Local & Munl. (1897) Department.

MISCELLANEOUS.

G.O., No. 245 M

DATED 1-10-97

INDEXED.

DESPATCHED

[Despatch Abstract.]

Red Hills Tank

Recording memo: from the P.W.D. transferring correspondence on the subject of the Cost of pumping at the —; & drawing the attention of the Munl. Commr. Madras to the chief Engineer's remarks regarding the pumps & Engines used in the water works.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

Local & Munl. (1897) Department.

CURRENT No. 3320 M

Again G.O. No. 1984 M(d) 18th November 1896 and C. Nos 845, 1828 & 3320 M/97

From The Public Works Department.

Misc **Order** No. 2145 M. mis. d/ 1. 10. 97.

Recorded.

2. The attention of the municipal Commissioners will be drawn to the Chief Engineer's remark regarding the pumps and Engines used in the waterworks.

V.R.
29/9/97

1/10/97

No. 1416 D

Dated 17-9-1897

Received 22-9-1897

Registered 22-9-1897

Enclosures C. Nos 845 & 1828 M retd.

Spare copies.

SUBJECT.

Transferring correspondence regarding the cost of pumping at Red Hills

P. Rep 3320 to O

To
The President, Munl Compt. Madras
" P.W.D. Epartt. P.D.

Despd. 7/10/97

M
5/10/97

28/9/97 ay 29/9

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

No. 1416 D

Government of Madras.

Public Works DEPARTMENT.

LOCAL & MUNICIPAL DEPT.
No. 3320 M

MEMORANDUM.

Dated ~~Madras~~ Ootacamund 17: September 1897.

Note by the Chief Engineer, Public Works Department No. 1415 D., d/17: September 1897.

In my note dated 6th November 1896, I stated that the cost of pumping seemed excessive though there might be unexplained circumstances that justified the expenditure.

2 The letter No. $\frac{W.W}{127}$ dated 29th April 1897 from the Engineer of the Madras Municipality to the President gives some reason which account for the apparently high cost of the work, and these may be accepted. I would however remark that the pumps and engines used seem to be of a very inferior description as their efficiency is stated to be only 25 per cent.

(Signed) D. McNeil Campbell, Col. R.
Chief Engineer

No. 1416 D., d/17: September 1897

Transferred to the Local and Municipal Department with reference to its endorsement

P. W. 41
1,000—14-7-97

endorsements Nos. 476 and 568 dated respectively 8th April and 10th May 1897

Col. R. E.,
Secretary to Govt.

To The Local & Municipal Department
with the original papers returned

Public works

~~Local & Munl.~~ (1897/98) Department.

CURRENT No. ~~845 M~~ 3644

TO BE RETURNED WITH REPLY.

From

THE PRESIDENT,
Municipal Commission,
Madras.

SECRETARY TO GOVERNMENT
25. FEB. -1897
LOCAL & MUNICIPAL DEPARTMENT

No. 476.

~~Order~~

Referred to the Chief Engineer for favour of remarks, with reference to his note, forwarded with the endorsement of the Public Works Department, No. 3915 C. dated 6th November 1896.

Secretary to Govt.

V. R.
5/4/97

Fort St. George
8 April 1897

W no orders
10/4/97

To
The Public Works Departt.

9/4/97

P.W. No. 1750

Dated 24 February 1897
Received ~~25-2-1897~~ 9.4.97
Registered ~~25-2-1897~~ — " —
Enclosures 1
Spare copies

SUBJECT.

Re Cost of pumping at Red Hills.

Submitting resolution of the Commissioners and stating that the only satisfactory way of arriving at any conclusion is by a practical test

BACK PAPERS

G.O.	No.	Department.	Date.
Go	209	M	12-2-97
Go	125	Mm	30-1-97
Go	2084-84A	M	7-12-96
Go	1984	Mm	18-11-96
Go	2140	M	21-12-95

FURTHER PAPERS

G.O.	No.	Department.	Date.

P.W. / L.

W.W. No. 1750

MUNICIPALITY OF MADRAS,
Public Works Department,
Madras, 24th February 1897.

LOCAL & MUNICIPAL DEPT.
CURRENT No. 845M

From

LIEUT.-COL. G. M. J. MOORE, C. I. E.,
President, Municipal Commission.

To

The Secretary to Government,
Local and Municipal Department,
Fort Saint George.

SIR,

With reference to G.O.No.125 M.Mis., dated 30" January 1897, I have the honor to submit a resolution passed by the Commissioners at a General Meeting held on the 22nd Instant.

Enclosure. 1

2. In connection with this resolution, I have the honor to state that I consider the only satisfactory way of arriving at any conclusion is by having a practical test. The Chief Engineer argues from figures.

3. In para 4 of his note referred to in the above -- quoted G.O. he states that 8.82 H.P. is required to lift a certain quantity of water a certain height. I accept that figure. He then adds 80 percent thus contending that the efficiency of the plant is about 55 percent. This I ------- distinctly traverse.

4. Mr. Ellis estimates the efficiency at about 25 percent. Mr. Loane puts it at about 20 percent. Probably a mean between the two would be more correct.

5. The Chief Engineer's efficiency, I presume, is calculated on the water measured. His allowance of 80 ---- percent is that allowed for New Engines under favourable conditions. Mr.Ellis' and Mr. Loane's calculations are --- based on actual conditions, anything but favourable. Under these conditions after the water is delivered by the pump it has to travel along earthen channels to the weir where it is measured by the P.W.D. There must be a certain loss by

by evaporation and absorption during this journey. Further, when it did arrive at the weir, there was undoubtedly a still further loss through leakage, owing to the faulty condition of the weir which was only put into thorough repair last year.

6. The portable plant used at the Red Hills was anything but new. The high wind at the Red Hills acting on the belts would cause a further loss of efficiency. It is impossible, ofcourse, to say positively what loss of efficiency was caused by all these different causes, but I --- contend that the efficiency laid down in theory for new engines-- under favourable conditions, cannot be compared with that obtained by anything but new plant under unfavourable conditions.

7. I therefore consider that it would be more satisfactory to have a practical test at the Workshop. The engines and pumps used at the Red Hills are there and although the conditions at the Workshop will be more favourable to the Chief Engineer's contention I am --- prepared to abide by the result.

I have the honor to be,

Sir,

Your most obedient servant,

Geo. M. Moore Lt.Col.

President, Munl. Commn.

BM

Dec.1
8644 (97

Encl No I to letter No 1750

Resolution referred to

G.O.No.125, M.Mis., dated 30th January 1897, requiring to submit to Government the resolution of the Commissioners on the remarks of the Chief Engineer re cost of pumping at Red ---- Hills.

Proposed by M.R.Ry.R.N. Pragasa Mudaliar Avargal and seconded by M.R.Ry.P. Theagaraya Chetty Garu -

"That with reference to G.O.No.125 M.Mis. dated 30" January 1897 requiring to submit to Government the resolution of the Commissioners on the remarks of the Chief Engineer re --- cost of pumping at Red Hills, the Commissioners request that the Engineer may be called upon to submit a detailed explanation on the various items of expenditure referred to by the Chief ----- Engineer, to explain further in detail whether the cost incurred by the Municipality is extraordinarily high as pointed out by him and also to show how our cost of pumping compares with that of the Public Works Department if the case admits of any ------ comparison and if necessary a test should be made"

Carried.

1
8445 mob 1897

P-W.

Ans.

Local & Munl. (1897) Department.

~~Requisition for 1987 m.m.s. sent to L.t m Dept 18/11-98~~ W ~~4-9-97~~

CURRENT No. 4788 ~~1828. M~~

R. 11-5-97

For orders
Rw
18/5/97

From

THE PRESIDENT,
Municipal Commission,
Madras.

No. 568 d/ 10-5-97

~~Order~~

Referred to the Chief Engineer in Continuation of Endorsement No. 746, dated 8th April 1897.

S. J. Forbes
Secretary to Government

P.W. No. 155

Dated 30 April 1897

Received ~~4 MAY 1897~~ 14-5-97

Registered ~~4-5-97~~

Enclosures 3 ~~Two~~

Spare copies

SUBJECT.

Red Hills pumping

Forwarding report from the Engineer from which it will be seen that the efficiency of the Engine as shown by the test is 25 and not 55 as assumed by the Chief Engineer

V.R.
7/5/97
~~Fort St George~~ Ootacamund.
7th May 1897

~~The G.O. of 12 May 1896~~
~~not on the file~~. put it up
~~S.J.B. 10/5/97~~

18/5/97 Madras office for taking Rw

Chief Engineer
P.W. Depart.

HC

Returned
HC
to be put up 12-5-97
for Govt orders
Ex.
14/5/97

1/1828

21/5

O.L.O

O.L.S. 1164
17/5

O.L.S. 1164 Sent again 17/6

No. 2218 C d/ 21-4-97
5036 C d/ 21-12-96
3915 C d/ 6-11-96
203 W d/ 17-1-96
3146 C d/ 28-10-95

BACK PAPERS

G.O.	No.	Department.	Date.
Cir	845/97		
Ro	125	Rn	30-1-97
Ro	1984	Mis	18-11-96
„	2140	Rn	20-12-95

FURTHER PAPERS

G.O.	No.	Department.	Date.

Enclosure to W.W./155
W.W./127 D/29-4-97

TO

The President,

M. M. C.

Sir,

With reference to the resolution of the Commissioners dated 22nd February 1897 and to the Chief Engineer's note contained in G.O. No 1984 M.Mis. dated 18th November 1896, I have the honor to report as follows:-

Paras 2 & 3; Statement A was prepared with the view of getting at the cost of pumping, and all charges which did not come under the other headings were placed in Col.1 and includes the cost of staff kept in readiness at Red Hills, from the date of taking up the machinery to the date of pumping and also cost of staff for the period after pumping was stopped till the Engines were returned to Workshop extending over a period of several weeks as shewn below:-

1891	13 weeks
	4 weeks
1892	10 weeks.
1893	

The Chief Engineer did not take this into account in his note as the fact was not specifically mentioned in the original statement. The item could not be brought under pumping as the expenditure was incurred before pumping was commenced and after pumping was finished.

1/1828 M. of 1897

The actual cost of establishment referred to in para 3 compares very closely with that allowed by the Chief Engineer.

Statement of staff, as allowed by Chief Engineer.

3 Engine Drivers	50	150
12 Fire-men	10	120
12 Pump-men	8	96
60 coolies	6	360
1 Superintendent	150	150
1 Store-keeper	30	30
1 Time-clerk	20	20
2 Store-coolies	8	16
Total		942

Statement of staff as actually employed.

1 Superintendent	100	100
1 Time-keeper	12	12
1 Store-clerk	15	15
4 Watchmen	6	24
2 Tapals	7	14
2 Store-cooly	7	14
3 Engine Drivers	45	135
2 Fitters	30	60
12 Firemen	20	240
12 Pumpmen	10	120
36 Engine coolies	8	288
2 Scavengers	5	10
		1,032

The question of erecting permanent sheds was considered by the Standing Committee at a meeting held on 18th September 1896 and was not recommended.

Para 4. With reference to the points raised in this paragraph, the whole question turns on the efficiency of the Engines and pumps. From a careful test made at the Workshop on the 29th March 1897 the efficiency of one of the Engines and pumps used at Red Hills was found to be 25 %; taking this as the basis of further calculation the 1.H.P required to raise the 6 million gallons a day 7 ft. is 8.82 X 4 = 35.28 and not 16 as assumed by the Chief Engineer. Taking 30 lbs. of fuel-~~used~~ per I.H.P per hour allowed by the Chief Engineer, the quantity of fuel used would have been 25,401 lbs. per day and the quantity used on 4½ months would have been 1,530 tons as against 694 tons as estimated by the Chief Engineer and the cost at 6/8 per ton would have been Rs 9,945 and not Rs 4,510.

The Chief Engineer after allowing for establishment, oil fuel &c contingencies brings the "should be" cost to Rs 9,460 compared with the actual of Rs 18,302. The Chief Engineer's figures are not complete as no allowance has been made by him for taking up the Machinery erecting the same removing it to Madras, putting it in repair and keeping the staff at Red Hills in readiness before pumping was commenced nor does he include the cost of sheds.

Taking the Chief Engineer's figures for staff, oil contingencies and adding the amount in column 1 in statement A which represents the actual cost of the items omitted and adding the cost of fuel calculated at 30 lbs. per 1.H.P we get the following estimated expenditure of Rs 18,568:

Fuel	9,945 ✓
Oil, cotton waste	200 ✓
Contingency	250 ✓
Establishment 4½ months..	4,239 ✓
Col.1 in statement A	3,934
	18,568

which is Rs 266 more than the actual cost incurred by this Department.

With reference to para 5 the staff was kept at Red Hills in readiness as stated above. The items amounting to Rs 1,531-13-1 should have been abstracted under col. 1 in statement A. Full particulars of the expenditure incurred at Red Hills are available in the office but abstracting the details under different headings after so many years is a troublesome matter and is the work of a skilled Accountant to avoid error.

I regret I have been unable to obtain any figures from the Chief Engineer in connection with cost of pumping by the Public Works, Department under similar conditions and am unable to submit any further comparison beyond that referred to in your letter No 1515 dated 18-12-96 to the Secretary to Government L & M wherein it is shewn that the cost of pumping at Red Hills by the Government Public Works Dept. in 1876-77 was about 3 times as costly as when executed by this Dept. in other years, and in the light of trial made at the Workshop and ~~is~~ of the figures submitted, I can say with confidence that I do not consider the expenses incurred at Red Hills are in any way high.

I have the honor to be,
Sir,
Your most obedient servant,

R E Ellis

Engineer.

Water Works Dept.)
Municipal office,)
Madras, 29th Apr. 97.)

6w5.3
4788/97

Test of efficiency of Engines and Pump used at Red Hills.

Date of test.............. 29th March 1897.

Place .... Municipal Workshop.

Description of Engine ..... Double Cylinder non-condensing portable.

Diameter of Cylinder ...... 8"

Stroke .... 12"

Revolution per minute ..... 100. – Probably known. No data to verify

Description of pump .... 10" Centrifugal by Gwynne.

Quantity of water pumped .. 307,527 gallons in three hours.

Height of water lifted .... 7 feet.

Duration of trial .... 3 hours.

Indicated H.P. of Engine .. 14.42 – Calculated 14.4648

H.P. of water lifted ...... 3.62 " 22.6

Efficiency of Engine ...... .25 calcd 4.85

R E Ellis
29.4.97

2
1828 M. of 1897.

4288(5)

W. W. No. 155

MUNICIPALITY OF MADRAS,
Public Works Department,
Madras, 30 April 1897.

From

LIEUT.-COL. G. M. J. MOORE, C. I. E.,
President, Municipal Commission.

LOCAL & MUNICIPAL DEPT.
CURRENT No. 1828 M

To

The Secretary to Government,
Local and Municipal Department,
Fort St. George.

SIR,

[illegible]

Enclosure.
Two

In continuation of my letter No W.W. 1750 dated 24th February 1897, I have the honour to forward the accompanying report from the Engineer, from which it will be seen that the efficiency of the Engine as shown by the test is 25 and not 55 as assumed by the Chief Engineer.

I have the honour to be,
Sir,
Your most obedient servant,
G M J Moore Lt.-Col.
President, Munl. Commn.

ow3.2
4788(97)

When given for copying
When copied
When examined
When signed
189 .

READ AGAIN G.O., No. "
189 .
DATED

CURRENT NO.

INCLOSURES TO C. NO.

ORDER OF GOVERNMENT .. .. .. A A A A A A A

LETTER OF GOVERNMENT

STATEMENT WITH DITTO

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