[L. & M.
5,000—5-4-99.]

Local & Munl. (1898) Department.

MISCELLANEOUS.

G.O., No. 1632 M

DATED 19. 9. 98

[Despatch Abstract.]

Water-Supply

Forwarding to the Sanitary Board for remarks papers relating to the ———— of Tiruvannamalai Municipality.

BACK PAPERS.

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

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
Ecw	3510	M/98					

Local & Munl. (189) Department.

CURRENT No. ~~2043+~~2654 M

C nos: 2043+2654 M

From
The Sanitary Engineer to Govern
Fort St. George

Mis
Order No 1632 Muni d/19-9-98

The papers read above will be forwarded to the Sanitary Board for remarks.

V.R.
7/9/98

15-9-98

No. 1250

Dated 10th Aug: 1898
Received 11th Aug: 1898
Registered
Enclosures 6 (Six)
Spare copies.

SUBJECT.

Submitting report from the Assistant Sanitary Engineer to Government on the ~~matter~~ water supply of ~~the~~ Tiruvannamalai ~~Water Supply~~.

To
The Sanitary Board
with plans & estimate/statement
and papers read
desp 20/9/98

[illegible]/12/99.

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

902 No. 1250 of 1898

Enc- No 1-

18/9/8

Report on the Water-Supply of the town of Tiruvannamalai.

Reference- Endorsement No.751 dated 1st July 1898 from the Secretary to Government, Local and Municipal Department.

Also, Sanitary Board's Proceedings No.401/S dated 1st July 1898.

A

(to be printed as Enclosure to the San. Engr's letter)

The undersigned stayed at Tiruvannamalai from the 11th. to 18th. July, and inspected, in company with Mr.V.Venugopaul Chetty, Sub-Collector and Chairman of the Municipal Council, all the available sources of supply. The scheme, which is the subject of the first of the above references, is one which may be described as the Cheyar Scheme.

The Cheyar Scheme.

2. Sanitary Board's opinion- With regard to this scheme the Sanitary Board, in its Proceedings No.401/S dated 18th.July 1898, has expressed the opinion that the scheme should be rejected on the score of cost. It will, however, be well to state here, for record, the approximate amount the scheme would cost and to point out its defects.

3. Outlines of Scheme - The scheme in brief is to cut a channel from the Kotalam Anicut on the Cheyar River to the Samoodrum tank, a distance of about 14 miles in a bee line, and to distribute the water from the Samoodrum tank by pipes into the town, the distance from the tank to the centre of the town being about 2 miles.

4. Supply Channel- There is no dry weather flow in the Cheyar at the proposed point of offtake. Freshes come down the river during the rains, and it dries up a few days after the cessation of the rains- But during the rains a good deal of water goes over the crest of the anicut even in years of scanty rainfall. It is proposed to convey this surplus water by

2/xi/99.

by a channel to the Samoodrum tank. A fall of about 20 ft per mile is available for the channel, and there is no doubt that sufficient water for the town can be stored.

5. Best method of utilising the tank- The Samoodrum tank is an irrigation tank holding, at a rough calculation, about 4 million cubic yards of water, with a maximum depth of 12 ft. The quantity of water required for the supply of the town, reckoned at 15 gallons per head per diem for a population of 20,000 (the present population is 13,650) amounts to less than .65 million C.yds. This extra quantity of .65 million C.yds can be secured by raising the water level in the tank by about a foot. But in addition to this the tank will have to be raised at least another 5 or 6 ft (which represents about 5 million cubic yards of water) to provide for loss by evaporation and absorption throughout the year, as the tank must hold water all the year round if it is to supply the town. Thus about 5.65 million C.yds of water must be stored to secure for the town an actual supply of .65 million C.yds - a most wasteful course, but one that is unavoidable in a combined irrigation & town water-supply tank, when the quantity required for the town bears a small proportion to the quantity used for irrigation. The proper & more economical plan, under these circumstances, is to cut off a portion of the tank, raise it, improve it & reserve it for the town water-supply, and raise the remaining portion of the tank to such height as would compensate for the portion cut off.

6. Necessity for pumping- The Councillors, at least all whom the undersigned met at Tiruvannamalai, were under the impression that the Samoodrum tank is sufficiently high to supply the town by gravitation. This is not so. Levels have now been taken & the bed of the tank is 10 ft. lower than the lowest part of the town. The difference of levels between the highest & the lowest points of the town is 65 ft. It may not be necessary to convey water to the very highest street of the town, but all the Councillors are agreed that water should be delivered at least up to the Eastern & Western gates of the great temple. Even these points are 60 ft higher than the bed of the Samoodrum tank. Allowing for fluctuations in Service Reservoir, friction in pipes and

10 ft of pressure at the highest point of delivery, the water will have to be pumped to a height of 80 ft.

7. Initial cost of Scheme- Approximately the cost of the scheme will be,

	Rs
Head Sluice at the Cheyar anicut ----	5,000
14 miles of channel with all masonry works-------	112,000
Dividing, raising & improving Samoodrum tank & providing a new calingula -------	70,000
Outlet from the tank including tower, stand pipes, valves &c-------	20,000
Engine House, drivers' quarters, store shed, compensation for land &c-----	14,000
Engines, pumps & boilers, 2 of 6 P.H.P. each-	15,000
Service Reservoir to hold 300,000 gallons --------------	15,000
Pumping main 8", 3,500 ft. ----	8,000
Distribution pipes 10" to 3", 25000 ft.-----------	50,000
	309,000
Establishment & contingencies at 15%--	47,000
Total--	356,000

8. Annual cost- On the supposition that Government will contribute half the cost, the annual cost to the Municipality will be as follows:-

Interest & sinking fund on Rs 178,000 ---	10,680
Cost of pumping ---------	5,200
Other charges ------ ----	2,720
	18,600

The Hill Reservoir Scheme.

9. In its Proceedings No.401/S dated 18th. July 1898, the Sanitary Board desires an opinion on a scheme for the supply of

[redacted]

of the town from a reservoir to be constructed on the hill side near Jadayu Tirtam . The communication was received in this office after the inspection of Tiruvannamalai by the undersigned ,but there is sufficient information to pronounce an opinion.The scheme is impracticable . In a modified form it may afford a partial supply ,but at a cost that will be out of proportion to the small benefit that the scheme would secure.

10. The chief objection ,and one that is fatal to the scheme , is that the site indicated above is not suitable for the formation of a reservoir large enough for the requirements of the town. It will be noticed that the town nestles close to the hill,and where the habitations terminate the hill rises abruptly with a slope of as much as 1 in 3 in some places. There is no place between the town & the hill where a reservoir could be formed .. If one must be formed it must be on the hill slope itself in the small valley indicated by the stream passing by the Jadayu Tirtam. The sides of the valley are very steep,and at a rough calculation a dam across this valley 100 ft high would not impound more than 12 million cubic feet,whereas the quantity required for the supply of the town is .65 million cubic yards or 18 million cubic feet (vide para 5 ante) exclusive of the loss by evaporation &c ,which may amount to as much again- It would,moreover ,be extremely dangerous to have a tank of this size overhanging the town.

Cut See Conclusion of para 11. L.G.

11. The modification of this scheme alluded to in the previous paragraph is to collect water from the hill streams by an intercepting channel and to fill Jadayu Tirtam and the adjoining Tirtams.The combined capacity of all these Tirtams would , however,not amount to a million cubic feet.The scheme must therefore be rejected ,except as a purely temporary arrangement for the partial supply of the town .

The Samoodrum valley scheme.

12. After a careful examination of the country around Tiruvannamalai ,within a reasonable distance of it ,the undersigned has arrived at the opinion that the underground water in the valley of the Samoodrum tank will afford a supply which has the merits of being moderate in cost & ample for the requirements of the town.

13

[redacted]

13. The possibility of being able to secure a supply from a subterranean source was suggested by the great extent of well irrigation around Tiruvannamalai.Not only are dry lands irrigated by wells ,but even on wet lands a second crop is raised by well water when the tank supplies are exhausted. There are two large and well defined valleys ,one to the east and the other to the west of the Tiruvannamalai hill .The one to the west,designated in this report as the Samoodrum valley, is more fertile and bears signs of more activity in well irrigation.The water level in the wells along the lowest line of the valley is only from 6 to 8 ft. below the surface.

14. Quantity of water available- The valley above the tank comprises an area of about 24 sq. miles (Tracing No.1)- Fanning says that in favorable soil as much as 50 per cent of the rain-fall percolates into the ground.Immediately below the top mould the soil consists of a layer, varying in thickness from a few feet to as much as 15 ft,of a light yellowish earth mixed with lime kunker or nodules . It will be quite safe to assume that about 25 % of the rainfall would be absorbed by the ground. Appendix I gives the yearly rainfall at Tiruvannamalai for the past 20 years . The lowest recorded fall within that period was in 1882 when the amount registered was 17.75 inches. It may be assumed that of this fall about 4 inches was absorbed by the ground.On this supposition the quantity of water absorbed by the whole valley of 24 square miles was some 216 million cubic feet.The quantity of water required for the consumption of the town is 18 million cubic feet.Thus even in a year of minimum rain-fall the quantity of water absorbed and retained by the ground was 12 times as much as the quantity required for the town.

15.- Experiments were undertaken with the view of ascertaining the nature and strength of the springs in the existing wells in the valley.The well selected for experimenting is shewn on tracing No.2.It is situated in field No.17 in Kavandampudi village and belongs to one Vencataramana Naicken. Particulars of the experiment will be found in Appendix No.II It was found impossible to lower the water in the well more

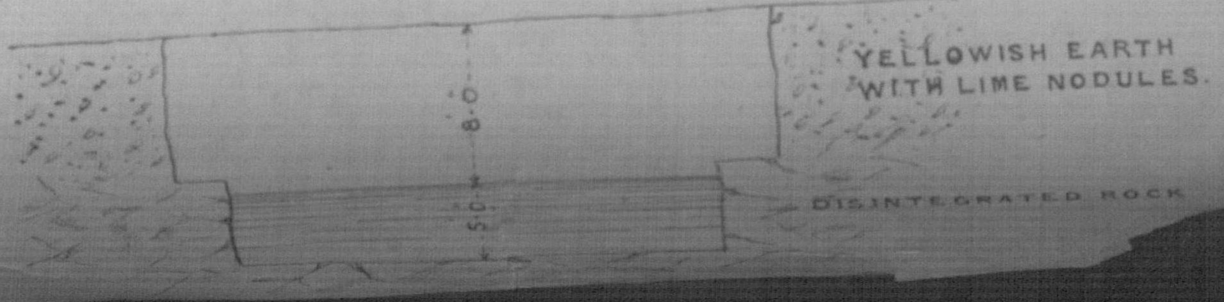
than

than 4 feet,and with this head the yield was 189 gallons per minute.The quantity required for the supply of the town at 15 gallons per head per diem for a population of 20,000 is 210 gallons per minute.The result of the experiment is very encouraging. The well id very much silted up,and it is much shallower than what a gallery in a water supply scheme would be.The present year is condidered an exceptionally dry one, there having been no rain since February last.With a deeper and larger well there is little doubt,a sufficient supply for the town could be obtained.

16.- Quality of water. The water of Vencataramana Naicken's well hasbeen analysed and pronounced to be "usable",(vide Appendix No. III).It is as good a water as can be desired for a town water supply except in one particular,namely,its hardness.The hardness is natural to all waters derived from a lime formation,and is not injurious to health when it does not exceed 20°. In England many of the water supplies are derived from wells in the chalk the water of which exceeds 20° in hardness,and there are many towns even at the present date where water with that amount of hardness is used without any treatment whatever.

17. Careful enquiries were made about the health of the villagers in the valley,who all drink well water,and no sickness whatever is attributed to its use.This after all is the surest and most practical test of the wholesomeness of a water.

18. It must also be remembered that the sample analysed was drawn from a well that had not been cleared for years & had silted up two or three ft. with earth of a calcarious nature slipping from the sides of the well. The section of the well shewn in sketch below indicates that,if the well were cleared & deepened and a steining provided for the first portion of the well that passes through the calcarious stratum ,a softer water would be obtained-



19. Outlines of scheme- It is proposed to enlarge Vencataramana Naicken's well in a suitable manner ,to raise the water by pumps & to deliver it into a service reservoir on the side of the Tiruvannamalai from which water would be distributed into the townby gravitation .

20. Population provided for- The population of Tiruvannamalai is 13,650. This includes many distant villages which cannot be conveniently included in the scheme. However, in view of the large concourse of people visiting the place during the great festival,it is considered that a population no less than 20,000 should be provided for at 15 gallons per head per diem.

21. Collecting works. It is proposed that Vencataramana Naicken's well should form the nucleus of the gallery in the scheme . The question of the most suitable method of enlarging the well is one for consideration when the scheme is worked out in details .Judging from the nature of the country around,which is composed of high lands with surrounding hills within a moderate distance,it seems possible that there are deep-seated artesian[x] springs. Whatever be the design of the gallery that would be finally adopted,it is advisable to include in it a bore hole about 50 or 100 feet deep.

22. Engines & Pumps- The summer water level in Vencataramana Naicken's well is 4 ft higher than the bed of the Samoodrum tank.The lift will be 85 ft .In calculating the Engine & Pump power it is supposed that there would be uniform pumping night & day ,as the service reservoir provides for any fluctuations in the demand . Night pumping will however not be necessary for very many years except during the festival times. Two engines are provided each of 6 P.H.P , capable of pumping 300,000 gallons per day . One set of engine & boiler will always be in reserve.

---

[x] Note -The word "artesian'' is not used here in the sense of " overflowing'' ,but in the true sence of the word meaning a spring with its sourcein a higher altitude.

[redacted]

23. Pumping Main- As night & day pumping is contemplated the main will have to convey only the average supply of 210 gallons per minute. An 8" pipe with an hydraulic fall of 2 in 1000 will deliver the required quantity. The length of the Pumping main will be about 10,000 ft.

24. Service Reservoir. The service reservoir will be on the side of the Tiruvannamalai opposite the cattle market. It would be possible to place the reservoir much nearer the town with a saving in cost . But it is very essential that the water supply should benefit the cattle market(about $\frac{3}{4}$ mile from the town) which has the reputation of being one of the largest in this presidency, and brings in a large revenue to the Municipality.

25. Distribution system- The Main from the Service Reservoir will be 10" in diameter and there will be altogether about 25,000 ft of piping varying from 10" to 3" with the necessary fountains, valves &c-

26. Initial cost - The initial cost of the scheme will be approximately as below-

Collecting works--------	Rs 15,000
Compensation for land----------	3,000
Engine House ,Drivers' Quarters & Store shed &c ---------	14,000
Engines & Boilers , 2 of 6 P.H.P-each---	15,000
Pumping Main 8" , 10,000 ft------	22,500
Service Reservoir to hold 300,000 gallons----------------	15,000
Distribution pipes &c 10" to 3" , 25,000 feet---------------	50,000
	1,34,500
Establishment & contingencies-------	20,500
	1,55,000

27- Annual cost-

Interest & sinking fund on a moiety of the cost, i.e , 77,500---------	Rs 4,650
Pumping charges -------	5,200
Other charges----------	1,750
	Rs 11,600

[redacted]

28- Cost of preparation of the scheme- The cost of taking the survey & levels necessary for the preparation of the scheme will be about Rs 400- If the Municipality sanctions this amount the work can be undertaken at once.

29- It is not necessary to dwell here at any length on the need for an improved water supply to the town- Tiruvannamalai is situated at the foot of an isolated hill on the dividing line between the water-sheds of the Ponniar & the Cheyar. As natural to a place so situated there is a great scarcity of drinking water during the hot weather. The town is now passing through an abnormally dry season, there having been no rain of any note up to the date of inspection since February last. The Kalyani well on the north of the town & some wells in the bed of the Ayenkolam on the south constitute the only sources of drinking water at present. People remote from the well have to walk more than a mile to get to them & the water is some 50 ft. below the surface . The labor & trouble entailed in getting drinking water is great, while the supply itself is most inadequate. The necessity for taking steps for the amelioration of the present condition of things has been fully recognised by the Sanitary Board. In its Proceedings No.401/S dated 1st.July 1898, the Board says that" Looking to the importance of the local festival & the amount of water-borne disease to which it gives rise, the Sanitary Board is of opinion that an effort should be made to discover a practical scheme for a good & sufficient water supply''. The difficulty that thwarts any project for a water supply for Tiruvannamalai is a financial one. Even the Samoodrum valley scheme, which is the cheapest scheme that can be recommended with any assurance of success ,would apparently be beyond the means of the Municipality- Fortunately the Municipal Councillors are hopeful of raising a substantial fund by public subscription from the residents and outsiders who take an interest in the town on account of its religious sanctity. If the initial cost of the scheme could be met entirely from Government contribution and public subscriptions, the

the Municipality can well afford to pay the pumping and maintenance charges.

Assistant Sanitary Engineer to Govt.

Office of Sanitary Engineer to Govt }
WBM Fort St.George ,8th.August 1898.}

1/2654 M of 98.

14/5-C.h.e.541 of 98

6/3010 M of 98

Statement Shewing the annual rainfall at Tiruvannamalai from 1878 to 1897.

Year	Rainfall in inches
1878	34.4
1879	27.55
1880	38.25
1881	28.075
1882	17.75
1883	33.925
1884	56.975
1885	28.2
1886	21.875
1887	39.3
1888	39.35
1889	41.175
1890	24.925
1891	30.91
1892	29.09
1893	42.05
1894	37.98
1895	40.11
1896	21.75
1897	36.77

Assistant Sany Engineer

[redacted]

2/2654 M of 98.

15/5-T-No. 541 of 98

5/3510/M/98.

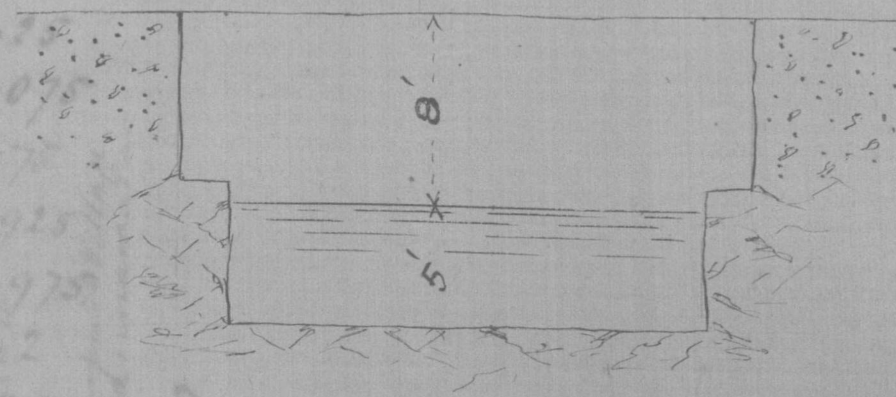
[redacted]

13

Appendix No. II.

Particulars of a test of the yield from Vencataramana Naicken's well.

The well measures 30' x 20' at water level. In section it is as shewn below-



Baling was commenced at 7-55 A.M. with 4 picottahs and 1 Kavalai, and the results are tabulated below:-

Depth below normal water level	Time occupied in baling	Quantity baled out	Quantity represented by fall in well	Inflow into well	Inflow per minute
Feet	Minutes	Gallons	Gallons	Gallons	Gallons
1	17	5355	3750	1605	94
2	18	5670	3750	1920	106
3	24	7560	3750	3810	158

After the third foot the Kavalai & one of the picottahs failed. The three remaining picottahs, however, managed to lower the water 4 ft and there it remained stationary though baling was kept up until 11.30 A.M - Three picottahs bale 189 gallons per minute, and that was the yield from the well with a head of 4 ft.

Asst. Sanitary Engineer to Govt.

3
2654 No of 98

16
J.C. No 547 of 98

4
3810/M/98

14

Appendix to III

		Water from Vencataramana Naicken's well in field no 17 Kavandampudi Village Tiruvannamalai Tq:	
Total Solids	Grms per litre	0. 440	
Volatile Solids	do do	0. 050	
Chlorine	do do	0. 018	
tal hardness	Clark's Scale	21°.000	
manent hardness	do do	0°. 700	
ree Ammonia	Mlgrms per litre	0 . 032	
Albumenoid ammonia	do do	0 . 032	
Nitric acid	do do (as Ammonia)	2 . 100	
Apparent quality of the water as inferred from the results obtained on examination		Usable	

Dated 27th July 1898.

Sd/ K. C. Sanjana
Surgeon Major, I.M.S.
Ag: Chemical Examiner

(True copy)

Asst: Sanitary Engineer to Govt

2R2

4
2654 M of 98

17
SC No 54 of 98

3
3570/M 98

S. E./6. 1,000—6-12-97.

15

No. 1250

Government of Madras.

Office of Sanitary Engineer,

Fort St. George, 10 August 1898.

LOCAL & MUNICIPAL DEPT.
CURRENT No. 2654 M

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,
Sanitary Engineer to Government,

To

The Secretary to Government,
Local & Municipal Department.

Sir,

In response to reference No.751 dated 1st. July 1898, I have the honor to forward the accompanying report from the Assistant Sanitary Engineer to Government on the matter of the Tiruvannamalai water supply.

2. In regard to the scheme which the Assistant Sanitary Engineer proposes, Viz, pumping from the Samoodram Valley, there are one or two points which I would notice. The estimation of the amount of water to be obtained in the Samoodram Valley is based on the idea that a certain proportion (25 %) of all the water falling in the Valley will be absorbed by the ground & will be obtainable-but this certainly could not be expected from the one well or gallery as proposed and while 25 % of the rainfall falling from time to time may be absorbed or even more than that, it cannot be utilized as it falls-If it was necessary to determine the possible supply from the area the minimum fall and varying percolation month by month would require to be taken into account.

3. The Assistant Sanitary Engineer however, has made an experiment in regard to one well which seems to yield a satisfactory amount and this is a much more certain basis for cal[illegible] than any based on possible absorption & storage

storage could be-Further extended experiments would of course be required before any definite conclusion could be reached, but everything in regard to this well and valley seem to point to a large supply of water.

4. The water is a very hard water though said to be usable.

5. The cost of the suggested scheme is however high Rs 11,600/- per annum, even if Government makes a grant of half the initial cost and it is feared that this cannot be expected for very many years-there are indeed many other towns which should receive supplies before Tiruvannamalai can be assisted.

6. Even with a Government contribution, the annual cost Rs 11,600/- is more than 50 % of the Municipal income and it may therefore be assumed that the Municipality could not afford to carry out such a scheme unless the private contributions were exceedingly large.

7. I think therefore, that the Hill Reservoir scheme referred to in para 9 of the Assistant Sanitary Engineer's report must be further investigated, with the view of obtaining a moderate or partial supply of water; even 1 million gallons collected in the Tirtams would be a reserve in time of great need or at festival times and addtional reservoirs might be formed if it were found that more water could be collected.

8. If Government think that the Samoodram scheme is beyond the possibility of execution by the Municipality, I consider the next step to take, should be the contouring & survey of Tiruvannamalai itself with a view to determining 1stly, what amount of water can be collected & stored and secondly, whether it would be advisable to construct works for that purpose-In this view the Municipality might be requested to make available some Rs 400/- or Rs 500/- for the purpose of the survey.

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

J Jones

Sanitary Engi[illegible]at.

18
S.C. No 541 of 98

2
3510/m/9

lcb/m

No 2239
S

Note by the Sanitary Commissioner for Madras dated 5-10-1898

Reference. Water supply of Tiruvannamalai.

Vide Resolution of the Sanitary Bd. dated 18th July 1898. Flag G.

In connection with the statement that the Kalyani well at Tiruvannamalai will not supply sufficient water for the town, I would state that it was not suggested this would suffice for the purpose. The proposal to use a pump there was for supply of a small area: but it was held that the running - not of a mere adit- but of an infiltration gallery parallel with the hill ~~slanting~~ starting from the well would probably suffice. I advise the suggestion be considered in this light.

WG King
Lieut Colonel,
Sanitary Commissioner for Madras.

TO
The Secretary to the Sanitary
Board, Madras.

with papers returned.

2716

18

Sanitary Current No. 568
Recd: 7. 10-98
With file of papers.

Tiruvannamalai water
supply scheme

No. 1250 of 1898

Local & Munl. (1898/9) Department.

CURRENT No. 2043

SANITARY ENGINEER
Reg. No. 1385
2 JUL. 98
TO THE GOVERNMENT OF MADRAS.

No. 751 dy 1-7-98

~~**Order**~~

Referred to the Sanitary Engineer for early remarks.

By order

A. Edgington

V.R. 27/6/98 Ag Assistant Secretary

From The Ag Collector of South Arcot

No. 417/Genl of 98

15 Jul 98

Dated 13th June 1898

Received

Registered

Enclosures (12) & one sketch.

Spare copies

SUBJECT.

Submitting to Government ~~for orders~~ for orders a Tiruvannamalai Municipal Council Chairman's letter 18.-6-98 forwarding the file of papers relating to the Cheyyar water scheme in that Municipality & requesting that the Sanitary Engineer may be addressed on the matter

To
The Sanitary Engineer
(with plan to be returned)

27/6

27/6

BACK PAPERS.

G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.

7.11.97

20

Tiruvannamalai
17th October 1897

From
S. Appasawmy Naidoo
and
R. Arunaghiri Moodaliar
Municipal Councillors
Tiruvannamalai

To
Muhammad Raja Khan Esqr.
Ex. Officio Chairman.
Municipal Council
Tiruvannamalai

Respected Sir,

Within the short time it has been in existence, the Tiruvannamalai Municipality has conferred many comforts upon the people. But, unfortunately a good supply of water is still a desideratum. People and cattle suffer greatly from want of a sufficient supply throughout the year And you will

BACK PAPERS.

7.4.97

will remember that in November last, during the Karthigai Deepam festival in the very middle of the rainy season, Samoodram Tank and wells thereabout being dry, a new well had to be sunk in the bed of the Tank, at Municipal expense to provide water for the cattle at the fair. So, it goes without saying that something should be done, and soon to meet this difficulty, we beg therefore to make the following suggestion and hope it will receive your best attention.

Sixteen miles from Tiruvannamalai, there is a river named Seyyar running from West to north, And an anient across it turns its waters into the tanks of Erayoor and Mudiyanoor Villages. Now, it is possible to connect the Samoodram Tank, lying about a mile from Tiruvannamalai in a village, where most local people own lands, with the river at the anient, or the Erayoor Tank by a channel and the Samoodram Tank thus replenished, the Calingulah at the Southern end of it may

the

7.1497.

21

maybe raised and water drawn from the tank into one of the large local tanks say Thamaraikulam (by means of a channel beginning at the northern end of the Samoodram tank) and thus within easy reach of the people. The easier and more economical plan will be of course to connect the Erayoor tank and the Odai, which now sends the surplus water of the Kolappadi tank into the Samoodram tank — a distance of about 6 miles. This will enable us to take advantage of the already existing channel from the Erayoor anicut to Erayoor tank and the natural communication between the Kolappadi tank and the Samoodram tank. It may be useful in this connection to remember that in 1868, Mr Reade, the then collector had this very project before him and he actually had the estimate made out for the channel construction. We may also mention that the Seyyar has many streams running into it from Javadhi Hills and so it may be relied on for an abundant supply of water throughout the

								Rise	Fall			
38	282	150	4.40		3.82	150	89	0.58		70.88	300	Do Do Do
39	271	300	6.00									Do Do Do
				7.33					1.33	79.55	300	Do Bed of Tank
					10.56	300	115		3.23	66.32	300	Clear Tank Bund
40	287	300	2.10		8.35	300	121		6.25	60.07	600	up to Nuller Field
41	294	300	4.21		5.40	300	121		1.19	58.88	600	Do Do
42	300	150	4.59		4.46	150	130	0.13		59.01	300	Earth Soil Do
43	305	150	3.98		5.60	150	118		1.62	57.39	300	up to Hamkurki supply channel
44	305	200	5.55		1.65	200	117	3.90		61.29	400	Gravel Soil up to High Ground
45	307	150	5.93		4.04	150	114	1.89		63.18	300	Do Do
46	307	150	5.30		4.43	150	114	0.87		64.05	300	Do North of Covel
47	309	150	3.45		6.40	150	120		2.95	61.10	300	Do Do Do
48	301	150	2.02		7.20	150	122		5.18	55.92	300	up to Hamkurki & bed of Small tank
49	300	300	1.85		7.30	300	120		5.45	50.47	600	In side of Tank
50	308	150	4.30		4.16	150	117	0.14		50.61	300	Do Do
57	300	100	6.13		0.25	100	150	5.88		56.49	300	up to crest of Small tank Coalinguilah 4 yards length
52	44	150	2.56		5.84	150	112		3.28	53.21	300	Gravel and Stone Soil
53	32	150	4.00		5.32	150	112		1.32	51.89	300	Do Do
54	11	150	4.20		4.90	150	147		0.70	51.19	300	Do Do
55	334	150	2.68		5.19	150	140		2.51	48.38	300	Do Do
56	333	150	5.10		2.58	150	112	2.52		50.90	300	Do Do
57	312	150	5.73		4.33	150	117	1.40		52.50	300	Do Do
58	294	150	3.90		5.50	150	109		1.60	50.70	300	Do Do
59	275	150	5.56		4.58	150	95½	0.98		51.68	300	Do Do
60	262	150	3.74		5.00	150	86		1.26	50.42	300	Do Do
61	268	150	8.02		1.70	150	86	6.32		56.74	300	Do Do
62	260	150	6.55		5.73	150	85	0.82		57.56	300	Do Do
63	270	150	0.68		8.69	150	81		8.01	49.55	300	Do Do
64	293	200	3.41		9.12	300	88		5.71	43.84	500	up to Paria Kolapody Small Tank Supply channel
65	263	300	2.30		6.30	300	90		4.00	39.84	600	Dry Land
66	281	300	2.57		7.25	300	99		4.68	35.16	600	Do Do
67	264	300	2.30		6.57	300	92		4.27	30.89	600	Do Do
68	262	300	4.18		6.90	300	74		2.72	28.17	600	Do Do
69	272	300	4.02		5.46	300	104		1.44	26.73	600	Do Do
70	318	300	3.84		5.30	300	140		1.46	25.27	600	Do Do
			254.75		379.18 254.75 124.43			42.47	166.90 42.47 124.43			up to Small tank bed

26

								Rise	Fall			
8	[illegible]	200	1.60		5.52	200	108		3.92	108.44	400	Ground Soil
9	300		1.90									
				3.35		200			1.45	106.99	200	
				5.15		10			1.80	105.19	.10	Rasamalay tank Supply channel
					5.30	300	105		0.15	105.04	300	Do
10	279	300	3.40		5.03	300	116		1.63	103.41	600	Earth Soil
11	287	300	2.00		4.25	300	105		2.25	101.16	600	Do Do
12	298	150	4.99		4.57	150	106	0.42		101.58	300	Do Do
13	288	300	4.16		3.50	300	110	0.66		102.24	600	Do Supply chl of Rasamalay tank
14	288	300	3.55		3.35	300	110	0.20		102.44	600	Do
15	288	300	2.63		3.77	300	110		1.14	101.30	600	Do
16	287	200	3.30		5.00	200	98		1.70	99.60	400	Betwe[illegible] Palavatal 8 yards Broad
17	303	200	2.10		4.71	300	96		2.61	96.99	500	Earth Soil and Rasamalay Channel
18	285	300	5.72		2.40	300	108	3.32		100.31	600	Gravel and Stone Soil
19	276	150	5.92		2.25	150	97	3.67		103.98	300	Stone Soil and High Ground
20	281	150	5.80		3.45	150	120	2.35		106.33	300	Do Do Do
21	276	150	3.34		6.52	150	91		3.18	103.15	300	Do Do Do
22	279	150	1.55		4.90	150	91		3.35	99.80	300	Do Supply chl of Rasamalay Tank
23	279	300	3.78		5.60	300	99		1.82	97.98	600	
								Rise	Fall 1.82			Gravel 1 Stone Soil and Supply Chl of Rasamalay tank
24	274	400	3.16									Do
				3.40					0.24	97.74	400	
					6.34	290	90		2.94	94.80	290	Do Supply Channel of Rasamalay Tank
25	281	200	5.35		4.56	200	94	0.79		95.59	400	Do South of Salem Road 1 near larg[illegible] [illegible]
26	286	150	5.60		3.30	150	98	2.30		97.89	300	Do Do Do
27	280	150	6.70		3.87	150	[illegible]	2.83		100.72	300	Do Do Do
28	285	150	2.14		7.01	150	116		4.87	95.85	300	Do Do Dry Land
29	291	200	.90		8.50	400	118		7.60	88.25	600	Do Do Do
30	292		1.00								~~250~~	
				4.57					3.57	84.68	250	Do to supply channel of Patchal Tank
					5.23	350	110		0.66	84.02	350	Do Do
31	295	300	2.72		6.35	300	112		3.63	80.39	600	Do jungle Do
32	300	150	3.55		7.82	150	119		1.95	78.44	300	Do up to Pand
33	300	150	5.35		7.82	150	113		2.47	75.97	300	Do up to Patchal Field
34	300	300	2.90		4.90	300	135		2.00	73.97	600	Earth Soil Do Do
35	337	300	1.60		4.82	300	161		3.22	70.75	600	Do near Patchal tank
36	342	150	3.06		3.79	150	124		.73	70.02	300	Earth Soil near tank
[illegible]	296	150	4.00		3.72	150	124	0.28		70.30	300	Do. Do North of Tank

7-11-57

28/57

[illegible]

Taken before me

7-11-57

Line of levels taken from crest of yarayur tank supply calingulah to Samudrum Tank, Revelling

No. of Sections	Back Bearing	Back Distance	Back Level	Intermediate	Fore Level	Fore Distance	Fore Bearing	Difference Rise	Difference Fall	Reduced Level	Distance	Remarks
1	294	100	6.70							150.00		From crest of Erayur Calingulah
				6.48				0.22		150.22	100	
					9.40	300	155		2.92	147.30	300	Rock and Ground Soil
2	280	150	2.15		8.54	180	127		6.39	140.91	300	North of square tank Do Do
3	316½	100	2.08		9.90	200	137		7.82	133.09	300	East of tank ground Soil and rock
4	307	200	1.90		8.54	300	120		6.64	126.45	500	Do Do
5	301½	300	1.30		5.45	200	114		4.15	122.30	500	Jungle Stream
6	287	300	0.80		6.64	300	102		5.84	116.46	600	Do
7	280	300	0.90		5.00	300	107		4.10	112.36	600	Ground Soil

EXECUTIVE ENGINEER
17 JAN. 9
P.W.D.
SOUTH ARCOT DIVISION

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[illegible]

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~~[illegible]~~
[illegible]

17
3570/[illegible]

7.11.97

7.11.97

291 7.11.97

2 [illegible]

B [illegible]

EXECUTIVE ENGINEER
17 JAN. 98
P.W.D.
SOUTH ARCOT DIVN.

4
S.C. No 541 of 98.

7.11.97

30 7.11.97

[illegible]
[illegible]
[illegible]

[illegible]

B

[illegible]

[illegible]

Before me

C. Krishnaswami(?)

7.11.97
[illegible]

7.1.97.

[illegible]

EXECUTIVE ENGINEER
Register No.
17 JAN. 93
P. W. D.
SOUTH ARCOT DIVISION

3

14
3510/m/98

7.1.97.

[illegible]

B

[illegible]

EXECUTIVE ENGINEER
17 JAN. 98
P.W.D.
SOUTH ARCOT DIVISION

41/788

3

13
35 10 Jan/98

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7. 11. 97.

[illegible]

[illegible] 40 [illegible] 500 [illegible]

[illegible] 40 [illegible]

[illegible]

Before

C. Krishn[illegible]

Ag. [illegible]

7-11-97

[illegible]

5. C. 541/98

8

5
~~[illegible]~~
1043/[illegible]

12
3010/m/98

EXECUTIVE ENGINEER
Register No. ....
17 JAN. 93
P.W.D.
SOUTH ARCOT DIVISION

(7.11-97)

[illegible]

B

[illegible]

நாவிதவன

[illegible]

EXECUTIVE ENGINEER
Register No. ....
17 JAN. 98
P.W.D.
SOUTH ARCOT DIVISION

7
T.C. No. 541 of 98

5

1
~~1041/98~~
No 43 M/98

11
3510/M/98

Taluq office Tirvnamal.
15th December 1897.
Camp - Sumianpettai

310

A

To
The Sub Collector
of South Arcot District.

Respected Sir,

I beg to submit the report called for in your honour's Endorsement dated 21-10-97 No. 2661/current of 97 on the accompanying petition* of M.R.Ry. T. Appasami Naidu and R. Arunagiri Mudaliar Municipal Councillors containing suggestions for improving the drinking water supply of Tiruvannamalai Town.

* enclosures returned.

2. The Councillors propose the excavation of a channel connecting the Erayer and Kolapadi tanks so that the surplus waters of the former may be taken through the new channel to the Kolapadi tank and from there to Samudram tank by means of an odai which exists at present.

2661
Aug 97

29

Enclosure No. 2

TREASURY DEPUTY COLLECTOR
9 JUN. 1898
CUDDALORE.

From

The Tahsildar

of Trinomalai

EXECUTIVE ENGINEER
Register No. 2/4
17 JAN. 98
P.W.D.
SOUTH ARCOT DIVISION

To

The Sub Collector

of S. Arcot

Submitted for orders

Dated 15th }
Despd } December 97

14/12

No. 1087/D.S. 18 97

Enclos. 1 file

The proposal in para 4 must be placed before the D.P.W. address Executive Engineer.
25/12/97

Ref: Huzur order No. 2661/Aug 97

10/S.C. No. 541/98.

SUB COLLECTOR'S OFFICE
17 DEC. 97
SOUTH ARCOT

3/~~6181/10~~
1704 3m

Despatch abstract.

Submitting report on the petition of M.R.Ry. Appasami Naidu and Annaswami Mudaliar Municipal Councillors containing suggestions for improving the drinking water supply of Trinomalai Town.

10/3510/M/98

40

To

The Ex. Engr. S.A.

Sir,

I have the honor to forward herewith the Tirun. Tahsildar's arzi No. 1087/Dis. dated the 15th ultimo, offering certain suggestions to improve the water supply in Tirun. Town and to request that you will be so good as to favor me with an expression of your opinion as to the feasibility of the proposals of the Tahsildar contained in para 4 thereof viz to construct a head sluice on the Kottakulam anicut channel at the junction of the Salem Trunk Road and to divert the flood waters into a new channel to be excavated from there as far as the Kalappadi tank so that the odai sending its discharge may fill up the Samudram tank and hence the Samanankulam in Cusba Tiruvannamalai. It has to be considered whether this sort of diversion will sensibly cut short the supply for irrigation purposes, of any villages lower down and whether the scheme Can be ~~successfully~~ safely undertaken and pushed on to a successful termination.

2 An early reply is solicited.

V. Venugopal Chetty

Encl No 3.

69 M

4/5.28

Regd in 2661/Cm of 97
Despd 14.1.98

11/S.C. No 541 M/98

2/~~1618 M/98~~ 2043 M/98

9/3510/M/98

D. P. W.
5th CIRCLE.

South Arcot Divisional Office.

No. 69 M

4

Camp

Dated, 21st January 1898.
24th

From

J. E. Paul Esq.
Executive Engineer,
South Arcot Division.

To

The Acting Sub Collector of
South Arcot

ENCLOSURES.
1 file containing Tahsildar's report &c with survey & field book.

Sir,

With reference to your No 2661/Cm of 1897 dated 7th January 1898, I have the honour to suggest that the Sanitary Engineer should first be asked to decide the main lines on which the water supply should be brought to Tiruvannamalai.

2. It would be as well first to decide how much the Municipality is willing to pay for a water supply, whether a supply can or cannot be obtained from intercepting channels along the hills near Tiruvannamalai, how much water is required and whether the Cheyar water is potable. These points, I think, should first be settled

500. —2-97.

113

settled by the Sanitary Engineer.

3. I conclude that Government will demand payment for water whether taken from a tank used for irrigation or from a river used for irrigation, and that in both cases Government has the sole right of disposing of the water, and that the cultivators have no rights whatever in the water.

4. If the supply is taken from the river, of course, compensation water could be given to the irrigation tanks, but this question can only be gone into when the Project is in a more advanced stage.

5. I return the file after having taken a copy of the survey and field book, and I shall be happy to see any of the Councillors with reference to the scheme when I am at Tiruvannamalai.

6. It is possible that some irrigation projects have been proposed for taking water from the Cheyar or Pennar to the neighbourhood of Tiruvannamalai, if so, these might be

worth

114

worth consideration in this connection.

I have the honour to be,
Sir,
Your most obedient Servant,

21/1/98
Executive Engineer.

Agree as to this [illegible] in the draft.

C. H.
20/1/98.

45

2661

5th CIRCLE D. P. W.

Encl No 4

From

THE EXECUTIVE ENGINEER,

South Arcot Division.

To

THE

SUB-COLLECTOR'S OFFICE, SOUTH ARCOT. 23 JAN 98

No.

Dated

Despatched 189

Received

SUB-COLLECTOR'S OFFICE, SOUTH ARCOT. 4 FEB 98

Enclosures.

The papers will be forwarded back to the municipality with the suggestion that the matter may further be discussed with the Sanitary Engineer as suggested by the Executive Engineer South Arcot. The Revenue Department will be in a position to deal with the subject when the Municipality has come to a definite conclusion about the project and its execution.

V. Venugopaul Chetty

12/J. C. No 541 of 98

1/~~16184~~/98

1/2043 m/98

8/3510/m/98

A = Copy in full.

B = Not to be copied

P = Copy abstract only.

Q = Copy heading only.

Refce No. 236/Eng of 1897.

MUNICIPAL OFFICE,

Tiruvannamalai 8' June 1898

FROM V. Venugopaul Chetty Esquire, Sub Collector and I. C. S., Ex-Officio CHAIRMAN, MUNICIPAL COUNCIL,

TIRUVANNAMALAI.

46

To

THE Collector of South Arcot.

TREASURY DEPUTY COLLECTOR, CUDDALORE. 9 JUN 1898

Sir,

I have the honor to forward herewith the file of papers relating to the Cheyyar water scheme and to state that the result of an experiment conducted in the Kalyanakinar by means of a Country mote has already been communicated through you to the Sanitary Engineer.

The subject of improving the drinking water-supply of Tiruvannamalai is an important one and the opinion of the Sanitary Engineer or his assistant has to be ascertained as to which of the two schemes is likely to prove successful.

I therefore request you will be pleased to address the Sanitary Engineer on the matter and arrange for personal inspection of the places by him or by his assistant as early as convenient.

I have the honor to be

Sir,

Your most obedient servant

V. Venugopaul Chetty

Sub Collector and Ex Officio Chairman

Regd 7/6/98

C. No. 41/Engg of 98

4

From

THE CHAIRMAN,
Municipal Council,
TIRUVANNAMALAI.

LOCAL & MUNICIPAL DEPT.
CURRENT No. ~~1618~~
2043 M

To

THE Collector of
South Arc

Submitted to Government in the L. & Municipal Department for orders, with all enclosures, in continuation of No 347/Eng dated 31st May 1898

Dated 8th
Despatched 8th June

Refer No. 236/Eng of 1897.

Enclosures. (5)

Not recd

Subject.

Forwarding the file of papers relating to the Cheyyar water scheme in this municipality and requesting that the Sanitary Engineer may be addressed on the matter.

Ag. Collector
13/6/98

Kh
11-6-98.

13/S.C. No 541 of 98.

7/3510/M/98

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en given for copying
en copied
en examined
en signed } 189

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

No.

URES TO C. No.

GOVERNMENT .. .. .. A A A A A A A

GOVERNMENT.

NT WITH DITTO.

NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL.

N.B.—
A = Copy in full.
B = Not to be copied
P = Copy abstract only.
Q = Copy heading only.