mains			
	Estimated expenditure	£13048	
	Already certified	£11916	£1132
Barr Beacon Mains			
	Estimated expenditure	£7000	
	Already certified	£6401	£599
			£60230