


S. S. W. W.

DESCRIPTION OF PUMPING STATIONS
1921.

VOL. I

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SOUTH STAFFORDSHIRE WATERWORKS COMPANY.

PUMPING STATIONS.

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SHAVERS END PUMPING STATION.

situate at

DUDLEY in the County of STAFFORD.S U M M A R Y
-----Total Engine Power at Station is equal
to 7000,000 gallons per 24 hours.

No. 1. Engine Power per 24 hours	...	350,000 gallons.
No. 2. do do	...	350,000 "

TOTAL SPECIFIED HEAD = 100 Feet.COSTS

	£.	s.	d.
Land and Law Charges ...	250.	0.	0.
Store Room and Engine House,	950.	0.	0.
Cottage ...	254.	5.	6.
Gas Engines ...	791.	17.	1.
	<hr/>		
<u>TOTAL COST</u>	£2,246.	2.	7.

Station Commenced. - 1894.

Station Completed - 1905.

LANDPurchased in three Instalments from:-

Earl of Dudley	...	1862
Whitehouse, Hill & Rollason,		1875
Earl Dudley	...	1893

Total Area of Land :-

2 acres, 1 rood, 27 poles, 9 yards.

NOTE:- The above land includes that of
the Reservoir.

Top Water Level of Reservoir	...	742	Ft. O.D.
Bottom do do	...	724	" O.D.
Depth of Reservoir	...	18	"
Capacity of do	...	5,000,000	galls.
Level of E.H.F. above O.D.	...	733.9	Ft.

CONTRACTORS.BUILDINGS

<u>1st Engine House</u> (now Store Room) erected		
by H. Dorse & Son, Cradley...		1894
<u>Cottage</u> by do do ...		1894

<u>2nd Engine House</u> erected by George Law,		
Kidderminster, ...		1905

ENGINES.

<u>Nos 1 and 2 Gas Engines</u> erected by		
Tangyes Ltd, Birmingham ...		1905

C O S T S

	<u>£.</u>	<u>s.</u>	<u>d.</u>
Land and Law Charges ...	250.	0.	0.
Store Room and Engine House ..	950.	0.	0.
Nos 1 and 2 Engines (Gas) ...	791.	17.	1.
Cottage ...	254.	5.	6.
<hr/>			
<u>TOTAL COST</u>	£ 2,246.	2.	7.
<hr/> <hr/>			

DESCRIPTION OF ENGINE HOUSE.

Internal Dimensions, Length ...	29 Ft - 0 Ins.
ditto Width ...	24 Ft.
Height to top of Wall Plate, ...	12 Ft.
Depth of Foundations ...	6 Ft

STORE ROOM (Old Engine House)

Internal dimensions, Length ...	22 Ft - 6 Ins.
ditto Width ...	16 Ft.

PARTICULARS OF ENGINES

TYPE OF PLANT

Two Double-Acting Piston Pumps
driven by Gas Engines.

CAPACITY OF PLANT.

Each set is capable of pumping, per
24 hours at a speed of 26 revolutions
per minute, a net quantity of -
350,000 gallons.

(5% allowed for Slip in arriving at
above amount).

SPECIFIED HEAD

<u>Total Head on Pumping Main,</u>		
<u>including friction</u>	-	100 Feet
Revolutions of Pumps per minute	...	26
Pump Horse Power of each set	...	7-35.
Brake Horse Power of Engines	...	14 (Each).

GAS ENGINES

Each Engine is a Tangye Engine,
"Otto" principle, "G" Size, for
Town Gas; Horizontal type; capable
of giving a maximum of 17½ effective
H.P. (equal to 20½ I.H.P.) at a
speed of 210 revolutions per minute.

Maker's No. on No. 1. Engine - 9159 B.
 ditto No. 2. Engine - 9173 B.

Centre line of Engines from E.H.F...		2 Ft - 7 Ins.
Diameter of Pistons	... ..	8
Stroke	... ..	17 Ins.
Diameter of Crank Shaft Bearings	... ..	3½ "
" Fly Wheels	... ..	5 Feet.
Width of Rims	... ..	6 Ins.
Diameter of Cast Iron Driving Pulleys,	24 "	
Width of Rims	... ..	13 "

PUMPS

Tangye's Belt Driven Geared type
Double-Acting with Brass Valves
having Gutta Percha Beats.

Maker's No. on No. 1. Engine Pump - 2687.
 ditto No. 2. Engine Pump - 2688

Centre line from E.H.F. ...	...	2 Ft - 2½ Ins.
Diameter of Pump Piston ...	...	10 Ins.

PUMPS (continued).

Stroke	...	...	...	18	Ins.
Diameter of Pump Rod	...	...	...	2	"
Gallons pumped per double stroke				9.996	
Multiplier given to Foreman	...	...	...	10	
Diameter of Fast and Loose Pulleys,				45	Ins.
Width	ditto	...	...	6 $\frac{1}{2}$	"
Revolutions per minute of Fast Pulleys,				112.	

FORCE PUMP VALVES.

No. of Suction Valves to each Pump,				2	
No. of Delivery Valves	ditto			2	
Metal	...	...	...	Brass.	
Seats of Valves are driven in with a					
taper of	...	...	...	1 in 11	
Diameter of Suctions to Pumps	...			8	Ins.
"	Deliveries from Pumps			7	"
"	Suction Main from				
	Reservoir to Pumps	...		12	"
"	Delivery Main from Pumps,			10	"

SUCTION AIR VESSEL

Internal Diameter	...	...	...	25 $\frac{1}{2}$	Ins.
Thickness of Metal	...	...	...	1	"
Approximate length overall	...	...	...	7 Ft - 9	Ins.

DELIVERY AIR VESSEL.

Internal Diameter	...	...	...	25	Ins.
Thickness of Metal	...	...	...	1 $\frac{1}{4}$	"
Approximate length overall	...	...	...	6	Ft.
Diameter of Water Level Gauge Glass				$\frac{3}{4}$	In.

AIR CHARGER ON DELIVERY AIR VESSEL.

Wipperman and Lewis type.

WHEEL GEARING ON PUMPS. - Machine Cut Gear.

Spur Wheels	...	...	76 Teeth.
ditto	Revolutions per minute,		26
Pitch of Teeth	...	...	1 $\frac{3}{4}$ Ins.
Width of Spur Wheels (across Face)			5 "
Pinions	...	...	18 Teeth.
Width of Face	...	...	5 $\frac{1}{4}$ Ins.
Overall Width	....	...	6 $\frac{3}{4}$ "
Pitch Diamater	...	...	10.026"

PINIONS

Compressed Paper Pinions having
Mild Steel Flanges, complete with
Bush having Grooved Extension Piece.

RELIEF VALVES ON DELIVERY FROM EACH PUMP.

Type	...	...	...	Lever weighted.
Diameter	...	...	...	4 Ins.

FITTINGS

Hardings Counter on each Pump.

One Bourdon Pressure Gauge open dial marked
in Feet and in Lbs for a working head
of 100 Feet 10 Ins dia.

Open Dial Compound Vacuum Gauge to each
Engine 10 Ins dia.

One No. 2. Wells Oil Filter.

SPARES AT STATION.

One spare Pump Piston.

SHAVERS END P.S.

SPARES (Continued)

One complete set of Suction and Delivery
Valves for one Pump (Spare Seats
not included).

Height of Main Pressure Gauge from

E.H.F. 4.175 Feet.

CONSUMPTION.

The Contractors guaranteed that the
Consumption with Gas of 610
British Thermal Units per cubic
foot heat value would be 21 cubic
feet per Brake Horse Power, but
as the working head was less than
that specified, the full duty was
not expected.