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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	2267	Press
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Dated	28. 8.	195
		1876

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
28th August 1876. No. 2,267.*

Read the following papers :—

No. 607. Endorsement of the Chief Secretary to Government, dated Ootacamund, 19th June 1876, No. 919.

From A. J. STUART, Esq., President of the Municipal Commission, Tinnevely, to the Hon. W. HUDLESTON, Chief Secretary to Government, dated Nunguneri, 26th May 1876, No. 221.

I HAVE the honor to submit, for the order of Government, the enclosed correspondence between the Vice-President of the Tuticorin Municipality, the District Engineer, and myself, with reference to the payment of bills amounting to Rupees 1,341-9-6 for water supplied to the town of Tuticorin for domestic purposes.

2. Government in their Order, No. 3,076, dated 29th October 1872, fixed Rupee 1 per 1,000 cubic yards to be measured at Meylur as the charge to be made for this water.

3. The facts of the present case without the reasons for them appear to be that the water was measured at Korampalem tank and not at Meylur, and that on the other hand there was a considerable waste of water through the Tuticorin swamps into the sea.

The first of those facts is consistent with the supposition that the wastage before the water reached Meylur near Tuticorin may have been much greater than 60 per cent., at which rate it has been calculated by the Engineer.

The second makes it matter of no surprise that there should be some increase in the water bills this year, though it remains doubtful whether this will account for so large an increase as that shown in the bills.

4. As it happens the water in the Korampalem tank is at present of no use to the Government for cultivation or other purposes, so that there was no loss occasioned by the waste of water which took place in Tuticorin.

5. I beg therefore to suggest that this being the case the Government may be pleased to remit the payment of the excess of this bill of this year over that paid last year,* as a special indulgence, in consideration of the novelty of the arrangement.

* Rupees 669-3-6.
ments, and of the fact that the Tuticorin people were not aware how much water was running to waste until they got the bill. They will doubtless be more careful next year.

6. Measurement at Meylur should, I think, in future be insisted on, as a condition of the charge of Rupee 1 per 1,000 cubic yards. I cannot but think the District Engineer will find some method of gauging the quantity of water delivered there, and, even if it be necessary, to construct some small new work for the purpose; it is quite worthwhile, as in no other manner can the uncertain loss by leakage be excluded from the bill.

7. Should the bill next year with due economy on the part of the Municipality and measurement by the Public Works Department quite free from objection still be very heavy, I will again submit the matter for the orders of Government, as the Municipality cannot afford to take the water if the bill is as heavy as it is this year.

8. With a view to the permanent storage of a supply of water for Tuticorin the District Engineer proposes to bund off a portion of the Korampalem tank. I beg to recommend this, but to suggest that the cultivation under this tank being still trifling, the matter be deferred until another year's experience has been obtained, as to the quantity which it is necessary to provide storage for and so the proper site for the bund. I think that for this purpose it will be necessary to gauge the water at the Korampalem tank sluice as well as at Meylur in the coming season; as, in order to supply a given quantity at Meylur, a much larger quantity must be stored at Korampalem, owing to the leakage in the channel between Korampalem and Meylur which is carried on a rather high level through sandy soil.

From J. D. GRANT, Esq., Officiating District Engineer, Tinnevely, to A. J. STUART, Esq.,
President of the Municipal Commission, Tinnevely, dated Tirukungudi, 16th December
1875, No. 533.

I HAVE the honor to forward to you a bill for Rupees 640-10-0 for the water supplied to the
Tuticorin Municipality up to November 30th.
from October 22nd, being at the rate of Rupees
16 per day.

1 Bill.
2 Accounts.

1 Copy of letter No. 447, 6th November 1875.

supply of water to North Tuticorin involving the heading up of water one foot four inches above the weir erected for the purposes of measurement, the gaugings on which the enclosed bill is founded were taken at Korampalem tank sluice; the amount (62 per cent.) found by experiment to be lost in the channel being deducted from the quantity discharged by the sluice, and the balance (38 per cent.) charged for at the rate of 1 Rupee per 1,000 cubic yards.

3. From the bill you will observe that the daily average quantity of water delivered at Meylur reservoir was 16,165 cubic yards, or 2,728,000 gallons, being at the rate of 272 gallons per head of the population (population by census is 9,544). While in England the highest quantity allowed for manufacturing towns is 30 gallons per day per head.

4. Notwithstanding this enormous consumption, however, the water does not reach North Tuticorin, the last well properly supplied on my examination being the last one on the south of the railway, distant 800 yards from the Meylur reservoir.

5. As the inhabitants of the houses along the first 800 yards of the line of pipes are within easy reach of the basins supplied by the masonry conduit, the supply by the pipes is not of much benefit to them; but the inhabitants of North Tuticorin depend entirely on the pipes for their water, and, as they are not supplied, the line of pipes may be considered to have failed entirely.

6. It is somewhat difficult to say exactly what is the cause of this failure, and it probably is due to several causes:—

1st.—The pipes being choked by sand and roots;

2nd.—Disregard of levels in laying the pipes and bad workmanship;

3rd.—Leakage consequent on the two above causes.

7. There is no doubt that the pipes are constantly being choked by roots, and my testimony is unnecessary regarding it in the matter of levels, however it may be well to explain fully.

8. The crest of the measuring weir at Meylur is at a height of 7-90 above mean sea level and we can therefore deliver water in the Meylur reservoir at a level of 7-50 above mean sea level.

9. The highest street in North Tuticorin is 8-00, and that for only a very short distance, while the ordinary height is 5-00 to 6-00 above mean sea level; it is possible therefore allowing 1-00 head to deliver water anywhere in North Tuticorin at 6-50 or 6 inches above the level of the streets.

10. The parapets of the wells should be sufficiently high to prevent the wells overflowing, and the conduit should be laid at as low a level as is consistent with its being beyond the influence of salt water, and yet sufficiently weighted by the earth to enable it to resist the internal pressure.

11. The sections show that the level of the present off-take of the masonry conduit is suitable, and were a good masonry conduit on that level led to North Tuticorin, there would be no difficulty in supplying water and no necessity for heading up the water in the channel. It would perhaps be more economical to supply North Tuticorin by a branch from the main conduit at the basin near the Dispensary, connected with the wells on the present North Tuticorin line somewhere near the Protestant Mission Church.

12. Till, however, the Municipality consider it necessary to reorganize the present arrangements, it is useless for me to enter into details on the subject; but I think it my duty to draw your attention to the waste of water which is caused by the defective arrangements in use.

13. The greater part of the water charged for in the present bill has, however, been expended in filling up the swamp, through which for several weeks it has been I believe running waste to the sea.

14. On previously visiting Tuticorin I observed the loss of water and addressed the Vice-President on the subject; as, however, it is possible you may not have seen my letter, I beg to enclose a copy.

From J. D. GRANT, Esq., Officiating District Engineer, Tinnevely, to R. RICE, Esq., Vice-
President of the Tuticorin Municipality, dated Ambasamudrum, 6th November 1875,
No. 447.

I HAVE the honor to inform you that owing to the water at Meylur being backed up for the supply of North Tuticorin, not only are we prevented from taking measurements of the water supplied, but a larger proportion of water is absorbed on its way from Korampalem tank to Meylur, and the level of water is higher than the channel was constructed to carry.

2. Owing to the objections raised by the Municipality to the water-supply being measured at Korampalem tank, a measuring weir was constructed at Meylur, and the levels were so arranged that with water in the reservoir a little below the level of the crest of the measuring weir, the water could with ease be delivered in any street in Tuticorin.

3. The water, however, has not I believe reached North Tuticorin; and, as the reservoir at Meylur is sufficiently high, it appears possible that there is some defect in the distributing works, which backing up the water as is now being done will only tend to aggravate.

4. I would therefore beg to suggest that the supply of North Tuticorin be taken through the reservoir, and that the small cistern and dam lately constructed be removed, as by their use we are precluded from measuring the water; the water is wasted and the channel bank endangered without any good result being produced.

5. I should feel obliged by your favoring me with a reply as early as possible.

From R. RICE, Esq., Vice-President of the Tuticorin Municipality, to A. J. STUART, Esq.,
President of the Municipal Commission, Tinnevely, dated Tuticorin, 24th April 1876,
No. 45.

With reference to your letters, Nos. 8 and 140, dated 6th January and 20th March 1876, and to their enclosures, bills from the District Engineer for water supplied to this town from the Korampalem tank, I have the honor to state that the Commissioners are unanimously of opinion that some error must have been made in the calculation of water supplied.

2. The bills we have now received for water supplied for only 4 months and 10 days from the 22nd October 1875 to the 29th February 1876, amount to Rupees 1,341-9-6. On comparing these with those received in the year 1874 for 5 months, viz., from July to November, when the supply of water was as abundant as during the months for which the bills are now received, the Commissioners find that the charge amounted to only Rupees 669-3-6.

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3. The following table shows the amount of demand for each month in the two years:—

1874.	Amount.	1875-76.	Amount.
July and August	Rs. A. P.	From 22nd October 1875 to	Rs. A. P.
September	471 6 11	November 1875	646 10 2
October		December do.	288 7 4
November	197 12 7	January 1876	219 6 0
		February "	187 2 0
Total	669 3 6	Total	1,341 9 6

4. It is obvious that the Municipality in the present crippled state of its finances cannot possibly, if regard is to be had to other most necessary and pressing requirements, meet the charges for water-supply at the present rate of demand; in fact at this rate the whole of its income would be swallowed up, and it might as well cease to exist. The cause of the enormous increase in the present rate of demand over that for the preceding year is stated to be that owing to the fact of the water at the reservoir sluice being backed up by a small cistern and dam constructed to direct the supply to the northern part of the town, but which failed in its purpose owing to some faultiness in the levels the officers of the Public Works Department were unable to gauge the supply at the tank discharge sluice, showing thus after deducting percentage for wastage, &c., the enormous quantity of water consumed by the inhabitants of Tuticorin, which is set forth in the tables submitted by the District Engineer. True there was great waste of water which, owing to defects in the conduit and distributing pipes, could not be utilized for drinking or domestic purposes, and which consequently passed by the surplus channel into the large swamp, but I am informed that the quantity of water in this swamp was equally great last year when the charges were only about half the present rate, and manifestly we could not have consumed a quantity in excess of that which would warrant the present excess charge as I said before. The reason given for the difference in the charges is stated to be owing to the fact that the supply had to be gauged at the tank sluice instead of at the reservoir sluice, for the reasons mentioned above, but the Commissioners are of opinion that, if the supply could not be gauged at the reservoir sluice, then the average of last year's gauging ought to have been taken as the basis of the charges for the present year. I am desired by the Commissioners to represent these matters to you in view, should you see fit, to your submitting the matters to Government for their consideration and orders, and to add at the same time that, if we are compelled to pay the present bills, we shall be utterly swamped in the coming year.

I append extract from the proceedings of the Commissioners on the subject.

Extract from the Proceedings of the Municipal Commissioners of Tuticorin at a Meeting held on Saturday the 22nd January 1876.

2. Read letters from the President of the Municipal Commission and the District Engineer containing remarks on the water-supply with certain suggestions for the consideration of the Commissioners, and also bills amounting to Rupees 935-1-6 for water supplied from the 22nd October to 31st December 1875.

The Commissioners are of opinion that some error must have been made in the calculation of the quantity of water supplied. On comparing the bills for last year they find that a sum of Rupees 471 only was charged for four months when the supply was as abundant as during the months for which these bills are submitted, and they cannot understand how a sum amounting to

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nearly four times the charge per month for last year comes to be charged now. At this rate of charging the Municipal Funds would be exhausted in a very short time, and the consequence would be that the supply from the Korampalem tank would have to be shut off altogether, a result which the Commissioners could not but regard as a serious misfortune.

The Commissioners are of opinion that it would be preferable to pay a fixed monthly charge of, say, Rupees 100 as in 1874, leaving the regulation of the supply to the officers of the Department of Public Works, and they resolve to request the Vice-President to address the President to the above effect.

Regarding the supply to North Tuticorin, the Commissioners are of opinion that the present pipe service is a failure, and they consider that the suggestion of the District Engineer to take a channel from the basin at the Dispensary to a cistern opposite the Native Protestant Church is the best and most economical one, and they resolve to have an estimate framed in view to provision being made for a masonry channel in the Budget for next year.

They would at the same time ask the District Engineer to be good enough to furnish them with correct levels, &c., for the work.

From J. D. GRANT, Esq., Officiating District Engineer, Tinnevely, to A. J. STUART, Esq., Collector of Tinnevely, dated Palamcottah, 13th May 1876, No. 78.

With reference to your endorsement on the letter of the Vice-President of the Tuticorin Municipality, No. 45 of 24th ultimo, I beg to offer the following remarks:—

2. The Commissioners unanimously give it as their opinion that there must be some error in the calculations of the water supplied because, though the quantity supplied was the same last year as this, the bills for this year are higher. This is scarcely a convincing argument, since it might equally be used to prove last year's charges too low, but in the letter of the Vice-President, no other reason is given for supposing our calculations wrong.

3. In paragraph 4 of the Vice-President's letter, it is remarked that the cause of the increase of the demand is said to be that, owing to the water being backed up, measurements could not be taken at Meylur; this must refer to what is said in paragraph 4 of my letter No. 417, and paragraph 2 of my letter No. 553, though my meaning has not been quite understood.

4. In remarking on the impossibility of measuring at Meylur, I did not intend it to be understood that by measuring the discharge at the tank there would be an increased charge, as I explained that experiments had been made to ascertain the loss in the channel, the additional loss caused by the water being backed up falling on Government not on the Municipality.

5. In regard to the correctness of the measurements, it is certain that we cannot in any case be absolutely accurate in calculations of water discharge; but I do not think it likely that there are any serious inaccuracies in the bills submitted. The only point in the calculations where there is a chance of error is in the percentage deducted for waste in the channel between Korampalem and Meylur, for without constantly making experiments under different conditions of weather, supply, &c., it would be impossible to be accurate.

6. Experiments were made under what were considered average conditions, and from these experiments was deduced the amount of water lost in the channel, and it is just possible that under certain conditions this might give inaccurate results. As, however, a measuring weir was built specially to measure the water at Meylur, in deference to the wishes of the Commissioners, and as this weir was rendered ineffective by the arrangements of the Commissioners, I do not think they can justly complain if our measurements are in some degree inaccurate.

7. Had we continued to measure the water at the measuring weir, and disregarded the backing up of the water, the result would have been bills compared to which those submitted are trifling.

8. The Vice-President admits the waste of water that occurred, but states that the quantity of water in the swamp was the same in 1874 as in 1875-76; of this I cannot speak with certainty, but, as mentioned in paragraph 13 of my letter No. 533, the water does not stand in the swamp

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beyond a certain level, as there is an outlet to the sea, and the loss of water would not therefore depend so much on the quantity of water actually in the swamp, as on the quantity that ran through it to the sea.

9. The Vice-President besides does not take into consideration the line of pipes to North Tuticorin, which were not, I believe, in use in 1874, and to supply which a large quantity of water must have been required in 1875-76.

10. As to the future arrangements for the supply of water to Tuticorin, I think it would be more convenient were the regulation of the water in our hands, the Municipality giving us notice of the quantity required by them, and the only objection I see to this course is that doubts might arise as to whether the quantity supplied was correctly calculated.

11. In a few years the land under Korampalem tank will be cultivated, and differences will undoubtedly occur when water is scarce.

12. The only satisfactory solution of the difficulty that I can suggest, is that a portion of Korampalem tank should be banded off and used entirely as a reservoir for the supply of Tuticorin.

13. No doubt this would be expensive, but without such a reservoir I do not see how Tuticorin can be supplied in a satisfactory manner.

TRANSFERRED to the Public Works Department.

(Signed) W. HUDLESTON,
Chief Secretary.

No. 154-W.

No. 607-A.

Note by the Chief Engineer for Irrigation.

In G.O., No. 1,590, of the 15th June 1874, the rate fixed for the water-supply of Tuticorin was 1 Rupee for each 1,000 cubic yards delivered into the town channel from the Korampalem tank, and it was directed that no charge should be made for the water supplied up to the 31st March 1874.

2. In G.O., No. 3,076, of the 29th October 1874, on a representation by the President of the Municipal Commission, Tinnevely, that the loss of water between the Korampalem tank and Meylur, at which latter place the Municipal water works commence, was 60 per cent., that a further loss occurred from the imperfection of the Municipal distribution works, and that consequently the inhabitants would really have to pay about 4 Rupees for each 1,000 cubic yards of water delivered from the tank, the measurement of the water was directed to be made at Meylur and the charge was to be 1 Rupee for every 1,000 cubic yards of water there delivered.

3. A measuring weir was accordingly constructed at Meylur, a short distance above the Municipal reservoir; but the Municipal arrangements, especially for the supply of North Tuticorin, being very imperfect the water was raised at the distribution reservoir to an extent which made measurement at the weir impracticable, and the only alternative was to measure at the tank sluice and deduct the percentage of loss as previously determined by experiment.

4. It appears further that the quantity of water admitted to the town supply channel has been regulated by the Overseer under orders from the Vice-President, whose instructions he had been directed to attend to.

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5. The result of maintaining water at a high level at Meylur together with imperfect distribution works has been great waste, some through the town distributaries, other into the swamp and then into the sea, and the Commissioners finding the water bills heavy first doubt the correctness of the quantities charged for, and the President further pleads the inability of the Municipality to pay the charge.

6. There appears no good ground for supposing that the quantities delivered at Meylur have been incorrectly estimated. The causes of waste after reaching Meylur have been indicated, and, so long as they remain unremoved, the Municipality, if it is to pay for the water supplied, will have to pay much for a very small corresponding benefit. The remedy is obvious: the distribution arrangements require to be radically reformed, and no doubt it will cost a large sum of money to do properly what has been done cheaply and inefficiently in the first instance.

7. The question whether the Government or the Municipality should pay for the water-supply of Tuticorin is one on which the undersigned has not to offer any opinion, but it would seem to be necessary that the Striviguntum Anicut Project should receive credit for the value of water supplied by it, and it is suggested therefore that the Order of the 29th October 1874, No. 3,076, should be modified to the extent of arranging for crediting the Striviguntum Anicut Project with the value of the water delivered at the Korampalem tank town sluice, and for the payment from Provincial or other funds of the difference between that value and the amount which Government may require the Municipality to pay.

8. The approximate general abstract of financial results of the Striviguntum Anicut system up to the end of 1874-75 shows:—

	RS.
Expenditure to end of that year ...	10,60,597
Revenue to do. ...	*62,928
Interest charges to do. ...	1,94,236

* Without deduction for working expenses which are believed to be very considerable.

So that evidently the project cannot afford to supply water without payment. Up to March 1876 no payment whatever for water appears to have been made by the Municipality.

(Signed) JOHN MULLINS, Lt.-Col., R.E.,
OOTACAMUND,
3rd August 1876.
Chief Engineer for Irrigation.

To the Secretary to Government, Public Works Department.

No. 608. ORDER THEREON, 28th August 1876, No. 2,267.

CIVIL WORKS, No. 54-A.

HIS GRACE the Governor in Council is prepared to assist the Municipality of Tuticorin by accepting a payment of Rupees 140 a month for a period of 2 years to enable them without excessive taxation to obtain a supply of good water while the town distribution channels, pipes, &c., are being placed in a satisfactory and efficient state. At the end of 2 years the supply delivered at Meylur will be paid for at 1 Rupee per 1,000 cubic yards.

2. Measures should be at once taken by the Municipality for remedying the defects of the town distributaries from Meylur, and the District Engineer will afford

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the Municipality his advice and assistance, the subordinate agency required to take levels and prepare the plans and estimates being provided by the Municipality.

3. The District Engineer will also carefully consider by what means the great wastage from the channel between the Korampalem tank and Meylur can be materially reduced if not avoided, and as soon as the arrangements for Municipal distribution below Meylur have been decided upon, he should determine by what means an accurate measurement of the water delivered at Meylur may be secured. These will depend upon the water-level found to be necessary at Meylur for the effective supply of the town.

4. It is observed that no payment appears to have been made by the Municipality for the water-supply hitherto obtained, and the amount due at Rupees 140 a month from the 1st April 1874 should be adjusted at once.

(True Extract.)

(Signed) G. W. WALKER, Major-General, R.E.,
Secretary to Government.

To the District Engineer, Tinnevely.
" Chief Engineer for Irrigation.
" Examiner of Public Works Accounts.
" Financial Department.

Exd. E. C. Shunker.
Spare Copies

No 533

District Engineer's Office
Tinnevely
Tinnevely 16th December 1875
9

From The Offr District Engineer
Tinnevely

To The President
Tuticorin Municipality

Sir I have the honor to forward to you a Bill for Rs 646-10-0 for the water supplied to the Tuticorin Municipality up to November 30th from October 22nd being at the rate of Rs 16 per day.

2. Owing to the arrangements for the supply of water to North Tuticorin involving the heading up of water 1'-4" above the weir erected for the purposes of measurement, the gaugings on which the enclosed Bill is founded were taken at Korampallam Tank sluice, the amount, the amount (62 per cent) found by experiments to be lost in the channel being deducted from the quantity discharged by the sluice, and the balance (38 per cent) charged for at the rate of 1 Rupee per 1000 Cys.

Enclosures 4.
1 Bill
2 Accounts
1 Copy of letter
No 447
6-11-75

3 From the Bill you will observe that the daily average quantity of water delivered at Meyler Reservoir was 11,165,481 or 2728000 gallons, being at the rate of 272 gallons per head of the population (Population by census is 9544). While in England the highest quantity allowed for manufacturing towns is 30 gallons per day per head.

4 Notwithstanding this enormous consumption however, the water does not reach North Tulsehorn, the last well properly supplied on my examination, being the last one on the south of the Railway, distant 800 yards from the Meyler Reservoir.

5 As the inhabitants of the houses along the first 800 yards of the line of pipes are within easy reach of the basins supplied by the masonry Conduit, thereby by the pipes is not of much benefit to them but the inhabitants of North Tulsehorn depend entirely on the pipes for their

115
water, and as they are not supplied, the line of pipes may be considered to have failed entirely.

6 It is somewhat difficult to say exactly what is the cause of this failure and it probably is due to several causes; 1st The pipes being choked by sand & rocks. 2nd Disregard of levels in laying the pipes and bad workmanship.

3rd Leakage consequent on the 2 above causes. 7 There is no doubt that the pipes are constantly being choked by rocks, and my testimony is unnecessary regarding it in the matter of levels however it may be well to explain fully.

8 The crest of the measuring weir at Meyler is at a height of 7.90 above mean sea level, and we can therefore deliver water in the Tulsehorn Reservoir at a level of 7.50 above mean sea level.

9 The highest street in North Tulsehorn is 8.00 & that for only a very short distance, while the ordinary height is 5.00 to 6.00 above mean sea level; it is possible therefore allowing 1.00 head to deliver water anywhere in North Tulsehorn.

It depends on the distance as much as on the steepness of the slope.

at 6.50 or 6 inches above the level of the struts.

10 The parapets of the wells should be sufficiently high to prevent the wells from overflowing, and the Conduit should be laid at as low a level as is consistent with its being beyond the influence of salt water and yet sufficiently weighted by the earth to enable it to resist the internal pressure.

11 The sections show that the level of the present off-take of the masonry Conduit is suitable, and were a good masonry conduit on that level led to North Tubbacoine, there would be no difficulty in supplying water and no necessity for heading up the water in the channel. It would perhaps be more economical to supply North Tubbacoine by a branch from the main Conduit at the basin near the Dispensary, connected with the wells on the present North Tubbacoine line, somewhere near the Protestant Mission church.

12 Tell however the Municipality consider

13 it necessary to re-organize the present arrangements. It is useless for me to enter into details on the subject but I think it my duty to draw your attention to the waste of water which is caused by the defective arrangements in use.

13. The greater part of the water charged for in the present Bill has however been expended in filling up the Swamp, through which for several weeks it has been running waste to the sea.

14 On previously visiting Tubbacoine I observed the loss of water and addressed the Vice President on the subject, as shown it is possible you may not have seen letter. I enclose a copy.

I have &c

(Signed) G. D. Grant
Off District Engineer

No 447

To The Vice President
Tubbacoine Municipality

For I have the honor to inform

that owing to the water at Meylur being
tacked up for the supply of North
Tuticorum not only are we prevented from
taking measurements of the water supplied
but a large proportion of water is lost
on its way from Korampallam Tank
to Meylur, and the level of water is
higher than the channel was constructed
to carry.

2 Owing to the objections raised by
the Municipality to the water supply being
measured at Korampallam Tank a measuring
weir was constructed at Meylur, and the
level is now so arranged that with water in
the Reservoir a little below the level of the
crest of the measuring weir the water could
with ease be delivered in any street in Tuticorum.

The water however has not I believe
reached North Tuticorum and as the Reservoir
at Meylur is sufficiently high, it
appears possible that there is some
defect in the distributing works, which,
tacking up the water, as is now being done
will only tend to aggravate.

1. I would therefore beg to suggest¹³
the supply of North Tuticorum be taken
through the Reservoir, and that the small
cistern and Dam lately constructed be
removed, as by their removal we are precluded
from measuring the water, the water works
and the channel bank endangered with
any good result being produced.

5 I should feel obliged by your
answering me with a reply as early as
possible.

I have &c
Ambasamudram
(Signed) J. D. Grant
8 November 1875
Off. Dist. Eng.

No 45 Municipal Commissioner's Office
Tuticorum 24 April 1876

From The Vice President
Tuticorum Municipality

To The President
Municipal Commissioner

Sincerely

With reference to your letter No 84
dated 8 January & 20 March 1876 and to
their enclosures Bills from the District Engineer
for water supplied to this Town from the

Perampallam tank, I have the honor to state that the Commissioners are unanimously of opinion that some error must have been made in the calculation of water supplies.

The Bills we have now received for water supplies for only 11 months and 10 days from the 22^d October 1875 to the 29th February 1876, amount to Rs 1341-9-8. On comparing these with those received in the year 1874 for 5 months viz from July to November when the supply of water was as abundant as during the months in which the Bills are now received, the Commissioners find that the charge amounted to only Rs 669-3-6.

The following table shows the amount of demand for each month in the two years.

1874		1875-76	
	amount		amount
July & August	Rs 0	from 22 ^d October 1875 to November 1875	646 10 2
September		December 80	288 7 1/2
October	471 6 11	January 1876	219 1
November	197 12 7	February 80	187 2
Total	669 3 6	Total	1341 9 8

4. It is obvious that the Municipality in the present crippled state of its finances cannot possibly if regard is to be had to other most necessary and pressing requirements, meet the charges for water supply at the present rate of demand. In fact at this rate the whole of its income would be swallowed up, and it might as well cease to exist. The cause of the enormous increase in the present rate of demand over that for the preceding year is stated to be that owing to the fact of the water at the Reservoir since being backed up by a small cistern and dam constructed to direct the supply to the northern part of the town. but which failed in its purpose owing to some faultiness in the levels the officers of the D P W were unable to gauge the supply at the tank discharge sluice, showing thus after deducting percentage for wastage the enormous quantity of water consumed by the inhabitants of Tuliessin, which is set forth

in the tables submitted by the District Engineer. There was great waste of water which owing to defects in the Conduit and distributing pipes, could not be utilized for drinking or domestic purposes, and which consequently passed by the surplus channel into the large swamp. But I am informed that the quantity of water in this swamp was equally great last year when the charges were only about 1/2 the present rate and manifestly we could not have consumed a quantity in excess of that which would warrant the present excessive charge as I said before. The reason given for the difference in the charges is stated to be owing to the fact that the supply had to be gauged at the tank sluice instead of at the reservoir sluice for the reasons mentioned above. But the Commissioners are of opinion that if the supply could not be gauged at the reservoir sluice then the average of last year's gauging ought to have been taken as the basis of the charges for the present year. I am desired by the Commissioners to represent these matters to you

199
in view, should you see fit, to your submitting these matters to Government for their consideration and order, & to add at the same time that if we are compelled to pay the present Bills we shall be utterly swamped in the coming year.
I append Extract from the Proceedings of the Commissioners on the subject.
I have &c
(Signed) R. Rice
Vice President.

Extract from the Proceedings of the Municipal Commissioners of Dickson at a meeting held on Saturday the 22nd January 1876.

2. Read letters from the President of the Municipal Commission and the District Engineer containing remarks on the water supply with certain suggestions for the consideration of the Commissioners & also Bills amounting to Rs 935-1-6 for water supplies from the 22nd October to 31st December 1875.

The Commissioners are of opinion

that some error must have been made in the calculation of the quantity of water supplied. On comparing the Bills for last year they find that a sum of Rs 171 only was charged for four months when the supply was as abundant as during the months for which these Bills are submitted, and they cannot understand how a sum amounting to nearly 4 times the charge per month for last year comes to be charged now. At this rate of charging the Municipal Funds would be exhausted in a very short time and the consequence would be that the supply from the Korumallam tank would have to be shut off altogether, a result which the Commissioners could not but regard as a serious misfortune.

The Commissioners are of opinion that it would be preferable to pay a fixed monthly charge of say Rs 100 (as in 1874) leaving the regulation

21 10
of the supply to the officers of the D P W and they resolve to request the Vice President to address the President to the above effect.

Regarding the supply to North Indian the Commissioners are of opinion that the present pipe service is a failure & they consider that the suggestion of the District Engineer to take a channel from the basin at the Dispensary to a Cistern opposite the Indian Protestant Church is the best and most economical one and they resolve to have an estimate framed in view to provision being made for a masonry channel in the Budget for next year.

They would at the same time ask the District Engineer to be good enough to furnish them with correct levels &c for the work.

(Signed) R. Rice
V President

No 78 District Engineer's Office
Palanicutta 15 May 1878

From The District Engineer
Tinnevely
To The Collector of
Tinnevely

With reference to your endorsement on the letter of the Vice President of the Subicorin Municipality No 15 of 24th ultimo I beg to offer the following remarks.

Enclosure 3

2 The Commissioners unanimously give it as their opinion that there must be some error in the calculations of the water supplied because though the quantity supplied was the same last year as this the Bills for this year are higher. This is scarcely a convincing argument since it might equally be used to prove last year's charges too low but in the letter of the Vice President, no other reason is given for supposing our calculations wrong.

3 In para 4 of the Vice President's

23 11
letter it is remarked that the cause of the increase of the demand is said to be that owing to the water being backed up measurements could not be taken at height. This must refer to what is said in para 1 of my letter No 447 and para 2 of my letter No 553, though my meaning has not been quite understood.

4 In remarking on the impossibility of measuring at height I did not intend it to be understood that by measuring the discharge at the Tank there would be an increased charge, as I explained that experiments had been made to ascertain the loss in the channel, the additional loss caused by the water being backed up falling on Government not on the Municipality.

5 In regard to the correctness of the measurements it is certain that we cannot in any case be absolutely accurate in calculations of water discharge, but I do not think it likely that there are

any serious inaccuracies in the Bills submitted. The only point in the calculations where there is a chance of error is in the per centage deducted for waste in the channel between Korampallam and Meyhur, for without constantly making experiments under different conditions of weather, supply &c it would be impossible to be accurate.

6 Experiments were made under what were considered average conditions and from these experiments was deduced the amount of water lost in the channel, and it is just possible that under certain conditions this might give inaccurate results. As however a measuring weir was built specially to measure the water at Meyhur in deference to the wishes of the Commissioners, and as this weir was rendered ineffective by the arrangements of the Commissioners. I do not think they can justly complain if our

25¹²
measurements are in some degree inaccurate.

7 Had we continued to measure the water at the measuring weir, and disregarded the backing up of the water, the result would have been Bills compared to which those submitted are trifling.

8 The Vice President admits the waste of water that occurred, but states that the quantity of water in the swamp was the same in 1874 as in 1875-76 of this I cannot speak with certainty, but as mentioned in para 13 of my letter No 533, the water does not stand in the swamp beyond a certain level as there is an outlet to the sea, and the loss of water would not therefore depend so much on the quantity of water actually in the swamp, as on the quantity that ran through it to the sea.

7 The Vice President he sides does not take into consideration the line of pipes to North Tulkiorin, which were not I believe in use in 1874 & to supply which, a large quantity of water must have been required in 1875-76.

10 As to the future arrangements for the supply of water to Tulkiorin. I think it would be more convenient were the regulation of the water in our hands, the Municipality giving us notice of the quantity required by them, and the only objection I see to this course is that doubts might arise as to whether the quantity supplied was correctly calculated.

11 In a few years the land under Korainpallam Tank will be cultivated and differences will undoubtedly occur when water is scarce.

12 The only satisfactory solution of the difficulty that I can suggest is that a portion of Korainpallam Tank should be

13 be handed off and used entirely as a Reservoir for the supply of Tulkiorin. No doubt this would be expensive but without such a reservoir, I do not see how Tulkiorin can be supplied in a satisfactory manner.

I have &c
(signed) J D Grant
Offs. Dist. Engineer
(True copies)

Stewart
President

Received by the
Municipality of
Tulkiorin
on 18/10/76
J D Grant
Dist. Engineer

P.W.D.

3076

1876

N. 221 Sincerely Hanganeri 26 May 1876
From, A. J. Stuart Esq
President Municipal Commission
To The Honorable W. H. Huddleston
Chief Secretary to Government
Cotacumund
Sir

I have the honor to submit for
the order of Government the enclosed
correspondence between the Vice President
of the Tuticorin Municipality, the District
Engineer & myself with reference to the
payment of bills amounting to Rs 1341.7-6
for water supplied to the town of Tuticorin
for domestic purposes.

2 Government in their Order No 3076 dated
29 October 1872 fixed Rupee 1 per 1000 cubic yards
to be measured at Kreythur as the charge
to be made for this water

3 The facts of the present case without
the reasons for them appear to be that
the water was measured at Korampalem
tank and not at Kreythur, and that on the

Enclosure in a letter

from the President

Municipal Commission

Sincerely dated 26 May

May 1876 N. 221

Copies of correspondence

between the Vice President

of the Tuticorin Municipality

the District Engineer

and the President of the

to in the above letter

& N. 221 126 7/1876

other hand there was a considerable waste of water through the Tuticorin swamps into the sea.

The first of these facts is consistent with the supposition that the wastage before the water reached Neylur near Tuticorin may have been much greater than 60 per cent at which rate it has been calculated by the Engineer.

The second makes it matter of surprise that there should be some increase in the water bills this year, though it remains doubtful whether this will account for so large an increase as that shown in the bills.

As it happens the water in the Koram-palem tank is at present of no use to the Government for cultivation or other purposes, so that there was no loss occasioned by the waste of water which took place in Tuticorin.

I beg therefore to suggest that this being the case the Government may be pleased to remit the payment of the excess of this

A2669-3.6

bill of this year over that paid last year^{3/2} as a special indulgence in consideration of the novelty of the arrangements and of the fact that the Tuticorin people were not aware how much water was running to waste until they got the bill. They will doubtless be more careful next year.

Measurement at Neylur should I think in future be insisted on as a condition of the charge of Rupee 1 per 1000 cubic yards. I cannot but think the District Engineer will find some method of gauging the quantity of water delivered there, and even if it be necessary to construct some small new work for the purpose, it is quite worth-while as in no other manner can the uncertain loss by leakage be excluded from the bill.

I should like the bill next year with due economy on the part of the Municipality and measurement by the P.W.D. quite free from objection still be very heavy I will again submit the matter for the orders

of Government as the Municipality cannot afford to take the water if the bill is as heavy as it is this year.

With a view to the permanent storage of a supply of water for Futur in the District Engineer proposes to build off a portion of the Korampalem tank I beg to recommend this, but to suggest that, the cultivation under this tank being still trifling the matter be deferred until another years experience has been obtained as to the quantity which it is necessary to provide storage for and as the proper site for the tank. I think that for this purpose it will be necessary to judge the water at the Korampalem tank sluice as well as at Maylar in the coming season as in order to supply a given quantity at Maylar a much larger quantity must be stored at Korampalem owing to the leakage in the channel between Korampalem and Maylar which is carried on a rather high level

through sandy soil.

I have the honor to be

Yours Most Obedt Servt

President

11/19/20

and wood

8.16/may/74 No. 1590
 29 Oct/74 - 3076
 14 May/76 - 646 Rev Dept.
 29 Oct/74 - 3076 orig

P.W.D.

30.12.76

From
 The Financial Department

Dated 19th June 1876.

-82919-

Encls: One V

Note by the Chief Engineer for Irrigation

In G.O. No. 1592 of the 15th June 1874, the rate fixed for the water supply of Tuticorin was 1 Rupee for each 1000 cubic yards delivered into the town channel from the Korumpollam Tank, and it was directed that no charge should be made for the water supplied up to the 31st March 1874.

In G.O. No. 3076 of the 29th October 1874 on a representation by the President of the Municipal Comm. the President of the Municipal Comm. intimated, that the loss of water between the Korumpollam Tank and Meyhur, at which latter place the municipal water works commence, was 60 per cent, that a further loss occurred from the imperfection of the municipal distribution works, and that consequently the inhabitants would really have to pay about

Transferred to the Public Works Department.

As recommended.

19 June 1876

L. Rudraiah

Chief Secretary

5 June/76

with 1 Encl.

No. 607

Enclosure One

Submitting for the

order of Government. cert.

correspondence between the

Vice President of the District

Municipality, the District Engineer

and the President of the Municipal Comm.

1876. The Municipal Comm. has been directed to pay about

Ministerial Committee

to Government

to Government

12/12/76 } May 1876
 29/12/76 }
 22/1/76 }
 22/1/76 }

Submitting for the

order of Government. cert.

correspondence between the

Vice President of the District

Municipality, the District Engineer

and the President of the Municipal Comm.

4 Rupees for each 1,000 cubic yards of water delivered from the Tank; the measurement of the water was directed to be made at Meylur and the charge was to be 1 Rupee for every 1,000 cubic yards of water there delivered.

3. A measuring weir was accordingly constructed at Meylur a short distance above the Municipal reservoir, but the Municipal arrangements, especially for the supply of north Tuticorin, being very imperfect the water was raised at the distribution reservoir to an extent which made measurement at the weir impracticable; and the only alternative was to measure at the Tank, since and deduct the percentage of loss as previously determined by experiment.

4. It appears further that the quantity of water admitted to the Town supply channel has been

regulated by the Overseer under orders from the Vice President; whose instructions he had been directed to attend to.

5. The result of maintaining water at a high level at Meylur together with imperfect distribution works has been great waste some through the Town distributaries, other into the drain and then into the sea, and the Commissioners finding the water bills heavy first doubt the correctness of the quantities charged for, and the President further pleads the inability of the Municipality to pay the charge.

6. There appears no good ground for supposing that the quantities delivered at Meylur have been incorrectly estimated. The causes of waste after reaching Meylur have been indicated, and so long as they remain unremoved the Municipality, if it is to pay for the water supplied,

No. 137 11

20 The Chief Justice for Ind.
The Secretary of State. Ohio.

Dated 3rd August 1876

Encl. 2

154-12

Tuticorin Water Supply -
Tinnevely District - Note
on the letter of the Preside. Council
Comp. Tinnevely regarding
the _____

№ 607a

Recd - 21.8.76

CU-528.76

L. Shurtliff

P. W. Steph

Note by the Chief Engineer for Irrigation
No. H. d. 3^d August 1876.

Speculated for orders.

Wendell L. Colburn

It is clear from these papers
that the Town Municipal Print Secretary to Govt P.W.D.
has made a map of its
distribution of water from
the Tirayuntam Aicut via
the Korumpallam Tank

The Korumpallum Tank
and that if they are to pay at the rate originally
charged - 1 M. per 1000 cubic yards. They must owing
to the enormous wastage that takes place & makes
the price to 4 M. per 1000 cubic yards - give up altogether
taking this water to the detriment of public health
& comfort.

2 comforts.
I would direct a project to be prepared for the efficient
distribution of the water to the Town with plans & estimates
and I would assist the Municipality by doing to carry
out this project. In the mean time I would leave
the question of payment for the water in abeyance
if this is considered too liberal charge ~~all of it~~
than what they paid originally about 140 per million.

Sept 18
[Faint handwritten text, mostly illegible due to fading and bleed-through from the reverse side. Some words like "Sept 18" and "18" are visible.]

Handwritten text, possibly a signature or a note, located in the upper right quadrant of the page.

Hon. Secy. of State
 Hon. Secy. of War
 Hon. Secy. of Navy

unsubstantiated

That - 4th, manuscript
 report - that the
 government was
 not in a position to
 carry out the plan
 of the canal - that

that the canal
 is water brought from the
 lower - that the
 canal was not
 built - that the
 canal cost \$250,000

Memo.

The original papers asked for by the Honble Sir H. Robinson have been put in file.

Meylan where the Interoceanic Town distribution works commence is a short distance S. W. of the town. The channels supplying the different parts of the Town take off close by. It is not known what the length of these channels is as they are Municipal works and no information regarding them, except that indicated in the recent correspondence, has been received.

The channel from the Karmullum Tank to Meylan some 5 or 6 miles in length was constructed by Government and was provided for in the Strivingmum ancient project estimates.

May 19/8

No 2267 *Public Works Department.* 47 1/2

PROCEEDINGS of the MADRAS GOVERNMENT.

UNDER date the 28 Aug 76.

READ the following:

Indorsement in the *Public Works Dept.*
State by the Ch. Insp. *W. H. D. 3rd Aug 76*
for Durga

B-27

MM

23/8

His Grace the
Governor in Council
is prepared to assist
the Municipality of
Tuticorin by accept-
ing a payment of
Rupees 140 a month
for a period of 2 years
to enable them without
excessive taxation to
obtain a supply of good
water while the Town
distribution channels,
pipes to are being placed
in a satisfactory and
efficient state. At the end of 2
years the supply delivered at Tuticorin will
be paid for at 1 Rupee per 1000 cubic yards

2. A project should be at once prepared by the Municipality for the reformation of the Town distributaries from Meylur, and the District Engineer will afford the Municipality his advice and assistance, the subordinate agency required to take levels and prepare the plans and estimates being provided by the Municipality.

3. The District Engineer will also carefully consider by what means the great wastage from the channel between the Korumpallam Tank and Meylur can be materially reduced if not avoided, and as soon as the arrange-

ment shall have been decided
the project will be prepared
and the District Engineer will
afford the Municipality his
advice and assistance, the
subordinate agency required
to take levels and prepare
the plans and estimates being
provided by the Municipality.

49 18
-ments for Municipal
distribution below Meylur
have been decided upon,
he should determine by
what means an accurate
measurement of the
water delivered at
Meylur may be secured.
These will depend upon
the water level found
to be necessary at
Meylur for the effective
supply of the Town.

It is observed.
4. That no payment appears
to have been made by
the Municipality for
the water supply hitherto
obtained, and the
amount due at Rupees
40 a month from the
1st April 1874 should
be adjusted at once.
5. Government will
be prepared to assist

207. 19/8

the Municipality by a
loan in carrying out
the schemes of town
water distribution which
may be decided upon.

19/8
The Municipality
is not in a position
to carry out the
schemes of town
water distribution
which may be
decided upon
by the Municipality
as it is not in a
position to carry
out the schemes
of town water
distribution which
may be decided
upon by the
Municipality.

turned out, Under
instructions from
India we are precluded
for the present from
making these grants
these loans.

They might be allowed
to raise the money locally

MS

19/8

14607-608

S. E. S. S. S. S. S.
C. E. S. S. S. S. S.
S. E. S. S. S. S. S.
S. E. S. S. S. S. S.

19/9/71

207.629.800

Chas. L. ...

Govt. of 1876 Madrid
PUBLIC WORKS.

to H. G. Linnecor

U. S. ... No. 22

No. 607-608

has been supplied to the Town of
Merion by the Municipality
being orders on paper
to obtain payment

Chas. L. ...