"manage" 1

To Ms. Christine van Wijk
With Compliments

VILLAGE LEVEL WATER SUPPLY MANAGEMENT STUDY
(Report No. 3)

NAP Office
Hyderabad
A.P.

PENTAPADU MANDAL
WEST GODAVARI DISTRICT

SEPT/OCT 1991

(Report of 12 Panchayat (=Village Council)-managed RWS with SSF.).

TABLE OF CONTENTS

G - Copy - water supply bye-laws - Pentapadu

H - a)Government Order -appointment of WMS (Operator - P.W.S Scheme)

b)Government Order funds for programme in Water Scarcity and for repairing equipment.

LIST OF ABBREVIATIONS

1.	PRED.	Panchayati Raj Engineering Department.
2.	NAP.	Nether Lands Assistad Projects.
3.	PWS.	Protected(Piped) Water Supply
4.	MPWS.	Mini protected Water Supply
5.	B.W.	Bore well
6.	H.P.	Hand Pump
7.	O/M.	Uperation and Maintenance
8.	G.P.	Gram Panchayati
9.	MPPP.	Mandal Praja Parishad President
10.	MDO.	Mandal Development Officer.
11.	Z.P.	Zilla (District) Parishad.
12.	D.D.O.	District Development Officer.
13.	E.E.	Executive Engineer.
14.	D.E.E.	Deputy Executive Engineer.
15.	A.E.	Assistant Engineer.
16.	ICDS.	Integrated Child Development Scheme.
17.	V.D.O.	Village Development Officer.
18.	DM&HO.	District Medical and Health Officer.
19.	MPHW.	Multi Purpose Health Worker.
20.	WS	WATER SUPPLY
21	CP	COMMUNITY PARTICIPATION
22	HC	HOUSE CONNECTION
23.	PSP	PUBLIC STAND POSTS
24.	EO.	Executive Officer

SUMMARY OF FINDINGS AND RECOMMENDATIONS

A. ANALYSIS OF 12 P.W.S. SCHEMES IN WEST GODAVARI DISTRICT PENTAPADU MANDAL

TYPE OF SUPPLY - P.S

1.	No.of Schemes studied	.. 12
2.	No.of Schemes functioning	.. 12
3.	No.of Schemes not functioning	Nil
4.	No. with major construction fault	.. 1
5.	No. giving water less than 1 hour	.. 5
6.	No. giving 8 hour supply	.. Nil
7.	No. giving six hour supply	.. 1
8.	No. covering entire village	.. 4
9.	No. supplying Raw Water	.. 3
10.	No. where filters are choking within 10 days.	.. 3
11.	No. with all PSPS giving water	.. 4
12.	No. with chlorinators	.. Nil
13.	No. with Chloroscopes	.. Nil
14.	No. where water test results available	.. Nil
15.	No. with W.S. byelaws	.. 5

B. THE FINDINGS:

Based on the study 12 completed P.W.S. schemes in the Pentapadu Mandal of West Godavari district.

I. Efficiency:

Though schemes are designed to supply water for 8 hours and 1 PSP/50 families the actual duration of water supply ranges from 20 minutes to 4 hours. Thus the distribution efficiency is low.

II. Level of functioning:

1. Quality : Chlorination is irregular in all schemes and no verification or residual chlorine is done.

2. Quantity: The P.S.P. users is in all schemes do not get enough water.

3. Princes and hamlets in some villages are not covered.

C. Recommendations:

I. The short duration water supply through 1 PSP/50 famili do not allow many families to get water. The options for increasing the duration of water supply should be considered.

1. Dividing the distribution into sections and supplying water one section after another by valve control.

2. The majority of the families with house connection live in a limited area. In the distribution, arrangements should be made to seperate this section from general PSP area (by valve - separate line?), so that water supply duration for P.S.P. users can be increased.

II. The possibility of water testing by using portable kits at sub-division/Mandal level should be tried.

III. From experience gained in different parts a suitable chlorinating system should be selected and installed in all PWS Schemes.

IV. The implementing agency to operate and maintain scheme for 6 months during which a local person will be trained for O/M of the scheme. The scheme should then be handed over all relevant documents, flow charts O/M Manual, estimates and trained operator.

V. Handing over to be done in a public function so that ownership is clear in public eye.

VI. The implementing agency should monitor the schemes and suggest preventive maintenance measures.

OPINIONS/SUGGESTIONS FROM IMPORTANT OFFICERS

I. Collector, West Godavari District

(1) It is not clear to people, which government office is related to drinking water problems. People go to the ZP office, Collector, Mandal office etc. Specify the functions of offices. Certain matters should be settled at the G.P. level itself. Hence give specific, limited responsibilities to the G.P. This will help in promoting a sense of ownership.

(2) The tariff for water must be paid by the user - This will act as a check on regularity and maintenance of water supply.

(3) Do not make more village level organisations.

(4) Gram Panchayats with more income should set apart some funds for water supply instead of increasing tariff.

II. DISTRICT DEVELOPMENT OFFICER, WEST GODAVARI DISTRICT:

1. Any parallel organisation to the G.P. at the village level will clash with G.P.

2. G.P.s do not function due to inertia of people.

3. The drinking water cess, if necessary can be collected (as part of house or land tax) by MRO - pooled at district level and distributed to GPs.

III. SARPANCHES MEETING AT MANDAL HEAD QUARTERS - PALTAPADU MANDAL

(1) Government must subsidise O/M expenses of water supply 100% subsidy for minor G.P; and 50% for notified G.P.

IV. PRED EXECUTIVE ENGINEER - PARGAPUR:

(1) All Drinking Water taxes should be indirect - No direct drinking water taxes must be levied.

(2) A separate line for house connections to be given. This will give more water to P.P.

V. MANDAL DEVELOPMENT OFFICER, PENTAPADU MANDAL:

(1) Mandal office is not involved in water supply programmes. The R.W.S - JE is attached to the PRED sub-division office.

(2) The health department is also not integrated with the mandal office.

(3) By giving more PSPS, and regular water supply the demand for House connections will come down.

(4) The monitoring of O/M of W.S. must be a function of the Mandal office.

(5) To improve O/M, organise training programmes for sarpanches and GP members on water supply - health.

(6) The mandal can be involved in the water committee at the village through the VDO.

(7) Direct tax for W.S. - as a percentage of the House tax.

CHAPTER - I

BACKGROUND TO THE STUDY:

1.1 INTRODUCTION

1.2 CONSTITUTION OF P.R.E.D.COMMITTEE

1.3 AND EXTERNAL STUDY TEAM

1.4 METHODOLOGY

1.5 PILOT STUDY

The above topics are dealt with in VLM - Study of Nalgonda District, Nalgonda Mandal(P. 7-11).

CHAPTER - II

2.1 Data on the District:

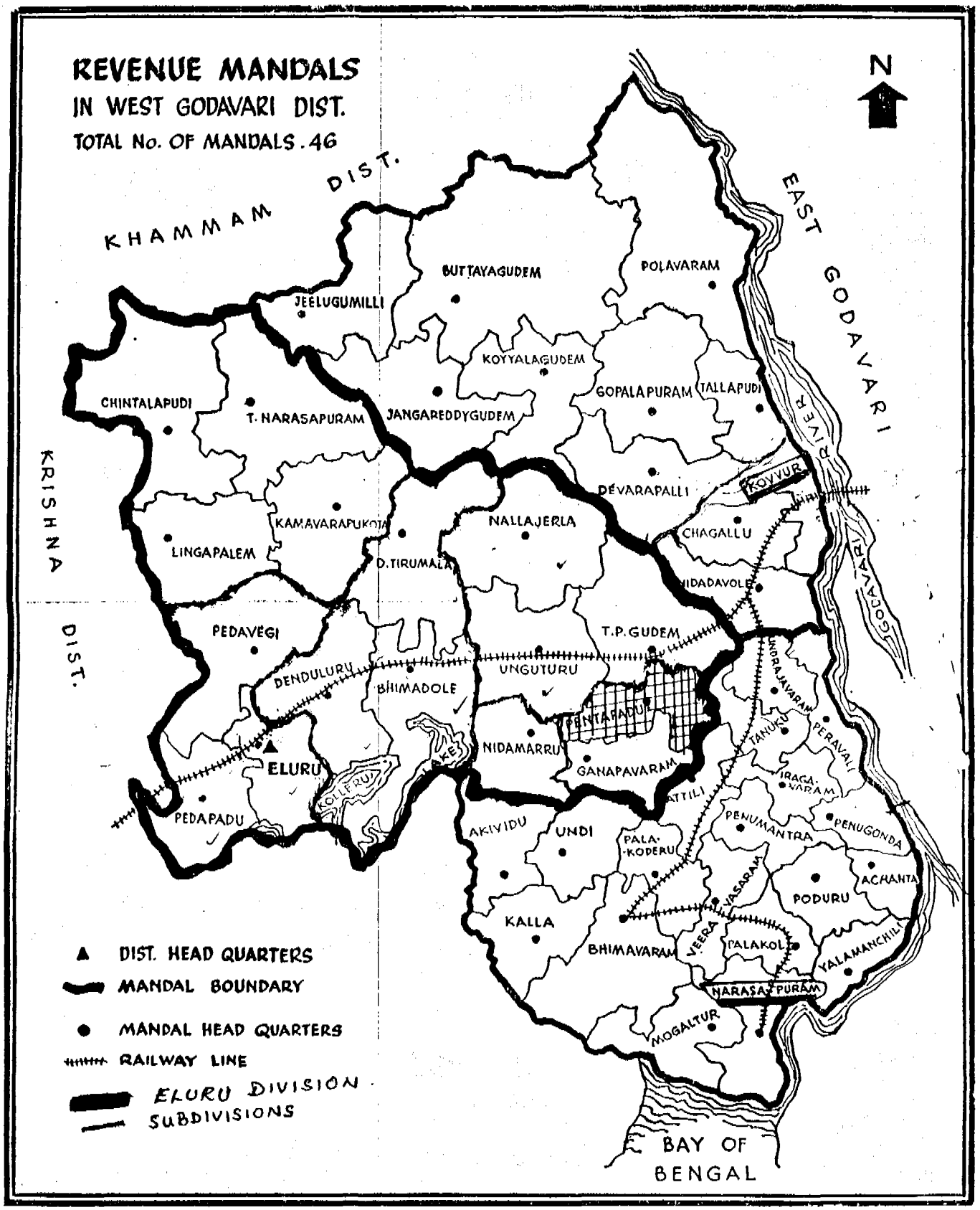
(GEOGRAPHICAL INFORMATION):

The West Godavari District lies on the West of River Godavari adjoining the Bay of Bengal. It is bounded on the North by Khammam District and Krishna District in the West. The District can be devided into three natural regions - Delta, upland and agency regions . There are 3 corresponding revenue and administrative regions. Viz. Eluru- Upland

Narsapur - Delta

Kovvur - Agency

The District is further divided into mandals and villages. The details are shown below. There 8 municipalities in the district.


REVENUE MANDALS
IN WEST GODAVARI DIST.
TOTAL No. OF MANDALS . 46
N
KHAMMAM DIST.
EAST GODAVARI
KRISHNA DIST.
BUTTAYAGUDEM
POLAVARAM
JEELUGUMILLI
KOYYALAGUDEM
GOPALAPURAM
TALLAPUDI
CHINTALAPUDI
T. NARASAPURAM
JANGAREDDYGUDEM
DEVARAPALLI
KOIVUR
KAMAVARAPUKOTA
NALLAJERLA
CHAGALLU
LINGAPALEM
D.TIRUMALA
PEDAVEGI
T.P.GUDEM
DENDULURU
UNGUTURU
BHIMADOLE
PENTAPADU
NIDAMARRU
ELURU
GANAPAVARAM
PEDAPADU
AKIVIDU
UNDI
PALA-KODERU
PENUMANTRA
PENUGONDA
KALLA
PODURU
ACHANTA
BHIMAVARAM
VEERA
PALAKOL
YALAMANCHILI
NARASA-PURAM
MOGALTUR
BAY OF BENGAL
DIST. HEAD QUARTERS
MANDAL BOUNDARY
MANDAL HEAD QUARTERS
RAILWAY LINE
ELURU DIVISION
SUBDIVISIONS

Revenue Divisions.	No.of Mandals.	No.of Gram Panchayats.	Notified Gram Panchayats.	Municipalities
Narsapur	12	225	68	3
Eluru	16	311	50	2
Kovvur	18	274	73	3
Total:	46	810	191	8

WEST GODAVARI DISTRICT: GENERAL FEATURES

	District	State
Geographical area	7780 Sq.km.	275100
Population	2873958	53550000
Scheduled Castes	464145(16.2%)	7962000(14.9%)
Scheduled Tribes	66586(2.3%)	3176000(5.9%)
Urban Populations	596874(20.8%)	-- (23.9%)
Rural Population	2277084(79.2%)	-- (76.1%)
Density of Population	371/Sq.Km	195/Sq.Km.
Litracy	37.61%	29.94%
% of agricultural workers to total workers	70.7%	69.53%
% of Agricultural labourers to total workers	47.7	36.79
Net area sown	57.00	40.1
% irrigated area in net area sown	80.11	38.69

The density of population 371/Sq.Km. is second highest in the state. The first being Hyderabad district.

The district is agriculturally advanced 57% of the geographic area is cultivated(40.1%-State). Paddy, Sugar Cane, Mango, Citerus are major crops. 18% of the people own 60% of the land and 82% own 40% of the land. Thus though the district is agriculturally rich, poverty exists side by side with large possessions.

2.2 ECONOMY

Rs. in lakhs.

Sources of Revenue	Demand	Collection	Balance
Land Revenue	2302.70	594.96	1712.50
Sales term APGST	2423.90	2288.96	134.94
C.S.T.	453.31	397.66	55.65
A.P.E.T.	274.77	256.62	10.15
Total:	5454.68	3538.20	313.24

Total: 9306.12 lakhs.

2.3 DATA ON PRED. SET UP IN THE DISTRICT:

No.of PRED. Divisions.	3
No.of PRED. Sub-divisions	16
No.of Mandals.	46

There are 2 mobile teams in the district for maintenance of Hand Pumps. They are attached to Eluru Division.

The three divisions, 16 sub-divisions 46 mandals and 848 villages:-

Divisions	Sub-division	Mandals
1. Eluru	1.Eluru(Delta)	1. Eluru 2. Pedapadu 3. Pedavegi
	2.Chinthalapudi(upland)	1.Chintalapudi 2.Lingapalem 3.K.V.Kota 4.T.Narasapuram

1	2	3
	3.Ganapavaram(Delta)	1.Ganapavaram 2.Nidumarru 3.Pentapadu
	4.Bhimadole(Delta)	1.Bhimadole 2.D.Tirumale 3.Denduluru
	5.Tadepalligudem (Delta)	1- Tadepalligudem 2. Nallajerla 3. Ungutur.
2. Narsapur	1.Bhimavaram(Delta)	1.Bhimavaram 2.Palakoderu 3.Vanapavaram
	2.Palakole(Delta)	1.Palakole 2.Paderu 3.Achanta
	3.Narsapuram(Delta)	1.Narsapuram 2.Mogalturu 3.Yelamanchili
	4.Akividu(Delta)	1.Akividu 2.Kalla 3.Undi
	5.Tanuku(Delta)	1.Tanuku 2.Undrajavaram 3.Iragavaram 4.Attili
3. Kovvur	1. Kovvur(Delta)	1.Kovvur 2.Chagallur 3.Nidadavolu 4.Revlapalli
	2.Jangareddigudem(A) (upland area)	1.Gangareddigudem 2.Buttayagudem
	3.Gangareddigudem(B) (upland area)	1. Geelugumilli
	4.Gopalapuram (upland area)	1.Gopalapuram 2.Tallapudi
	5.Polavaram(upland area)	1.Polavaram 2.Koyyal gudem.
	6.Samisilagudem Penumantra (upland area)	1.Penumantra 2.Penugonda 3.Peravali

The water testing laboratory is at Vijayawada.

The entire region can be devided into 2 types according to the R.W.S.Problems. (1)Upland area using ground water (2)Delta area using surface water. The mandal selected for study i.e. Pentapadu is typical of delta area and the situations/problems regarding R.W.S.in upland area is somewhat, similar to Telangana area- as presented in the study on Nalgonda mandal. The upland area is generally served by Bore Wells fitted with hand pumps or motors with piped system ranging from

1. a single point supply from a bore well with motor-direct pumping.
2. direct pumping from bore wells with multiple supply points.
3. GLSRs. with Bore well as source- and battery of taps (MPWS).
4. OHSRs. and a distribution system with PSP. and House connections with B.W.as sources(PWS).

The delta area has to use a filter process to make canal water potable(slow sand filters)-while the upland area the ground water is directly supplied without any filtering process.

2.4 DATA ON THE NUMBER OF TYPE OF WATER SUPPLY SERVICES IN THE DISTRICT:

	District	State
No.of PWS.Schemes completed.	551	9269
No.of MPWS.Schemes completed	201	--
No.of Hand pumps installed.	1844	150157
No.of mobile maintenance teams.	2	139
No.of pump mechanics	10	828

The water supply scenario in the 3 divisions of the Dist.

Sl. No.	Name of the divisions.	P.W.S. completed.	I.W.S. completed.	B.W. and hand pumps.
1.	Eluru	82	108	1022
2.	Narsapur	176	5	NIL
3.	Kovvur	84	88	819
	Total:	342	201	1841

Problem villages for Drinking Water:

(POTABLE WATER SOURCE 1.5 Kms. AWAY)

	District	State
Total No.of villages	849	27379
No.of problem villages identified.	841	22860
No.of problem villages covered	601	18416

DEFUNCT SCHEMES(PWS)

Eluru	11	--	7 Mechanical Filter Damaged 1 Break of steel GLSR. 1 No. filter 1 GLSR, Filter, not present 1 steel tank leaking mech. filter damaged.
Kovvuru	3	--	3 Motor to be replaced 1 Steel tank leaks 2 Mechanical filter damaged.
Narsapur	9	--	All have mechanical filters damaged.

DESALINATION PLANTS IN WEST GODAVARI DIST.COMPLETED & COMMISSIONED

The following villages in Narsapur divn.have de-salination plants.

Narsapur	1. Molepaeru 2. Dubbalapallipalem 3.Yetimurdi 4.Nodi(Hamlet)Muthyalpalli 5.Chintharevu
Total:	5 De-salination Plants.

EXPENSES INCURRED IN HAND PUMP MAINTENANCE IN THE DISTRICT IN 1990-91.

Sl No.	Name of the District/ Division.	Original balance as on 1.4.1990.	Grants released during the year.	expenditure incurred upto March,'91.	Balance.	Remarks.
1.	2.	3.	4.	5.	6.	7.
I.	WEST GODAVARI					
	1) Eluru	-0.21	3.56	2.84	0.54	--
	2) Kovvuru	3.01	2.84	1.58	4.27	--
	Total:	2.80	6.40	4.42	4.78	--

Superintending Engineer (PR)
Eluru.

ELURU DIVISION OF WEST GODAVARI DISTRICT:

There are 5 Sub Divisions in the Eluru Division.

1) Eluru
2) Bhimadole
3) Tadepalligudem
4) Ganapavaram
5) Chinthalapudi

The V.L.W.M. study was done in the Ganapavaram Sub Division at Pentapadu Mandal. The water Supply system in this Sub Division is given below:

Sl No.	Name of the Sub Division.	Schemes completed			
		PWS Schemes	MPWS Schemes	Hand pumps	Drinking water tanks.
1.	Eluru	11	21	111	18
2.	Bhimadole	13	2	63	5
3.	Tadepalligudem	25	9	61	5
4.	Ganapavaram	27	16	--	20
5.	Chinthalapudi	6	5	787	--
	Total:	82	53	1022	48

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Besides this Eluru Sub Division has 43 bore wells with submersible motors giving a single point supply.

MAINTENANCE EXPENDITURE ON R.W.S IN ELURU DIVISON -- 3 YEARS

Year.	No.of B.W. working in the Division.	Grants received for maintenance of Borewells.	Cost of spare parts during the year.	Expenditure on establishment B.W. mechanics & mobility.	domestic.
1.	2.	3.	4.	5.	6.
1988-89					
Eluru Divn.	--	4.00 lakhs	187124.00	320396.00	--
1989-90					
Eluru Divn.	--	3.55 ,,	324353.25	120616.00	--
1990-91					
Eluru Divn.	--	3.56 ,,	303517.00	286458.00	--

2.5 PROCEDURE ADOPTED TO SELECTION OF SAMPLE MANDAL:

The Pentapadu Mandal was selected for the following reasons.

1) It is a representative mandal of the district for surface water sources.

2) It has large number of working PWS Schemes (12).

The schemes studied compared with total in mandal and district.

Sl No.	Type of schemes.	Total No. of studied.	Total in sample mandal.	percentage studied.
1.	PWS Schemes	12	12	100%
2.	MPWS Schemes	Nil	Nil	Nil
3.	Hand pumps	Nil	Nil	Nil
4.	Villages.	16	20	80%

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CHAPTER - III

3.1 DATA ON THE MANDAL - GENERAL INFORMATION ABOUT MANDAL STUDIED

GEOGRAPHIC INFORMATION:- Pentapadu Mandal is in the delta region it is 5 Kms. from Tadepalligudem, Pentapadu Mandal belongs to the Eluru Division. It has 22 Gram Panchayats of which 5 are notified gram panchayats. The villages with populations SC/ST population is shown below:-

Sl No.	Name of the village.	Population 1981.	S.C. population.	S.T. population.	Education/ Medical facilities.	Notification.
1.	2.	3.	4.	5.	6.	7.
1.	Pentapadu	11887	1571	29	Dg.College Jr. " High School.	Notified.
2.	DCH Kandrika		De poplated			
3.	Umamaheswaram	1029	650	--	--	--
4.	Geltapalem	3712	544	11	--	--
5.	Bodapadu	1045	26	11		
6.	Kudunuru	2116	233	6	P.H.C.	
7.	Akuthigapadu	1884	603	11		
8.	Parimella	2272	503	6	High School Jr.College	
9.	K.Pentapadu	2936	740	--	Balavadi.	
10.	Yanalapalli	861	327	13		
11.	Narasimharampuram		De populated			
12.	V.Vipparu	4725	418	26	H.School Jr.College	Notified.
13.	Racherla	2481	676	10		
14.	Vallurupalli	1852	568	5		
15.	Alampuram	4427	685	69	H.School	-do-
16.	Ravipadu	2911	414			
17.	Chinthapalli	1339	451	6		
18.	Meenavalluru	3489	415	71	H.School	
19.	Korumilli	1343	314	9	V.Hospital	
20.	B.Kondepadu	2595	347	--		
21.	Prathipadu	3487	766	28		Notified
22.	Darsiparru	3321	546	20	--	--
	Total:	59712	10786	331	--	--

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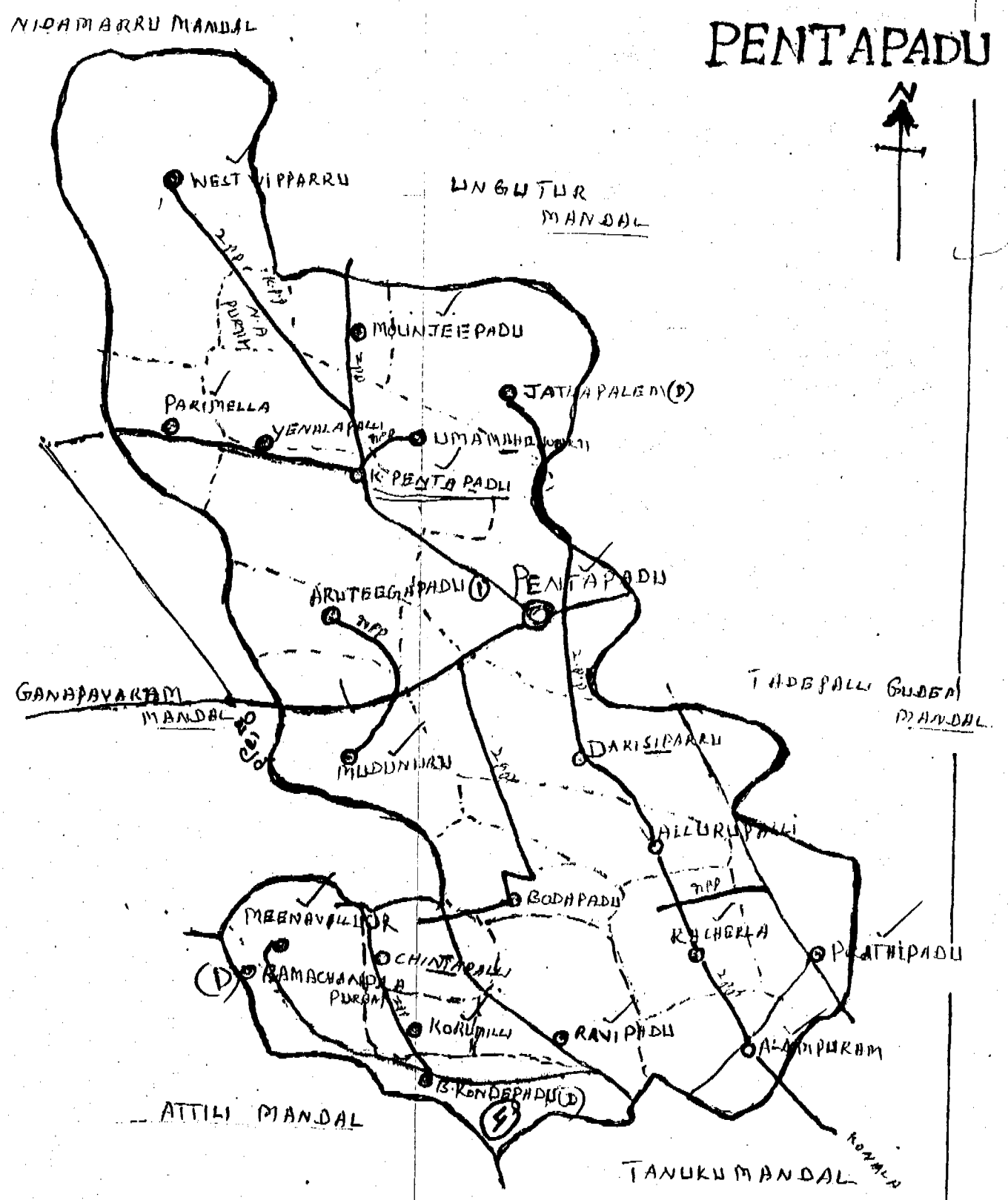
MANDAL PRAJA PARISHAD PENTAPADU



The area of the Mandal is 116.38 Sq.Km) (1.5% of Dist.). The nearest town for commerce and communication facility is Tadepalligudem (5 Kms. from Pentapadu H.Q). Out of the total population of 59712, 24838 are the main workers and of these 52% are agricultural labourers. Out of the total area of 11,638 Hecters, 9843 hectores are cultivated and 1795 hectores are used for ⊠ non-agricultural purposes, 9740 hectores are under Paddy cultivation. The Godavari canals irrigate 9827 hectores of land.

PENTAPADU MANDAL GENERAL FEATURES:-

S.No.	Item	Mandal	District
1.	Geographical area	116.38 Sq.Km.	7780
2.	No. of villages (G.Ps)	20	848
3.	Population	59712	2873985
4.	Scheduled Castes	10786%	464145 (16.2%)
5.	Scheduled Tribes	331%	66586% (2.3%)
6.	Literates	19143 = 39.7%	37.61%
7.	Workers	24838 = 45.8%	--
8.	Cultivators	5330 = 24.9%	--
9.	Agricultural labourers	12915 = 52 %	47.7%
10.	Non-Agriculral	4551 = 9.5%	29.3%
11.	Non-workers	26004 = 54.2%	--
12.	Villages electrified	100%	100%

3.2 ECONOMY:- Gram Panchayat wise income, expenditures is given below.

3.3 P.R.E.D.:- The Pentapadu Mandal belongs to the Ganapavaram Sub Division constiting of Pentapadu, Nidamarru and Ganapavaram Mandals. There is no mobile team at this Sub Division.

Contd....

Statement No. I — RECEIPTS AND EXPENDITURE OF THE GRAM PANCHAYATS IN PENTAPADU MANDAL. — DPO

Sl no.	Name of the Panchayat	Receipts for the last 3 years			Expenditure for the last 3 years		
		1990–91	1989–90	1988–89	1990–91	1989–90	1988–89
1	2	3	4	5	6	7	8
1	Meenavalluru	96,879	49,522	58,338	69,572	63,493	21,654
2	Pentapadu	7,56,901	8,52,401	6,85,568	10,08,387	6,86,505	5,53,858
3	Kudumuru	1,44,505	84,218	52,103	1,35,675	55,141	90,623
4	Koruvilli	42,359	17,887	35,293	41,951	18,282	28,200
5	B. Kondepadu	94,163	85,901	91,288	65,561	80,288	57,376
6	Harijanawada	2,09,685	1,79,441	1,66,559	1,35,791	1,23,484	1,17,531
7	Umamaheswaram	16,481	24,253	17,213	11,198	31,523	15,216
8	Gajanalapalli	34,354	75,369	51,041	62,682	65,559	27,159
9	Chennakapalli	77,771	45,329	69,942	1,23,873	26,539	36,859
10	Bodapadu	21,365	16,921	38,224	40,644	5,634	6,954
11	Ravipadu	59,277	88,801	89,219	79,517	1,08,471	74,268
12	K. Pentapadu	99,547	93,548	56,973	1,15,241	55,351	58,284
13	Rachuru	1,04,515	1,15,229	1,04,738	1,44,861	96,752	90,504
14	Alamuragapadu	74,130	33,958	37,349	64,738	22,296	15,438

		Receipts			Expenditure		
		90-91	89-90	88-89	90-91	89-90	88-89
1	2	3	4	5	6	7	8
		1,11,021			1,24,154		
15	Jallapalem	~~1,36,691~~	74,765	64,647	~~136~~	63,639	74,551
16	Vallurupalli	24,217	38,742	35,012	36,371	30,901	23,428
17	West Lippara	1,99,102	2,14,551	1,67,649	2,18,532	1,59,478	1,44,541
19	Ramachandrapuram	36,606	28,497	13,496	41,556	22,426	14,252
20	Alamuru	3,70,906	3,65,738	3,14,225	2,52,367	3,44,228	2,28,425
21	Patiwada	88,990	75,772	70,125	88,514	63,995	87,539
22	Prathipadu	3,80,915	3,85,976	3,42,359	4,67,511	3,29,973	3,86,587
18	Narayanapadu	69,045	30,103	39,251	53,175	42,259	9,569

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మండలాభివృద్ధి అధికారి,
గంగవరం.

3.4 THE STATUS OF WATER SUPPLY IN THE MANDAL:-

The R.W.S. Schemes in the villages is given below.

Sl No.	Name of the village.	Type of water supply.	Status of PWS Scheme.	No.of bore wells/Hand pumps.	Other sources.
1.	2.	3.	4.	5.	6.
1.	Pentapadu	PWS	A-1	10	Tank
2.	Umamaheswaram	Tank	C		"
3.	Getlapalem	"	D		"
4.	Bodapadu	"	D		"
5.	Muddunuru	PWS	A-2		"
6.	Akuthigalapadu	Tank	D		"
7.	Pararmella	PWS	A-3		"
8.	K.Pentapadu	PWS	A-4		"
9.	Yanalapalli	Tank	D		"
10.	W.Wipparu	PWS	A-5	3	"
11.	Racherla	PWS	A-6		"
12.	Vallurupalli	Tank	(B)		"
13.	Alumapuram	PWS	A-7	6	"
14.	Ravipadu	PWS	A-8		"
15.	Chinthapalli	Tank	(C)		"
16.	Meenavalluru	PWS	A-9	10	"
17.	Korumilli	PWS	A-10		"
18.	B.Kondepadu	Tank (B.W)	D	16	"
19.	Prathipadu	PWS	A-11		"
20.	Darsiparru	Tank	(C)	4	"

A -- completed and commissioned
B -- in progress
C -- completed not commissioned
D -- sanctioned.

The bore wells are shallow bore wells (filter points)

3.5 PROCEDURES FOR SELECTION OF VILLAGES:-

The team selected;

a) All villages where PWS Schemes are commissioned i.e., 12 villages and four other villages i.e., 16 villages in 80% of villages in the Mandal.

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CHAPTER - IV

OPERATION MAINTENANCE-ANGLES OF PERCEPTION/ISSUES:

4.1 Definition of operation maintenance

4.2 Areas covered under operation maintenance

4.3 Conception of integrated approach (please see VLWM-Study - Nalgonda District, Page: 23 - 25)

CHAPTER - V

MANAGEMENT AND ADMINISTRATION OF GRAM PANCHAYATS IN PENTAPADU MANDAL.

5.1 Political organisation see VLWM Nalgonda (P. 26)

5.2 Civil Administration.

ADMINISTRATIVE STAFF:

In the Pentapadu Mandal there are 4 notified Gram Panchayats and 16 non-notified Gram Panchayats. The notified Gram Panchayats have Executive Officer and other staff members while in the non notified Panchayats a full time/part time clerk only is available. In addition to this, if the Gram Panchayats has a PWS., the PWS operator will also be present. The following table shows the staff position in the Gram Panchayats.

Sl No.	Name of the Gram Panchayat.	Notified/ Non-notified.	Staff.	P.W.S. operator.
1.	2.	3.	4.	5.
1.	Pentapadu	Notified	E.O.+ staff	1 operator
2.	Umamaheswaram	Non-notified	Part time clerk	--
3.	Gotlapalem (Mounjipadu)	"	"	1 operator
4.	Bodapadu	"	"	--
5.	Muddunuru	"	Full time clerk	1 operator
6.	Akuthigapadu	"	P.T.Clerk	--
7.	Paramilla	"	F.T.Clerk	1 operator
8.	K.Pentapadu	"	"	1 operator
9.	Yenalapalli	"	P.T.Clerk	--
10.	M.Nipper	Notified	E.O.+staff	1 operator

Contd....

1.	2.	3.	4.	5.
11.	R cherla	Non-notified	F.T.Clerk	operator
12.	Vallurupalli	"	P.T.Clerk	--
13.	Alanpuram	Notified	E.O.+ Staff	Operator
14.	Gavipadu	Non-notified	P.T.Clerk	--
15.	Chinthapalli	"	-do-	"
16.	Meenavallur	"	F.T.Clerk	Operator
17.	Morumilli	"	P.T.Clerk	Operator
18.	B.Pondapadu	"	-do-	--
19.	Pratipadu	Notified	E.O.+ Staff	Operator
20.	Darsiparru	Notified	-do-	--

5.3 REVENUE-FINANCE:-

There are a no. of sources of income for a Gram Panchayat and also a no. of expenses. A balance sheet of income, expenses of the Meenavallur Gram Panchayat is given below.

The house tax collections of Gram Panchayats is also given below.

INCOME & EXPENSE STATEMENT of MEENAVALLUR GRAM PANCHAYAT - PENTAPADU MANDAL

SL No	INCOME	88-89	89-90	90-91
I	ORDINARY INCOME			
1	HOUSE TAX	5,497 50	5,700 25	7,749 75
2	PROFESSION TAX	190 00	240 00	876 00
3	FROM MARKET	2,230 00	2,508 00	3,100 00
4	FROM FRUIT TREES	—	3,400 00	9,000 00
5	GRASS SALE	1,370 00	1,303 00	1,389 00
6	STAMP DUTY	17,295 98	19,022 10	21,691 00
7	POPULATION GRANT	1,748 00	693 00	1,586 00
8	SALARY GRANT	17,000 00	27,500 00	34,500 00
9	OTHER INCOMES	432 00	430 ·	— —
10	FISH AUCTION	2,000 00	1,500 00	4883 00
11	LAND CESS	9724 00	2447 00	2,596 00
	ORDINARY INCOM TOTAL.	57,590 38	49,073 60	87,370 75
II	CAPITAL INCOM			
12	DEPOSITS	350 00	—	100 00
13	LIBRARY CESS	430 92	448 00	611 48
III	GRANTS			
14	GRAT FOR WORK	—	—	8797 00
	CAPITAL GRAN TOTAL	780 92	448 00	9,508 48
	SUB TOTAL	58,371 30	49,521 60	96,879 23
	OPENING BALANCE	13,308 43	50,026 73	43,651 73
	GRAD TOTAL	71,680 38	99,548 33	1,40,530 96

SL No	EXPENSES	88-89	89-90	90-91
1	- SALARY of STAFF	4013 85	6640 00	12,963 60
2	- TANK WATCHMAN	3275 00	7,235 20	5,426 40
3	- SWEEPER	2,134 40	3637 00	5820 00
4	- T.A.	334 50	127 00	853 50
5	- LIGHTING	8192 00	17024 00	14,908 00
6	- RADIO	70 00	— —	72 00
7	- NEWS PAPER	224 00	619 00	582 00
8	- FESTIVAL	250 00	250 00	200 00
9	- DRAIN REPAIR	1915 00	—	—
10	- WATER SUPPLY	—	8141 00	—
11	- INCIDENTALS	969 00	1461 00	88 50
12	- ROAD DRAINS	—	16,376 00	9687 00
13	- POND LEASE	—	110 00	—
14	- PENTION	123 50	186 00	899 00
15	- DEPOSIT	—	—	100 00
16	- LIBRARY CESS	439 10	431 00	1043 00
17	- ELECTRICAL	—	1880 00	—
18	- BOOKS	—	—	1426 00
19	- POST	—	—	65 00
20	- ELECTRICIAN SALARY	—	—	1,200 00
21	- RADIO EXPENSE	—	—	72 00
22	- STREET LIGHTS	—	—	120 00
23	- STATIONERY	—	—	505 20
24	- JRY WORKS	—	—	1945 00
25	- REPAY ADVANCE	—	—	163 00
26	- VILLAGE WORKS	—	—	9030 00
27	- STREET LIGHT METER	—	—	600 00
28	- ELECTRICITY BILL offize	—	—	391 60
29	- R.C.C. PIPE	—	—	2,184 00
	TOTAL EXPENSE	21,653 85	63,492 20	69,572 80
	BALANCE	50,026 73	36,055 13	70,958 16
	GRAD TOTAL	71,680 38	99,548 33	1,40,530 96

STATEMENT NO.III. DEMAND AND COLLECTION FOR THE VILLAGES COVERED BY THE P.W.S./M.P.W.S.SCHEMES.

Sl. no.	Name of thePanchayats		Demand on House tax			Demand on Water Tax			Collection on House tax			Collection on Water Tax		
			1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91
1.	2.		3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
	PENTAPADU MANDAL:													
1.	Meenavalluru	(A)	5,803	6,147	7,955	—	—	—	5,803	6,147	7,749	—	—	—
2.	Pentapadu	(A)	1,02,925	1,11,000	1,25,194	—	—	26,241	1,02,268	1,04,677	1,25,194	—	—	26,241
3.	Mudunuru	(A)	7,079	7,134	6,702	—	—	2,881	6,777	6,613	6,454	—	—	2,881
4.	Korumilli	(A)	4,110	5,727	5,312	—	—	—	3,999	5,727	5,312	—	—	—
5.	B.Kondepadu	(D)	21,955	22,040	20,055	—	—	—	20,311	20,358	19,667	—	—	—
6.	Barsiparru	(C)	16,538	16,624	16,547	—	—	—	14,238	15,587	16,439	—	—	—
7.	Umamaheswaram	(C)	1,661	2,585	2,456	—	—	—	1,661	2,471	2,309	—	—	—
8.	Yanalapalli	(D)	3,668	3,764	3,618	—	—	—	3,421	3,519	3,343	—	—	—
9.	Chintapalli	(C)	3,637	3,402	3,158	—	—	—	3,637	3,402	3,158	—	—	—
10.	Bodapadu	(D)	714	1,453	1,353	—	—	—	605	1,453	1,260	—	—	—
11.	Ravipadu	(A)	6,876	6,837	6,582	—	—	—	6,716	6,837	6,383	—	—	—
12.	K.Pentapadu	(A)	6,978	6,978	6,430	—	—	—	6,618	6,585	6,051	—	—	—
13.	Racherla	(A)	16,498	16,695	15,328	—	—	6,401	16,474	16,695	15,328	—	—	6,401
14.	Akuteegapadu	(D)	4,538	4,538	4,514	—	—	—	4,538	4,538	4,514	—	—	—
15.	Jatlapalem	(D)	5,267	7,331	5,914	—	—	—	5,267	6,521	5,633	—	—	—

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Sl. No.	Name of the Panchayats	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91	1988-89	1989-90	1990-91
1.	—	—	—	—	—	—	—	—	—	—	—	—	—
2.	Penumarru	—	—	—	—	—	—	—	—	—	—	—	—
3.	Mutthumuru	—	—	—	—	—	—	—	—	—	—	—	—
4.	Kotturu	—	—	—	—	—	—	—	—	—	—	—	—
5.	B.Kothapalli	—	—	—	—	—	—	—	—	—	—	—	—
6.	Dasireddipalli	—	—	—	—	—	—	—	—	—	—	—	—
7.	Umadandi swaram	—	—	—	—	—	—	—	—	—	—	—	—
8.	Yanamadupalli	—	—	—	—	—	—	—	—	—	—	—	—
9.	Chintapalli	—	—	—	—	—	—	—	—	—	—	—	—
10.	Bodapadu	—	—	—	—	—	—	—	—	—	—	—	—
11.													
12.													
13.													
14.													
15.													
16.	Vallurupalli (A)	4,013	4,013	4,013	—	—	—	3,639	3,639	3,519	—	—	—
17.	Westwipparru (A)	15,748	16,649	15,677	—	—	—	15,704	16,594	15,338	—	—	—
18.	Moumjipadu (A)	5,129	5,129	4,689	—	—	—	4,729	5,129	4,412	—	—	—
19.	Ramachandrapuram(D) H/o.Meenavalleru.	5,597	5,041	6,122	—	—	—	577	5,041	668	—	—	—
20.	Alampuram (A)	32,600	42,931	34,109	6415	8,846	7,496	32,466	42,931	30,414	6,415	8,846	7,496
21.	Parimella (A)	6,532	5,012	6,204	1192	1192	1192	6,232	5,012	6,204	1192	1192	1192
22.	Prathipadu.(A)	1,08,560	1,04,993	1,04,647	—	—	—	1,02,415	1,03,412	1,03,988	—	—	11,215

5.4 VILLAGE LEVEL ACTIVITIES:

The Gram Panchayat is the local government and it has a President - the Sarpanch and members from every ward of the village. Every Gram Panchayat has also 2 to 3 women members. The notified Gram Panchayats have regular meetings and the non-notified Gram Panchayats do not generally have regular meetings. The women members generally do not attend meetings unless they are specically summoned when a weighty matter is to be discussed.

The Government agencies reaching the village are;

1. The Health Department - MPH.
2. The Mandal Office - Village Development Officer
3. The Women and Child Welfare Department - the Woman Development Officer.
4. The Mandal Engineer(if works are to be taken up or in progress in the village).
5. School Teachers.

In the village there are also Mahila Mandals/Youth Organisations/Village Committee for "common good fund" and other groups.

There is very little co-ordination between the Government agencies, the Gram Panchayat Members the non-Governmental organisations like the Mahila Mandal in the villages.

Mahila Mandals/Youth Clubs in the villages is given below.

Sl. No.	Name of Village	Mahila Mandal	Youth Club	Remarks
1.	Pentapadu	MM	YC	Active
2.	Paramilla	MM	-	MM dormant
3.	K.Pentapadu	MM	NIL	,,
4.	W.Wipparru	MM	NIL	,,
5.	Mudunuru	NIL	NIL	--
6.	Mounijipadu	MM	YC	MM Sewing
7.	Meenavallur	MM	NIL	Sewing.
8.	Alumpuram	MM	YC	Both active
9.	Korumilli	MM	NIL	Sewing
10.	Racherla	NIL	NIL	--

CHAPTER-VI

Management and Administration of Women Welfare(please see VLWM study Nalgonda district) P.32

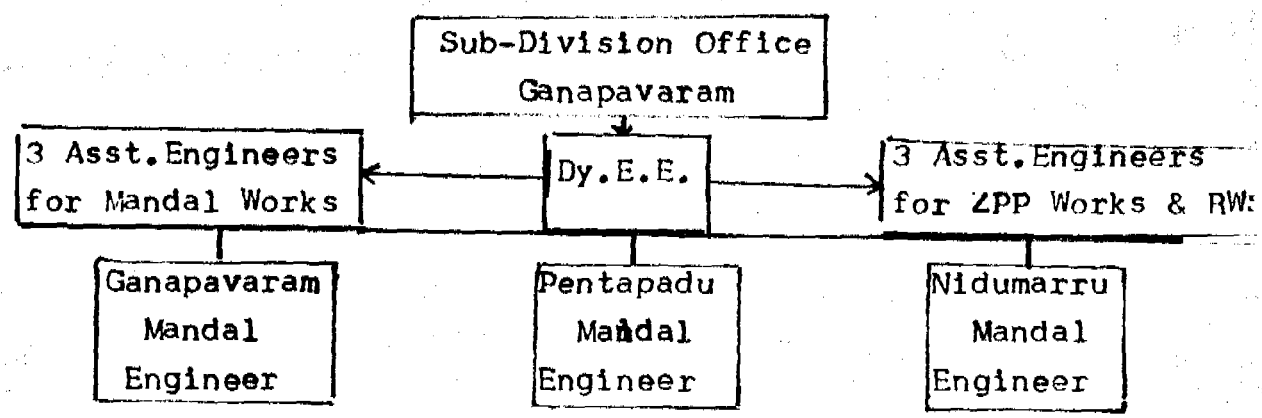
In West Godavari district, there are 36 Woman Village Development Officers and 8 Mukhia Sevikas working. They are in contact with the Mahila Mandals in the different villages. Our discussions with the District Director of women welfare department indicated that the Department would welcome women's (Mahila Mandal) involvement in village water supply programmes. The Director is willing to experiment in some villages by getting women involved and gradually take responsibility for operation/maintenance of the village water supply scheme.

CHAPTER - VII

MANAGEMENT AND ADMINISTRATION OF RURAL WATER SUPPLY AT MANDAL LEVEL

7.1 P.R.E.D. SET UP

The Pentapadu Mandal belongs to the Eluru Division Ganapavaram Sub-division. At the sub-division office the set up is:-



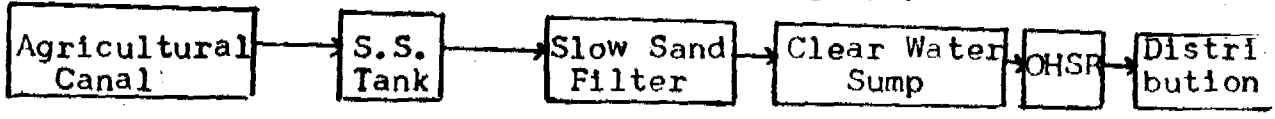
The Assistant Engineer incharge of Zilla Praja Parishad works is also responsible for Rural Water Supply. This Assistant Engineer is not co-ordinated with the Mandal Administration and hence at Mandal Level the Mandal Development Officer dognot feel the responsibility for water supply in the villages.

7.2 TECHNOLOGY:

The Mandal has surface water sources. The ground water is generally brackish below 50 ft. Shallow bore wells on the side of canals and tanks in some villages yield potable water (Exg. B.Kondepadu).

The traditional source of Drinking Water is the village tank. Which is connected to the agricultural canal. Most of these tanks get water from canal by gravity, though some of them are filled by pumping (Exg. Pratipadu).

The technology adopted for providing safe drinking water by the Panchayat Raj Engineering Department is to filter the water in the village summer storage tanks with slow sand filters, collect the filtered water in sump and pump it into a O.H.S.R. for distribution to the village population.



The following table shows the situation of the villages

Name of the Village	Distance from Ag. canal to SS Tank	Method of Raw Water collection	Type of filter	Capacity of OHSR
1.	2.	3.	4.	5.
Pentapadu	½ KM	Pumping	Slow Sand Filters	2,00,000 Lts.
Muddunur	3 KM	Pumping	"	40,000 "
Paramilla	100 Mts.	By gravity	"	60,000 "
K.Pentapadu	100 Mts.	"	"	60,000 "
W.Wipparu	100 Mts.	"	"	2,00,000 "
Racherla	100 Mts.	"	"	60,000 "
Alumpura	100 Mts.	"	S.S +MECHANICAL "	60,000 "
Ravipadu	100 Mts.	"		40,000 "
Meenavalluru	¼ KM+BW & Motor	Gravity & pumping	"	60,000 "
Korrumilli	¼ KM	Gravity	"	40,000 "
Prathipadu	¼ KM	Gravity & pumping	"	60,000 "
Mounjipadu	1 KM	Gravity	"	20,000 "
Dasiparru	100 Mts.	"	"	90,000 "
Umamaheswaram	100 Mts.	"	"	20,000 "

...

THE SUMMER STORAGE TANK:

The Summer Storage Tank is either fenced off or a watchman appointed by Gram Panchayat to protect it from cattle or trespassers. People get into it to draw water. The water from the S.S. tank is pumped into the slow sand filters.

The quality of water is dependent on
(1) Quality of canal water - (Turbidity)
(2) Condition of filter bed
(3) Chlorination

for about 6 months - July to January the canal water is highly turbid and the sedimentation in the S.S. tank does not reduce the turbidity appreciably. This results in the S.S. filters getting choked too often - Frequent replacement of sand and less production of filtered water. A typical case is Mounjipadu Scheme.

The sand used in filters often is not graded. The sand is too fine (small size). This together with seasonal high turbidity - often choke the filters and leads to frequent scraping and sand replacement. As such there is no sufficient time for ripening of the filters. Most filters do not have the vital layer (SCHUMDECK) essential for the efficiency of S.S. filters.

Chlorination is done by mixing bleaching powder in a bucket and pouring the solution in the V-notch or clear water sump. In no scheme residual chlori-ne is measured. These are summarised below:

....

Sl. No.	Name of the village	Status of SS filter	Chlorination	Chloro-scope	Water tested when
1.	2.	3.	4.	5.	6.
1.	Pentapadu	Functioning	Regular	Nil	Nil
2.	Mudunnur	Functioning	Not Regular	"	"
3.	Paramilla	Not Functioning	"	"	"
4.	K.Pentapadu	Functioning	"	"	"
5.	W.Wipparu	Functioning	Not regular By bucket	"	"
6.	Racherla	Not Functioning	"	"	"
7.	Alumpuram	Functioning	"	"	"
8.	Ravipadu	Functioning	Not regular	"	"
9.	Meenavalluru	Filter not ready B.W. water used	"	"	"
10.	Korumilli	Functioning	"	"	"
11.	Prathipadu	No sand in filter	"	"	"
12.	Mounjipadu	Functioning often choking	"	"	"
13.	Umamahe-swaram	Not commissioned			
14.	Darsiparri	Not commissioned			

The quantity of water supplied depends on the duration of supply (other factors remaining the same). The duration depends on:

(1) The capacity of OHSR
(2) The No. of distribution points
(3) The capacity of motors - (Simultaneous pumping during distribution)

If the distribution starts with OHSR full and with simultaneous pumping during distribution. Then the quantity of water distributed will be:

...

Capacity of OHSR + Capacity of OHSR divided by the time taken to fill the O.H.S.R. multiplied by time taken for distribution.

In most schemes 7.5 HP motor is used to fill the OHSR (5 HP motor to lift water from SS tank to SS filter).

The duration of water supply in different villages, the total quantity supplied and LPCD is shown below:

X - duration of distribution the following table given the details:

Sl. No.	Name of the village	Capacity of OHSR (LITS)	Time taken to fill O.H.S.R.	Duration of distribution	Total water distributed (LITS)	LPCD
1.	2.	3.	4.	5.	6.	7.
1.	Pentapadu	200,000	3½ Hrs.	20+20 Mts.	220,000	18.5 Not
2.	Muddunuru	40,000	2 Hrs.	1+1 Hrs.	60,000	28.3
3.	Paramilla	60,000	6+1 Hrs.	2+2 Hrs.	80,000	35.2 NN
4.	K.Pentapadu	60,000	4 Hrs.	3+3 Hrs.	105,000	35.7 NN
5.	W.Wipparu	200,000	4 Hrs.	1+1 Hrs.	250,000	-52.9 not
6.	Racherla	60,000	2 Hrs.	1+1 Hrs.	90,000	36.2
7.	Alamapuram	60,000	2 Hrs. SSF 7 Hrs. meh.R	1+1 Hrs.	90,000	-20.3 not
8.	Ravipadu	40,000	NO DISTRIBUTION SYSTEM			
9.	Meenavalluru	60,000	OHSR closing value out of order	1 Hr.	-	
10.	Korumilli	40,000	3/4 Hrs.	45+45 Mts.	80,000	59.5
11.	Prathipadu	60,000	2½ Hrs.	45+45 Mts.	78,000	-22.3 not
12.	Mounjipadu	20,000	2 Hrs.	2+2 Hrs.	40,000	38.0 NN

$\bar{X}$ =

...

The 1981 population figures are used in calculating LPCD. The present LPCD will be lower than these as the population has increased. In W.Wipparu and Korumilli more than the required amount is given. The lowest is 18.5 LPCD in Pentapadu.

The problem seems to be not in the total quantity of water distributed but in unequal distribution between house connections and PSPS.

7.3 HOUSE CONNECTIONS:

After a P.W.S. schemes is committed to a contractor (tender) he approach the Sarpanch of that village and appeals for a some contribution from the village to make up for his "loss" in executing the scheme. If this contribution is not made there could be inordinate delay in starting the construction. The Sarpanch collects from the better-off farmers the required amount with the understanding that, they will be given a house connection. Thus the house connections are sold in advance before construction starts. The contractor is now obliged to give the house connections before officially commissioning the scheme. The PSPS will be created later on and there may not be enough finance for all the required PSPS. The following table shows the No. of house connections and PSPS, and tariff and down payment for the different villages.

...

Sl. No.	Villages with PWS completed	Populations 1981	Approximately No.of families pop/5	No.of PSP	No.of house connection	Remarks
1.	Pentapadu	11887	2377	55	600	
2.	Muddunuru	2116	423	18	112	
3.	Paramilla	2272	454	22	132	
4.	K.Pentapadu	2936	587	12	50	
5.	W.Wipparu	4725	945	12	100	
6.	Racherla	2481	496	24	27	
7.	Alumpuram	4427	885	43	245	
8.	Ravipadu	2911	582	17	75	
9.	Meenavalluru	3489	698	9	70	
10.	Korumilli	1343	268	10	120	
11.	Prathipadu	3487	697	19	144	
12.	Darsiparru	3321	664	-	-	Not commissioned
13.	Mounjipadu	1050	210	14	86	
14.	Umamaheswaram	1029	206	-	-	Not commissioned
			9492	255	1761	

Some of the Gram Panchayats have hamlets/ colonies outside the village boundary where water supply is not reaching. Lack of finance is the reason given for this. The following is a list of such villages with hamlets, distance from main village and No. of families involved.

Sl. No.	Name of the Gram Panchayt (with PWS)	Name of the hamlet	Distance from main villages	No.of families	PWS coverage
1.	K.Pentapadu	Muthapuram	1 KM	25	Not covered
2.	W.Wipperu	1.Odderugudem	1 KM	60	"
		2.Upperugudem	1/2 KM	40	"
3.	Muddunuru	Alundethipeta	1 KM	40	"
4.	Pratipadu	Kakularupadu	1 KM	150	"
5.	Ravipadu	S.C.Colony	2 KM	50	"
				365 = 11%	

total no. hhs 3234

7.4 BREAK DOWNS:

Some of the schemes have already faced major break down like burning of motors. The local Gram Panchayats' have repaired the motors. The following table shows the break down and time taken to repair/resume water supply in the last year.

Sl. No.	Name of the G.P.s	Cause of break down	Time taken to repair
1.	Paramilla	Motor burnt	15 days
2.	W.Wipparu	"	15 days
3.	Mounjipadu	"	7 days
4.	Muddunuru	"	2 days
5.	Alumpuram	"	7 days

$\bar{x}$ = 9 days

7.5 BYE-LAWS:

Some Gram Panchayats have adopted laws for water supply. Model bye-laws are available with the District Panchayat Officer. The bye laws can clearly lay down terms and conditions for water supply - especially with regard to house connections. This will act as a preventive measure for abuses like using split pumps, lowering level of the distribution point by digging pits, using of hand pumps on the distribution point and wastage of water, the following chart gives villages, adoption of by laws - existing abuses.

...

Sl. No.	Name of the village with P.W.S.	Existence of bye-laws	Abuses
1.	2.	3.	4.
1.	Pentapadu	Adopted	PSP in pits
2.	Paramilla	nil	-
3.	K.Pentapadu	Adopted	-
4.	W.Wipperu	Adopted	-
5.	Mounjipadu	nil	House connection in pits
6.	Muddunuru	Adopted	-
7.	Meenavallur	nil	-
8.	Korumillai	nil	-
9.	Alumpuram	nil	Split pumps hand pumps-pits on house connection
10.	Racherla	Adopted	-
11.	Pratipadu	Adopted	-
12.	Ravipadu	-	-

7.6 HANDING OVER PROCEDURE:

The study team did not come accross any handing over document while discussing with the Gram Panchayats only in one case (Meenavalluru) the Sarpanch expressed difficulty in taking over due to certain draw backs in the construction.

7.7 OPERATION MAINTENANCE PRACTICE:

There are no established operation Maintenance practices, each Gram Panchayat appoints an operator (often the tank watchman takes over - or the village helper to the electricity line man) and he develops his own style of functioning. His main duties are

(1) Take care of S.S. Tank
(2) Pump water to the S.S. filter
(3) Pumps water to the O.H.S.R.
(4) Release valves for distribution

For sand replacement extra labour is often hired. There is no training given for the operator.

The VLWM study team also visited PWS Schemes at:

(1) Darsiparru
(2) Umamaheswaram

and 2 villages without PWS Schemes:

(1) B.Kondepadu
(2) Ramachandrapuram

The P.W.S. schemes at DARSIPARRU and UMAMAHESWARAM are completed and not commissioned due to delay in electricity connection. The electricity board is demanding that an amount of be deposited in their account. There is a dispute, whether this amount is to be paid by the Gram Panchayat or by Panchayat Raj Engineering Department.

The villages, B.Kondepadu and Ramachandrapuram depend on village tanks and shallow bore wells for their drinking water. The Gram Panchayat is maintaining the hand pumps of the filter points. The No. of hand pumps and their condition is given below:

Sl. No.	Name of the village	Population	No.of H.P.	No.of H.P. working	No.H.P. not working
1.	Umamaheswaram	1029	12	9	3
2.	B.Kondepadu	2595	16	14	2
	Other villages with PWS Schemes and H.P.				
3.	Pentapadu	11887	10	10	-
4.	W.Wipparu	5779	3	nil	3
5.	Meenavallur	3489	10	nil	10
6.	Alumpuram	4427	6 salty	6	nil
7.	Prathipadu	3487	10	nil	10
8.	Ravipadu	2911	5	5	nil
			72	21 = 29%	

In the two villages without PWS Schemes these bore wells are highly appreciated by the people. Most of the people drink water from the hand pumps. These are located on the sides of canals or drainages and the technical opinion is that since they are shallow, nitrates from fertilizer or night soil will infiltrate into the water. Hence, they are not very safe. In Meenavallur there is a 6" B.W. with submerssible motor feeding the OHSR. As the sand filters are not commissioned, the B.W. water is supplied to the village. The B.W. is 60 ft. deep - hence considered safe.

8. Technical Assessment of O&M in Mandal Studied.

8.1 Services provided and capital cost.

This Pentapadu Mandal villages are fed by the surface water drawn from the River Godavary, through canals, channels and village tanks both for irrigation and drinking water purposes. In fact all the villages of the West Godavari District which are situated to the South of the Eluru canal that run from the River Godavari at Vijjeswaram to Eluru up to the sea coast is fed by the Godavari and its tributories for their water requirement where as all the villages situated North of the above canal, depend on the rainfed tanks and bore wells for their requirement of water.

So, the water of the River Godavari is the only source for the drinking water requirements of the villages of Pentapadu Mandal. The river water carries heavy turbidity during rainy season. The traditional sources for drinking water of the villages are in village tanks which are fed by the river water through canals etc. These tanks serve as Summer storage tanks also to meet the drinking water requirements both for human & cattle population during the canal closure period. For P.W.S. Scheme one of the tanks are reserved and these tanks are not only impounding the required quantity of water but also serve for the preliminary plain sedimentation. By this, the load gets lightened on the subsequent process of filtration (i.e. on slow sand filters etc.) The River/Canal water as drawn to the village tanks, is getting polluted mainly due to the Molasis of the Chagallu Sugar factory situated at the Head of the Canal. Added to this all the canal banks in the village limits are occupied by the public with dwellings and Dhobighats throughing all the sewerage into the canal and making the water unsafe.

So also some of the village tanks are served for the cattle for their drinking and cleaning purposes. But, of late in enthusiasm to earn money for the village requirements, the tanks are leased out, for 3 years at a time, for fish rearing and irrigation for commercial purpose, and the water of these tanks is getting polluted due to the feed applied for the fish growth.

The distributories, channels and the lead of drain to the tanks are often subjected to field surplus also especially during rainy season. The field surpluses, drained into the water courses since contains chemical pollution of the crop manures and fertilisers, the plain sedimentation and simple filtration has become out of question and hence to ensure potability bactereological and chemical treatment has become quite essential.

Further, the cattle population is made to depend on the village PWS Scheme at the Ryots are not allowing their cattle to village tanks for fear of adverse affect on them and therefore they are inclined for the water from the PWS Scheme. This is creating increased load on the system of distribution ment for the people consumption only, and not designed for the cattle. Polluting the waters this way is criminal and requires sterneous action by the authorotie concerned or by getting a legislation if need be.

The ground water in this area (almost all the delta area) though potential, is not potable due to brackishness of water even at little depths and therefore the public depend on surface water impounded in the tanks.

All the PWS Schemes in this Nandal are provided with slow sand filters, OHSR, and distribution net-work covering almost entire main village.

The habitations which are situated at a higher are short of full coverage under the village schemes due to pressure drop to extension of pipes to these localities.

The capital costs of the schemes are as follows:

Pentapadu	
Parimella	3,12,000
K.Pentapadu	5,87,000
West Vipparru	
Nougipadu	2,00,000
Nudunuru	
Punavallum	5,95,000
Korumitti	
Ravipadu	
Prattipadu	
Alampuram	
Racherla	
Chintapalli	
Parisiparru	
B.Ponnepadu	
Ramachandrapuram.	

8.2 Actual performance as against planned performance and Reasons.

According to the design parameters, with which the schemes have been executed, the water should be made for drinking and supplied at 40 litres per capita per day and for 8 hours in a day and for which 16 hours of pumping to the filters and the same period of pumping to the OHSR has been contemplated. The capacity of the OHSRs and filters are satisfying the design norms. According to this the pumping is in two shifts, morning and evening for 8 hours each. The first 8 hours is for filling to the OHSR, which is normally 4 lakhs, to the daily demand, and the later 8 hours is to meet the distribution from the OHSR (ie.,) pumping is for 8 hours and distribution is for 4 hours in each shift.

In practice, these Parameters are not realised. Please see the statement at page 36 it reveals that the pumping is limited to not more than 8 hours and the distribution ranges from 40 minuts to 4 hours only depending on the population and water requirement of the villages. The distribution period is though very short, the Public have not expressed any disatisfaction but pleaded for some more period of delivery to easen the rush at the stand-posts. Their requests appears to be reasonable and requires due consideration. This can be sorted out by providing double taps at every stand-posts, by increasing the diametre of the service pipes to 20 mm diameter instead of 12 mm pipe provided. It is also required that the service pipe to the Public stand-post should be of 20 mm dia to deliver 20 liters in a minute as against 12 mm which delivers only 6 liters per minute (Please see the calculation attached.) The residual head now considered in designing is only 6 meters on the ground level. The height of the stand-post and plat-form height if deducted, the residual head would be only 4.5 meters on the tap delivery point and this does not give the discharge of 20 liters required of. So for design of pipes it is required the minimum residual head of 6.0 meters over the tap delivery point + height of 2.0 meters for stand-post with dual plat-form, makes upto 8.0 meters. In addition the loss of head in service pipe should also be added as the stand-posts, are away to the supply mains by about 10 meters minimum to 30 meters maximum. This aspect needs be taken into consideration and change the Parameter with regards to the minimum residual head. So also the arrangement of public stand-post which dual plat-form, as appended may be considered as it reduces the rush and tension at the stand-posts during pead period.

Discharge through taps of Public Stand Pipes.

Taken Public Stand Pipe - Shared Service for a Population of 250 Persons at 40 lpcd to deliver in 8 hours.

(a) $\frac{250 \times 40}{8 \times 60} = 20.83$ lpm.

or 0.35 lps.

$= 0.00035$ Cubics

Residual Head available at the tap tops ~~is 6.0 metres~~ } 6.00 metres

Deduct Losses due to fittings and height of Stand Pipes

Height of Platform of PSP: 0.45
" " PSP 1.20
Loss of head for 2 elbows 0.60
" " " Female 0.60
2.85 2.85
3.15 metres.

Head available

Length of Service Pipe - Say 10.00 mts
Stand Pipe height 1.65
11.65 or say 12.0 mts

So $\frac{4 \times 0.01 \times 12}{2 \times 9.81 \times d} \times \left(\frac{Q}{A}\right)^2 = 3.15$

$\frac{Q^2}{A^2 d} = \frac{3.15 \times 2 \times 9.81}{4 \times 0.01 \times 12}$

$\frac{Q^2}{0.785^2 \times d^5} = 128.75$

$\frac{Q^2}{d^5} = 128.75 \times 0.56$

$= 72.42$

for $d = 12$mm: $Q = \sqrt{72.42 \times 0.012^5}$

$= 1.342 \times 10^{-4} = 1.342 \times 10^{-4}$

$= 0.000134$ Cumecs.

$= 0.1342$ Ltrs/Sec.

$= 8.05$ Ltrs/Minute

for 20mm $Q = \sqrt{72.42 \times 0.02^5}$

$= 0.00048$ Cumecs

$= 0.48$ Ltrs/Sec.

$= 28.8$ Ltrs/Minute

OBSERVED DATA SUPPLY OF FINE SAND AND COURSE SAND FOR SLOW SAND FILTERS FOR CPWS TO CHINNAMARUR AND 35 OTHER VILLAGES OF GUDEM N.A.P. DIVISION KOLLLAPUR.

Observations are made in the presence of Executive Engineer N.A.P. Kollapur.

Place of Quarry: Buggavagu at Kommireddypally on NH7

Total lead from site 90 KM

Quantity of sand collected 88.50 Cft. (2.50Cum)

No. of labour engaged

Man Mazdoor 1 No.

Woman Mazdoor 4 Nos.

Time: 10AM to 6.30 PM on 7.6.1989.

A Quantity of Raw Sand of 2.50Cum (88.50cft) was collected and was allowed to dry with the help of labour for screening for four times, two times to get course sand of grain size 1.00-1.4 mm and two times to get fine sand of grain xxxd size 0.2-0.8mm 0.3mm

a) Quantity of sand passed through 1.4mm size seive out of screened Qty. of 2.5Cum (88.50cft) = 1.683cum (59.50cft)

b) Quantity of sand retained on 0.9mm size seive out of screened Quantityof $\frac{1.683\text{cum}}{(59.50\text{cft})} = \frac{0.283\text{cum}}{(10\text{cft.})}$

i.e Quantity of course sand collected = 0.283 cum

c) Quantity of sand passed through 0.3mm size seive out of screened Quty. $\frac{1.40\text{cum}}{(49.50\text{cft})} = \frac{0.113\text{ cum}}{(4\text{ cft})}$

d) Quantity of sand retained on 0.1 cum size seive out of screened Quty 0.113cum = 0.113cum

XQty.of use ful sand = course snad + fine sand

1-1.4mm 0.2-0.3mm

= 0.283+0.113 = 0.396cum

Amount involved for collection of 0.396 cum useful snad i.e 5 Nos Manmazdoors and Woman Mazdoors @ Rs.14/each rs. 70/-

cost of fine xxxd and course sand = $\frac{70}{0.396}$ = 176.76 cm

Hence initial cost of both fine xxx sand and course snad may kindly be approved at Rs.176/- per cubic metre.

Sd-
A.E.E.
N.A.P. Gudem.

Sd-
Dy. Executive Engrs.
N.A.P. Gudem.

8/6
EXECUTIVE ENGINEER,
PR.N.A.P. KOLLAPUR.
8/6/89

The plat-forms at different heights may eliminate unnecessary lifting. It is observed that the stand-posts at the tail end is not getting enough water with pressure and there by the beneficiaries are indulging in removing the post and sprout and digging pits to the underground pipe level and trying to collect water from it. This is causing contamination to the flow of the water in the pipe due to back siphonage of polluted water from the pit with the fall of pressure in the supply main pipe. The reason for the pressure in the supply main is evidently due to House Service Connections given indiscreminately on the line and also the indulgence by the house holds in digging the pits to the level of the supply main to tap more water .

The Alampuram Panchayat is supplying water to poultry Farm also and the supply is not metered and therefore every scope of drawing water excessively. So also the Prathiapdu Panchayat is supplying water to certain factories for their needs.

As regards the quality aspect the surface water impounded in a tank is the source for the water supply schemes, and therefore these tanks should be well protected without any access for the people. In case of breakdon of the PWS scheme, it is necessary to provide facility to draw water from these tanks and for that small dia draw wells at convenient places may be provided adjoining the tankbund to draw water from the bund top itself. This arrangement prevents polluting the tank water by the public. The capacity of the tanks should also be increased to hold atleast 6 months requirements. It enables for plain sedimentation as by keeping the standing water for longer periods. The solids get settled. The raw water is since with pollution, [illegible]

back siphonage of the contaminated water through leaks, chlorination is a must but this aspect is not given a serious thought and proper arrangement to get the require chlorine mixed to the water is not done at all. It is informed by the Department that arrangements are being made to fix chlorination in persuance of the instructictions of the Chief Engineer, some of them have already been received and fixing them in place position will be done very shortly. However, it should be ensured the regular chlorination is carried out and tested daily as to the residual chlorine. It is also necessary that whole system of distribution is disinfected at the time of commissioning of the scheme and also once an year atleast and for every time whenever any damage or leak of the pipe is repaired.

It is observed that the distribution of water is not at all regulated. The sluice valves provided to regulate the flow to various lines, are not operated resulting in excessive flow to the lowlying places and depriving the pressure on high areas. It is also noticed that the valve chambers are burried under the roads as if there is not purpose with them and for this the department should be blamed for allowing raising of the road over valves and not operating them to regulate the flow.

8.3 Adequacy of services: Quantity/regularity/convenience/ user satisfaction/level of utilisation/traditional sources.

The traditional sources are canals and tanks fed by the River water. These sources are getting contaminated for some reason or other as detailed supra, the Public now depend on the piped water

supply schemes, not only for their drinking but also for washing cloths and even for the cattle. So the adequacy of service is not at all satisfactory, though the user did not reveal it openly. The duration of supply through PSP is very very little and thereby all the families do not get equitable share of water but this is not felt by them as the house holds which got service connection to their houses are oblising their neighbours to take water from their taps since the supply is not metered. So, people dissatisfaction for not getting adequate water could not be assessed. The users are under the impression that, the water supplied through taps must be safe, without verifying whether or not the water has been treated properly. They see only the difference in colour for the water and it is enough for them if water appears clear, to take it whole same. But in reality, as observed, chemical treatment is much wanting and the filtration is not so effective.

Due to private house connections short duration of supply through public stand-posts is gven, resulting in not bringing out the public from using the traditional source, howsoever polluted, it is, to meet their house hold requirements. Was enquired as to the timings and adequacy of supply, the public say, it would be more convenient to them if the supply is made available all through the day or atleast from morning 5^{o} Clock 9^{o}clock and in this evening 5^{o}clock to 9^{o}clock as it would help them, from standing in ques for their turn and also unnecessary storing of water excess of their requirement.

This requires carefull study, as supplying it to as short period has no reason, when the distribution is supposed to be for 4 hours in the morning and 4 hours in the evening, when 4 tanks full of water is made available. If the pumping to the OHSR is short, the duration of supply may very propertionably. As verified by us, the excess consumption by the Private House Connections and wastage of water through leakages is only the reason, for exhausting the supply in short period. This aspect is got to be verified and checked, wastage of water through leakages in pipes and spillage at the tamp points upto maximum 20% could any way be there and the wastage beyond the above percentage is atributable to the illegal drawal of water by the private house hold connections. This can be detected if the sluice valves provided at every junction of the distribution pipes are properly operated and the valve are opened to the extent of discharge required for that line.

In view of the surface water getting polluted, time has come, to necessarly take into consideration for cattle population also for drinking water purposes and norms refixed for Rural water supply projects or the tanks hither to used for cattle should be restored to the cattle and they are protected from the fish feed as it is polluting drinking water of the tank. The fish may be left free to grow in their natural way in the tanks. These may be revenue reduction in auction sales but there would be reduction of load on public water supply.

Out study reveal that the public feel convinent with the protected water supply for the reason of avoiding fetching of water from a distance and

eliminate the necessity of engaging labour at heavy cost. It is also revealed that there were occations for them, especially in summer months to purchase water from the vendor and this expenditure is saved of due to the PWS Scheme. But the whole someness of water is realised by the affluent section of the society only and not by the non affluent class. So, the non affluent class should be educated in this aspect to realise the importance of drinking potable water.

4 Functioning and maintenance of Hand Pumps.

There are no bore well hand pumps provided in this area as the ground water is not potable. Some villages have filter point hand pumps. They are shallow in depth by maximum 10 metres. There filter point hand pumps have been provided to mitigate during the scarcity periods. But these type of wells cannot be provided in all the villages due to brakishness of the sub soil water. Even in the areas where this filter point hand pumps are provded the water in drawn from the sub soil, which is accessable for pollution of nitrates.

Ramachandrapuram is one of the village, where the village is fed by these shallow filter point bore wells. The people are satsified in this system even though Mini PWS Scheme is sanctioned to them to bring them potable water from distance. It is enough to the village if some more filter point bore wells are provided at convenient places, but hygenic point of view it is not advisable as the soil water is subjected to pollution from the ground, more so when the village is surrounded by the agriculture fields. These filter points are also not permanent as they will have to be changed for every 2 to 3 years due to reduction in the yield from the bore and rusting of suction pipe and wear of the pump head .

So, since the village is small, the MWS Schemes as sanctioned, is only the way to ensure potable water to the public.

As enquired, as to the functioning of hand pump bore wells which are in upland area, it is given to understand, that there is 3 type system in operation with one Dy.Executive Engineer (I&S) to look after the entire district with 2 mobile teams for major repairs of the hand pumps. Each Mobile team connects of (1) Driver -1, (2) Cleaner -1,(3) Mechanic -1, (4) Mechanical Helpers -2 and (5) Mason -1, and for minor repairs the local sub-divisions are taking care of.

Hand pumps are situated in two division areas only (oe.,, Eluru and Kovvuru division,s where as, the their division (ie.,) Narsapur, do not have any bore wells as the area depend on surface water only.

There are 1019 bore well hand pumps in Eluru division area and they are 8 regular mechanics and and 11 NMR mechanics to attend on repairs to pumps. Their salaries and cost of spares are met by the State. There is no matching recovery from the Gram Panchayats for the maintenance of the hand pumps, where as in the other Telangana Districts recovery is made from the Panchayats. There is no scope for this Committee to study the functioning and maintenance of hand pumps, since they are situated in the other sub-divisions. However, as enquiries reveal there is no systematic record maintained either in section office or Mandal office to know the working of the hand pumps, the expenses for for spare parts, the number of bore wells condemned for some reason or other (viz) pump pipes stuckup in the bore and therefore bore becomes useless, collapsing of bore etc., It is better some inventory of bore wells functioning is maintained. The following proforma may be considered to know the history of hand pump.

P R O F O R M A

Register of History of hand pumps

Name of the village/Gram Panchayat

Locality — Pump No.

Type of Hand pump — Date of errection

Depth of the bore well

Statis water level. — Length of suction pipe.

Sl No.	Date of Repairs.	Spare parts changed.	Cost of spare part: Quantity.	Rate.	Amount	Remarks.
						(if the bore/ pump is condemned it may be indicated if they are substituted.

8.5 Functioning and maintenance of piped systems:

All the PWS Schemes are not functioning to the expected norms for the quality and adequacy of supply for want of required finances. The maintenance also is not effective for want of personnel to attend on timely repairs.

Regular chlorination is not done with the required bleaching powder. The ordinary bleaching powder, which is more common in this market contains about 25% to 30% of chlorine and this is quite unstable and looses strength during the storage and its exposer to the sun and light. The water should be tested to fix-up the dosage of the chlorine and not on prorata basis for the quantity of water to be treated. There must be ½ an hour contact period for the chlorine and adequate chlorine is required to be mixed to get 0.1 0.2% of the residual chlorine. The practice is to mix the chlorine in the clear water sump for some schemes and in the OHSR in some other schemes. This is not effective as, in either of the case, there is not much contact period. Better to go in for automatic enjector modal appearaters which are now available in the market. It can be fixed in the pump house, to the raising main. By this arrangement, the chlorination with the required chlrine quantity but also gaining sufficient contact period. Better to go in for autometic enjector modal apparatus which now available in the market and fix it in the pump house to the raising main so that chlorination gets done not only to the required strength, but it enables sufficient contact period before discharge takes place at the tap point. The bleaching powder required for annum should be calculated and indicated in the annual maintenance estimate well in advance, and connunicated to the Gram Panchayats to get Administrative approval.

There is much t say about the filter media sand of the filters. The sand used is short of the required specification. The contractor, it appears, is guided by the rates given for collection of sand and screening, in the approved data of the department. According to the data, it is enough screening is done once to get the required specification. But it is not so easy to get the sand required specification. As observed elsewhere in Mahaboobnagar district screening is required for 4 times and the recovery is only 20%. The recovery may vary a little from quary to quary. But, unless 5 times of the quantity required is collected and 4 times seived to the specification. The estimate should provide for it the field officers should find out by test, the percentage of recovery that may be possible to get; before indicating the quary in the estimate. The contractor will also learn the process involved to get the material of the given specification. This aspect needs consideration. A copy of the observed data is enclosed to learn about the percentage of recovery.

As observed effective filteration is not done. The sand filter media is disturbed whenever choking of sand has taken places and whenever reduction in the rate of filtration is noticed. The top layer for about 1½ Cm should be scraped and then sand is renewed to that extent. This way the sand media can be scraped for about 30 Cm depth before the sand is replaced with fresh sand or with the sand washed out. In no situation the media should be disturbed, whereas, as observed the entire filter media is disturbed and replaced with fresh sand. This action should be discouraged as it is not only expensive but also kills the micro-organisms which help for formation of a film over the surface and by which the Pathogenic bacteria is killed while filtering the water.

Presently slow sand filters are in vogue. Though they are easy to operate best expensive in maintenance. For rural water supply, especially for non-notified Panchayats, it is enough pressure filters are provided as they do not require much filter media and back washing periodically at short intervels is possible without replaceing the sand. Besides much labour is not required as these is no scraping etc., operations. One pump operator can handle every this required for the back washing. The only difficulty with pressure filters is it is not effective in removing the high turbidity. In water supply schemes with furface water like the schemes in Pentapadu mandal the canal water is not directly pumped to the filters. There is S.F.Tank to improved the canal water and by which plain sedimentatio takes place in it before this water is pumped to the filters. The same holds good for mechanical filters. In audition, the mechanical filter unit consists of a seperate alum mixing arrangement. At the most it requires peridic painting to prevent rusting of the body of the mechanical filter. It is, in fact, a substitute to the Rapid Sand Filters. The conventional rapid sand filters are costly in initial outlay and the maintenance also expensive. Another type of filter, which is in use in Netherlands for small water supplies, is worth trying here. It is called CLARIBLOC filters. It appears, it is not costly in construction and in maintenance. In all aspects it is a Rapid Sand Filter without an OHSR required for back washing. Mr.Kanakachalam, the Dy.Executive Engineer of the Chief engineer's office, has acquired knowledge about it and possassed literature in it, when he had been to Netherlands for a course study on water supply. He may be consulted whether it is possible here to develop that unit with the local materials and with overall less cost compared to the slow sand/rapid sand filters.

If found to be feasible for our circumstances and economic in construction and maintenance, it is worth to try for it.

The slow sand filters now in adoption, declining rate of filterate is considered and thereby more area of filter is provided. The declining rate is taken with the idea of not running the filters continuously to suit to the availability of electricity and to create rest for the pumping plant. In order to attain uniform rate of filtration the water height over the filter media should not very much and so also there should not be any fluctuations in loading the filter. There is another disadvantage that may arrise with the declining of water load. The micro organisms that are required for formation of a film over the media to prevent the bacteria, gets killed for want of water as their servival depends on the Oxizen in the water. Further with the direct pumping it is not possible to maintain uniform rate of flow in loading the filter. It is always safe and easy, the filter is loaded by gravity flow and with no operation of valves by gravity system, the filter runs continuously and hence there is possibility of increasing the pumping hours from the sump to OHSR to meet the demand of increased population or increasing the per capita demand of the users. By continuous flow of filterate, the area of the filter gets reduced and there by the cost of construction of the filter with the savings got due to the reduction of the size of the filter a seperate tank can be constructed to hold atleast one days supply to feed to filter by gravity. Pumping to this one day capacity tank can be done continuously for short period regulating the pumping rate as to our convenience. Besides there will always be a days storage of water in reserve to feed this filters, and therefore any breakdown in pumping does not affect the water supply.

The practice of construction of filters completely over the ground can be changed to affect economy. This proposals may be got examined as it helps in reducing the operation of valves from time to time and maintaining uniformr filtration continuously.

As regards personnel to handle the operations required of, for the PWS Scheme only one semi skilled operator is put on the job with meagre ammoluments. This is the position withall the schemes without exception. The Panchayats, as elicited by us, could not increase the ammolument nor could they employ any staff on full time basis for want of finances on one side and for want of orders of the authority (here this District Panchayat Office) on the other. As far as the water supply os concerned, there should not be any problem as the water is basic need and more so the safe water. It should not be denied to the public even temporarily for want of personnel to operate the schemes. This funds required to maintain the scheme is elsewhere discussed and the resources to generate funds is also indicated.

To run the scheme effectively and efficiently, it is required to employ the following staff as a basic minimum strength for 16 hours of pumping.

1.	Pump operation for 2 shifts.	2	for running the pumps and maintenance them.
2.	Watchman	1	
3.	Filter cum Lineman.	1	

There should be two pump operators of equal grade, so that the two can manage without interruption due to casual leave or sickness leave or holidays and rest. The watchman should work as an assistant to pump operator, and as a sweeper and as a watchman. The filter cum lineman will look after all the pipe lines and fittings and will attend to repairs for which he should be provided, assistance of a casual labour whenever necessary. It is

always desirable to provide quarters to the watchman atleast at the pumping station.

Further, it is desirable to reduce the pumping to 8 hours to be managable with one pump operator only but there should be one reserve operator for some Panchayats together and cost shared to attend on the work of operation in case of absence of the regular operator.

Presently electrical power charges are born by the Government for non-notified Panchayats whereas for notified Panchayats the converned Panchahat should bear the charges. The notified Panchayats are feeling the pinch of the electrical charges since it has become heavy to meet it with their limited resources, and therefore they are cautious in consumption of electrical energy. It is reflected in percapita use of water. Please see the statement at page-36. The usage for these 4 notified Panchayats is 18.5 litres. for Pentapadu, 20.3 litres for West Vipparru, which is an exception since it is newly commissioned scheme and there is no information about the payment of electrical charges. The percapita consumption in minor Panchayats ranges from 28 litres to 60 litres per day. This increase is attributable to the exemption of electrical charges for the minor panchayats. In the manual meeting conveyed on the request of this study team to discuss about the maintenance of the schemes, it has been desired that, the major Panchayats also should be exempted payment of electrical charges on par with the minor Panchayats. The major expenditure in PWS Scheme is for the electrical charges only and such is the position exempitng from payment of electrical charges may not be possible to the Government besides it does not encourage public involvement, which is much required for effective running of the P.W.S. Schemes. In this regard, the the Sarpancha of the Alampur Panchayat, who is also

who is also the acting Mandal President has suggested to subsidise 50% of the electrical cost, as it helps a long way to the Panchayat to attend on other essential civic amenities. This appears to be reasonable only the water supply is limited through public stand posts only But, permitting private house connections is inevitable especially to the villages of notified Panchayats as such villages attain semi urban character in inhabitents standard of living and therefore it is for the Panchayat to find out resources to generate funds required for maintenance. Government may consider the suggestion of the Mandal President, if the Panchayat has no sources of income and the revenue realised from the private house service connections is verified to be inadequate. The same way for the minor Panchayats also as it would help in toning up the public participation in preventing wastage of water and damages caused to the system by the miscreants.

8.6 Internal & external water quality monitoring:

For this purpose, it is not worth while to have a separate wing in the Departments, when there are other Department exclusively attend on quality testing of water. For external monitoring, the P.R. can depend on the soil and water testing labs of the Irrigation Development Board, as they got their net work in every district. For internal monitoring, the Dy.E.E. can be a nodal officer, as his jurisdiction is limited to 2 mandal areas only which may consist about 40 villages. For periodical testing, as to the maintenance of the quality

Contd.. 8:

of the source once tested before commissioning, it is enough a water testing field kit as developed by the Defence Lab, Jodhpur is given for every sub divn. and a work inspector is brained in testing the water with this kit. He would work in the sub-divn. under the Dy.E.E. direct and for eay to day testing of residual chlorine, a chloroscop is given for each of the scheme and the pump operator may be trained to operate the chloroscope with the water testing field kit supplied by the Defence, Laboratory, Jodhpur, the following chemical quality of water can easily be determined at the field itself and the kit is handy to carry by the individual. 1)Desolved solids 2)Chloride 3)Nitrite 4)Nitrate & 5)fluoride. For Bacterialogical test also, this Defence lab has developed and patented.

The section officer should include, in their periodicals, the information about ensuring of potable water and about number of tests conducted on the water tested for drinking purposes in villages. The Dy.Exective engineer should inspect every scheme and functioning of it, every quarter and a periodical sent every month. His sincerity in inspecting the schemes periodically and regularly should be checked before sanctioning his increments.

The A.E. attached to the Mandal will have to verify the house service connections and their proper upkeep. So also public stand posts and the pipe lines. He should furnish the level of functioning of the schmes for the mandal revised and for this there should be an item for this in every review meeting of the Mandal. The Mandal will furnish a copy of the review made by the Mandal about the level of functioning of the drinking water systems of the villages to the Dy.E.E., for his information and for the follow up action if need be.

Contd.. 63..

8.7 Preventive and Corrective maintenance:

Water committee with all the women members of the Panchayat and women members from Mahila Mandal or a social worker and one active male member, headed by the Sarpanch of the Gram Panchayat is required to be formed exclusively to discuss about the functioning of the water supply. This Committee may take notice of any abuse of the system by the public, immediately on occurence and take suitable action.

The pipe fitter/pump operator should make visits along the pipe lines very frequently as not only to detect the leakage but also to serve as a vigil on the miscreants to play with the system. He should also inspect the private premises to find out any indulgence by the house holds to create unhygene condition around the tap etc.

Contd.. 64..

General suggestions:

In the pump room, distribution system maps should be painted on walls. It should show all the streets, water mains and sizes, location of valves stand posts, and location of source of ground level elevated/tanks etc to locate easily any failure in functioning of the system.

2. Daily inspection of the pipe lines by the plubmber/ pump operator cum pipe fitter should be enabled to locate any leaks, damage to public stand posts and pressure drops in public stand posts.

3. The house service connections should be inspected periodically by the pipe fitter and report unlawful actions of the house owner(viz) digging pits to draw more water and acting for back siphonage of contaminated water collected in the pits, to the distribution system.

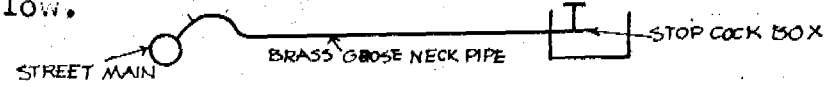
4. To insist on providing private stand posts to the same height, as of public stand posts, with pedastal raised suitsbly to prevent excess flow from the tap.

5. Double public stand posts may be provided and the service pipe to the public stand posts may be of 20mm instead of 12mm presently used and branched off with 2 Nos. of 12mm pipes and fixed 2 Nos. of 12 mm taps to minimise the waiting period in fetching the water.

6. Self closing taps may be provided for all street taps and the same may be insisted even for private taps to help in minimising the wastage of water.

Contd.. 65..

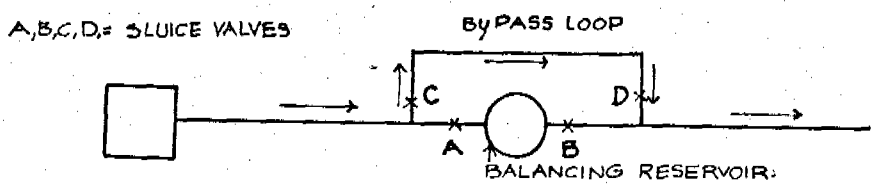
7. Presently, the house service connections are given from the street main with the straight 12 mm GI pipe without goose neck. The service connection should be of goose-neck pipe of copper or brass and there should be stop cock box as shown below.



8. A tap need be provided at every school having pucca building and other public institutions.

9. The work of house service connections is getting done by a mason of the village who does not know the technic in fixing the fixtens. It is necessary to allow authorised plumber only for this job.

10. It is necessary to provde by-pass loop as the OHSR as shown below. By this arrangemnt, the elevated tank serves as balancing reservoir and all through out the pumping hours distribution can be given through by-pass loop simultaneously



11. The whole distribution system should be disinfected by through flushing at least once an year, or whenver new pipes are laid or any portion of the pipe is repaired or replaced with high dosage of chlorine as it would help breading of worms of various sorts and leeches. The maintenance estimate should include this provision as a special item.

12. Dead ends of distribution are found to have not been provided with scoon arrangement. It is necessary to remove the solids deposited at ends of the pipes.

Contd.. 66 ..

13. For the schemes of minor Panchayats pressure filters are convenient instead of slow sand filters as it avoids labour for scraping the sand layer frequently at cost of heavy quantity of sand initially and whenever to replace it. Pump operator alone can handle the pressure filter operation. It avoids double pumping from the source to filter and filter to OHSR.

14. Since house service connections are not avoidable, per capita demand rate of 70 may be considered for future designs. This is required in coastal districts as the surface water which is the only available source, is getting contaminated and there is no alternative source like bore wells hand pumps is in Telangana districts to supplement to meet the house hold demand.

15. In coastal districts whose bore well hand pumps are not provided. Provision should be there in P.W.S scheme for cattle consumption also.

16. Whenever a tap is given for the purposes other than residential houses, meters should be fixed and changed accordingly to the rate fixed for bulk consumption.

17. With the expansion of the electronic field automatic pick up motor starters have come into the market. This avoids constant attendance to watch pump to take care of tripping of the starters, whenever there is drop in electricity etc., so also a system has been developed to run the pumps to the set number of hours in a day, as the arrangements automatically picks up to start the motor and keep it running until the set hours are over. This is worth trying as these the equipments are not costly.

Contd.. 67 ..

18. Remitting the pumping for 8 hours instead of 16 hours is also worth consideration as by remitting the same, there will not be extra cost, when least cost is calculated. A specimen calculation of least cost pipe size, pumping transmission line of project is enclosed for both 8 hours pumping and 16 hours of pumping for consideration.

When pumping is remitted to 8 hours the design parameters can be limited to the present population and for any increase in population pumping hours can be increased.

9. Assessment of Community Dynamics in O/M:

9.1 Concept of C.P. in O&M - Please refer VLWM Study-Nalgonda District Chapter-9.

The areas for investigation here are:

1. Reaction to water supply - satisfaction/non satisfaction.
2. Awareness of water supply system. Its physical setting and functioning.
3. Awareness of benefits-impact.
4. Awareness of cost.
5. Sense of ownership - (Vandalision - Sanitation) (Finance - decision making)

This awareness is created at the time of planning, construction and operation and maintenance.

9.2 Reaction to water supply:

The question addressed to the members communities was "Are you satisfied with the water supply? If not why? The answers are tabulated below:

The results are arrived at by Group discussions from 8-sections from a cross section of the village,community;

1.	Elders	Male	- Female
2.	Graduates/ (High School).	Male	- Female
3.	Youth	Male	- Female
4.	SC people	Male	- Female

Are you satisfied with water Supply?

Sl No.	Name of village.	% Satisfied	% not satisfied.	Reasons for Non-satisfaction.	Remarks
1.	Pentapadu	25%	75%	Short duration	20 mts. W.S.
2.	Mudunuru	75%	25%	No sufficient PSP.	No PSP for SC.
3.	Paramilla	Nil	100%	No filtration	Raw water pumping.
4.	K.Pentapadu	75%	25%	No sufficient PSP.	2 Colonies have no PSP.
5.	...ipparu	75%	25%	No sufficient PSP	2 Colonies have no PSP.
6.	Kacherla	25%	75%	No filtration	Raw water supply.
7.	Alumpuram	12.5%	87.5%	No water at PSP.	Ward No. 6 No water.
8.	Ravipadu	12.5%	87.5%	No PSP.	Scheme not commissioned only HC given BW water. No. Storage.
9.	Meenavalluru	25%	75%	No filtration Irregular.	Duration of supply 45 mts.
10.	Korumilli	75%	25%	Not sufficient PSP.	--
11.	Prathipadu	NA	NA	NA	Filters choked.
12.	Manjipadu	12.5%	87.5%	Not reliable Not filtered.	

The most common reason for disatisfaction is "not sufficient PSP". This is felt because duration distribution is short and 50 familites do not get sufficient time to collect water from a PSP. 1 PSP/50 families is for 8 hour water supply.

Awareness of water supply system physical setting / functioning:

2. A most important factor for lack of participation is the conceptual gap between the planners/implementing agency and the Community. Nearly all the people in the community have seen the location of the ....d. head works. But when questioned Do you know how it works? or have you seen the different parts of the head works? The results were as follows:

Name of village.	Elder M	F	Graduate Male M	F	Youth M	F	SC M	F	TOTAL Yes	No
...entapadu	Yes	Yes	Yes	No	Yes	No	No	No	4	4
...duuuru	Yes	No	No	No	No	No	No	No	1	7
...ramilla	Yes	No	No	No	No	No	No	No	2	6
K..Pentapadu	Yes	No	Yes	Yes	Yes	Yes	Yes	No	6	2
...rippalem	Yes	No	No	No	Yes	No	No	No	2	6
...cherla	Yes	No	Yes	No	Yes	No	Yes	No	4	4
...lumpuram	Yes	Yes	Yes	No	No	No	No	No	3	5
...navipadu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
...emavalluru	Yes	No	No	No	Yes	No	Yes	No	3	5
Korumilli	Yes	No	No	No	No	No	No	No	1	7
...thipadu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
...ourjipadu	Yes	No	Yes	No	No	No	Yes	No	3	5
TOTAL:80									29	51

Generally people do not have clear idea about how a water supply system functions. People are less aware about the design parameters like 6 hour distribution on 1 PSP/ 50 families or 40 l.p.c.d., supply etc.

3. Awareness of benefits impact:

The next question was about the quality of water and its impact on health. Do you feel your/your family health has improved after taking water from the PWS?

Yes = There is difference
No = There is no difference

Sl No.	Name of village.	Elder M	Elder F	Graduate M	Graduate F	Youth M	Youth F	SC M	SC F	TOTAL Yes	TOTAL No.
1.	Pentapadu	Yes	Yes	Yes	Yes	Yes	No	No	No	5	3
2.	Mudunur	Yes	Yes	Yes	No	No	No	No	No	3	5
3.	Paramilla R.W.	FILTER NOT WORKING									-
4.	K.Pentapadu	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	Nil
5.	W.Wripparu	Yes	Yes	Yes	Yes	No	No	Yes	Yes	6	2
6.	Racherla R.W.	FILTER NOT WORKING									
7.	Alumpuram	Yes	Yes	Yes	Yes	No	No	No	No	4	4
8.	Ravipadu	NOT COMMISSIONED									
9.	Meenavalluru	Yes	No	No	No	No	No	No	No	1	7
10.	Korumilli	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8	-
11.	Prathipadu	FILTER NOT WORKING									
12.	Monjipadu	Yes	Yes	No	Yes	Yes	No	No	No	4	4
		TOTAL: 64								39	25

The health awareness related to water is present but not sufficient. In people's consideration the eary availability of water near their houses is more prominent than health impact.

4. Awareness of cost:

The next question was do you have any idea about the cost of construction and O/M of the water supply. Do you like the G.P. provide more house connections or [illegible] Are you willing to pay for water? (If supply is regular/ reliable)

Sl No.	Name of village.	Want more PSP	Want more H.C.	Willing to pay	Not willing to pay.
1.	Pantapadu	100%	Nil	80%	20%
2.	Kudunur	25%	25%	75%	25%
3.	Perimella	75%	25%	75%	--
4.	[illegible]ntapadu	100%	--	100%	--
5.	[illegible]rippuru	75%	25%	62.5%	--
6.	Pacherla	50%	25%	100%	--
7.	Alumpuram	100%	--	100%	--
8.	Ravipadu	NOT COMMISSIONED			
9.	Meenavalluru	75%	25%	50%	--
10.	Korumilli	25%	--	75%	--
11.	Konijipadu	75%	25%	75%	--
12.	Prathipadu	NA	NA	NA	NA

The request for more PSP is strong. This is because the duration of water supply is short and PSP users are not able to get enough water. There are also requests for house connections. The majority of people are willing to pay for a reliable water supply.

Only in 4 villages ie., Mudunur, Meenavallur, Alumpuram and Kacherla, 25% of the respondents could mention a right figure about the capital cost of the scheme. In two villages only (Meenavallur and Alumpuram) 12.5% and 25% of the respondents had any idea about O/M costs of scheme.

Sense of Ownership:

To whom does the O.H.S.R. belong?

All respondents replied that it belonged to the Government

To whom does the PSP belong?

All respondents feel that it belongs to the Gram Panchayat

To whom does the house connection belong? All feel it belongs to the owner of the house.

The sense of ownership of the scheme as a whole is not present in most of the people.

9.3 COMMUNITY CONTROL OF O/M:

Institution for O/M of water supply:

Who should manage the water supply in the village

All respondents unanimously agree that the water supply should be managed by Gram Panchayat.

9.4 Women participation:

Since all agree that G.P. should manage water supply the women members of the G.P. could play a special role in water supply? In 8 out of the 12 schemes studied the women members were available for discussion. While these women are not aversed to the idea of taking responsibility for water supply, they feel diffident for several reasons. One reason is that many of the G.P. Members are from SC/ST Communities. The Mahila Mandali (if present) members are mostly from the FC Community. The following table shows this:-

Sl No.	Name of village.	No.of women G.P. Members	Community G.P. Members.	Community of M.M. President/ Secretary	Activity of Mahila Mandal.
1.	[illegible]ntapadu	4	FC	FC	Sewing Class
2.	[illegible]dunuru	2	SC	FC	NIL
3.	[illegible]aramilla	3	SC/SC	FC	NIL
4.	[illegible]ntapadu	2	SC	FC	NIL
5.	[illegible]ripuram	3	BC	FC	NIL
6.	Kucherla	2	SC	NIL	--
7.	Alamuram	3	BC/SC	FC	SEWING
8.	[illegible]enavallur	3	SC/BC	FC	NIL
9.	[illegible]rumilli	2	FC	FC	SEWING
10.	[illegible]ajipadu	1	SC	FC	SEWING

Mahila activity is limited to sewing.

A combination of the Mahila Mandal and G.P. members could form into a group and take more interest in water supply and finally take responsibility for it. The district women and child welfare office also feels that they could support such a group.

The Sarpanches are not confident of women managing the water supply. Though they will not prevent women if they come forward to take-up O/M of water supply.

P.R.E.D. Engineers at district and sub-division level say that the Sarpanches must take more inteerest in maintaining the schemes. Rural people they say are irresponsible, they waste water, break taps, hence they need to be educated (DE - Ganapavaram & Tadepalligudem).

The anticipated advantages of G.P. in West Godavari district would be.

1. A more equitable distrubition of water and coverage of fringes who still depend on traditional sources.
2. Awareness of cost and sense of ownership may reduce wastage of water and reduce damanges to installation and improve sanitation.
3. It will make people more willing to pay.
4. Health education could result in people demanding that quality of water to be maintained.

9.5 Constraints and Bottlenecks:

1. Agent to promote + Organise CP. is not present at village level.
2. G.P.'s may resist sharing financial responsibility with C.P. Institution.

3. Since the upper class have house connections C.P. may not appeal to them and like women's membership in G.P. C.P. leaders in the village may not enjoy "Status" and gradually make C.P. work an activity disignated for the lower castes.

Possible institutions for Community Participation:

Any institution for management of O/M of water supply should be accountable to G.P. The opinion seems to point to the women G.P. members who can co-opt other women/men in the village and from a committee for water supply O/M. G.P members should form the core of a water committee.

10. Assessment of Adequacy O/M Funds:

The regular O/M costs of P.S Schemes in West Godavari are:

1. Salary of Operator
2. Cost of Chemical
3. S.S.Filter maintenance - replacement of sand
4. Major repairs - Motor burning
5. Minor repairs - replacement of taps, leaks etc.,
6. Electricty bill.

10.1 Operation & Maintenance Cost:

The expenditure incurred by the different villages on Operation & Maintenance is shown below (for one year):

OPERATION & MAINTENANCE COSTS:

RUPEES ANNUAL

Sl No.	Name of Village	Operator's salary	Cost of Chemical.	Sand replacement	Major repair	Minor repair	Electricity bill.	T
1.	Pentapadu	450x12 5,400	6000	-	-	-	-	3960
2.	Madunur	450x12 5.400	1825	2000	3000	1200	EXEMPT	1342
3.	Paramilla	1050x12 12,600	1825	2000	3000	1200	EXEMPT	2062
4.	K.Pentapadu	450x12 5,400	1825	2000	--	1200	EXEMPT	1042
5.	W.Kripparu	500x12 6,000	-	-	3000	5 MONTHS IN OPERATIO		
6.	Racherla	150x12 1,800	1825	2000	--	1200	EXEMPT	600
7.	Alumpuram	450x12 5,400	10200		3000	74000	60,000	15568
8.	Kavipadu	NA	1825	2000	--	1200	EXEMPT	NOT -RATI FULL
9.	Meenavalluru	450x12 5,400	1825	2000	--	1200	EXEMPT	1042
10.	Korumilli	150x12 1,800	1825	2000	--	1200	EXEMPT	682
11.	Prathipadu	450x12 5,400	10,000	2000	--	1200	20,000	15568
12.	Konjipadu	200x12 2,400	1825	2000	2500	1200	EXEMPT	992

10.2 THE INCOME FROM WATER SUPPLY:

The only source of income from water supply is the down payment and tariff from house connection, and water cess in some village.

The annual tariff for each scheme is shown below:

RUPEES.

Sl. No.	Name of village.	Total H.Connections.	Down payment.	Rate monthly.	Annual Tariff. DEMAND	Remarks
1.	Pentapadu	600	500	8	57,600	--
2.	Kudunur	112	1000	10	13,440	--
3.	Paramilla	132	200	6	9.504	--
4.	K.Pentapadu	50	NOT FIXED	NOT FIXED	--	--
5.	Vuriparu	100	500	10	12,000	--
6.	Racherla	27	300	10	3,240	--
7.	Alampuram	245	1000	10 (Rs.2/-for Addl.Tap)	29,400	--
8.	Kodavallur	70	NOT FIXED	NOT FIXED	--	NOT HANDED OVER.
9.	Korumilli	120	250	10	14,400	--
10.	Prathipadu	144	200	10	17,280	--
11.	Konjipadu	86	500	12	12,384	--
12.	Kavipadu	75	500	NOT FIXED	--	NOT COMPLETED

Some G.Ps., are collecting a drinking water cess as a percentage of House Tax. This is shown below(1990):

Sl No.	Name of the G.P.	House Tax demand.	% of House tax as water cess.	Water cess demand
1.	Madunur	6702	12	804.24
2.	Alampuram	34109	25	8527.25
3.	Korumilla	5312	25	1335.00

In Nalgonda district the Re 1/- grant(population grant) to Gram Panchayati from Government is deduced for repair of H.P. in West Godavari district this is not done and the grant goes to the Gram Panchayat. This grant could be spent on water supply?

Many villages also have coconut trees grown on the tank bunds in the water head works compound which are also auctioned out. These also could be reserved as income for water supply. Thus the income from water supply comprises of:-

1. Tariff from house connection
2. Water cess (% of house tax)
3. Auction of fish in S.S.Tank.
4. Auction of fruit trees on tank bunds and near pump house.
5. Re 1/- grant from Government.

Every village in West Godavari has also a village "Common Good Fund" this is not part of G.P. Accounts. This comes from items like

1. Auctioning of Paddy weighing rights when paddy in sold
2. Auction of Fish tanks(not in the control of G.P.)
3. Fine imposed and collected etc.,

There is also a committee to administer this Fund. The fund is used for village festivals or other village needs. A percentage of the fund could be set apart for water supply? This committee president should be co-opted to the water committee.

0.3 Administration of water supply fund.

If a community participation committee is organised in the village, the funds should be administered by this committee. The committee should be made accountable to G.P.

0.4 Adequacy of Resources:

The sources mentioned above may not be sufficient for O/M of water supply. There are some suggestions to increase income.

1. Increase the tariff for house connection to Rs. 20 - 30/ per month.
2. Every adult should pay Rs. 1/- month for water supply
3. Every ration card holder to pay Rs. 1/- each time ration in purchased/every month.
4. Government to subsidise?

Ability and Willingness to Pay:

The survey shows that when asked people respond that they are willing to pay.

CHAPTER - II

ASSESSMENT OF ADMINISTRATION/MANAGEMENT/TRAINING

11.1 ALLOCATION OF O/M RESPONSIBILITIES BETWEEN VARIOUS AGENCIES:

I.TECHNICAL

The technical aspects of O/M are to be managed by the A.E.E.D., (Mandal level Engineer) and the O/M Committee. Panchayati Raj Engineering Department should monitor, prepare O/M estimates, prevent in time major break downs and the day to day management will be attended to by operator advised by water committee/GP.

II. FINANCIAL:

Local resources above may not meet the full O/M expenses of the water supply. Hence financial assistance/ subsidy from the Government will still be needed. The Government **through** the Mandal Development Officer should assess this and grant subsidies to G.P. The financial responsibility of G.P. and Government should be fixed with no space for bargaining/doubt.

III. ADMINISTRATIVE:

The G.P. administration is supported by the District Panchayati Officer. Hence the O/M funds administration also can be supervised by the District Panchayat Officer. The O/M personnel also are controlled by the District Panchayat Officer.

IV. COMMUNITY PARTICIPATION AND EDUCATION:

The support agencies for these aspects are the village Development Officer from Mandal Development Office, the multi purpose health worker from the D.M.H.O. Office the Mahila Mandals organised by the Women and Child Welfare Department, and N.G.O. if present. The V.D.O. can co-ordinate these agencies at the village level and M.D.O. at the Mandal level.

At present none of these agencies get involved in water supply problems in the village level. There is no co-ordination between P.R.E.D.(R.W.S.) the D.M. & H.O., the Women & Child Welfare Departments. Water supply is an important topic for achieving the objectives of each of these Departments. Hence they should come together and focus their attention on community water supply system. The B.D.O. could co-ordinate these agencies?

THE ALLOCATION OF O/M RESPONSIBILITIES BETWEEN VARIOUS AGENCIES:

I. TECHNICAL:

1. B.D.O./P.R.E.D. (Mandal Engineer)- Monitor support
2. G.P./Committee - Operator - Day to Day.

II. FINANCIAL:

1. Government/B.D.O./ - Subsidy
2. G.P./Committee - Mobilisation

III. ADMINISTRATION:

1. B.D.O. - Monitor / Support
2. G.P. Staff - Committee } Day to Day

IV. COMMUNITY PARTICIPATION EDUCATION:

1. B.D.O. - Co-ordinate
2. V.D.O. - Women
3. D.M.H.O. - M.P.H.W. - Health Education
4. Women & Child Welfare - Mahila Mandal
5. N.G.O. - Organisation.

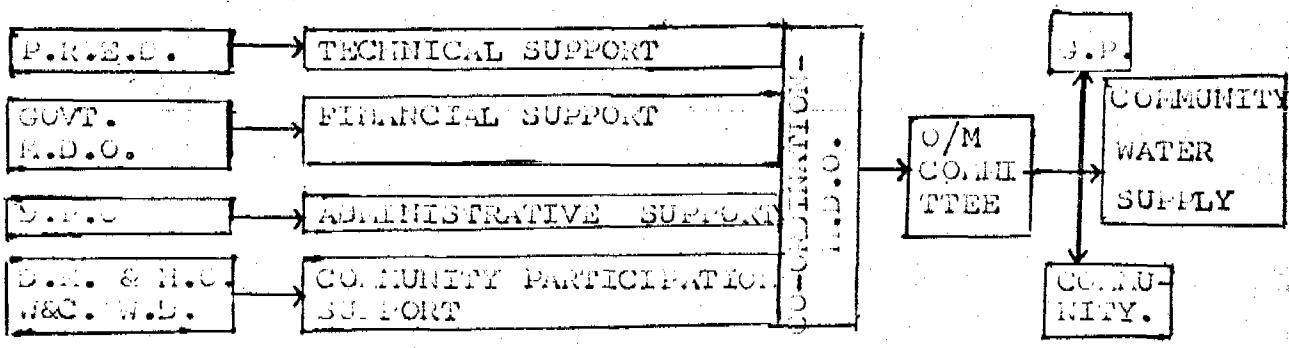
CHAPATER - 12

AN OVER VIEW OF EXISTING SITUATIONS IN PENTAPADU MANDAL OF WEST GODAVARI DISTRICT:

		Technical	Financial	Administration.	Community participation.
			Rupees.		
PENTAPADU	1.	W.S.duration 30 mts . PSP. Below ground level. Water tested in 1990. Not sufficient quantity.	G.P.Income : 750901 W.S. Income } 57600	Has Executive Officer & Staff has bye-laws for W.S. Operator-Office building.	Mahila Mandal Youth Group VDO + MPHW can organise O/M Committee.
NIDUMUR	2.	W.S.Duration 2 hours. PSP not enough, water not tested.	G.P.144805 Income W.S. 13440 Income. W.Cess 804	Full time clerck Operator. Has bye-laws for W.S. Office building.	Mahila Mandal VDO +MPHW can organise O/M Committee.
PRAHALLA	3.	W.S.duration 2 hours. Raw water pumping-No chlorination-water not tested.	G.P. Income 88990 W.S. Income 9504	Full time clerck-Operator. No bye-laws. Office building.	Mahila Mandal VDO + MPHW can organise O/M Committee.
K.PENTAPADU	4.	W.S.duration 3 hours. Not sufficient PSP No chlorination. water Not tested.	G.P. Income. 99547 W.S. Income. --	Full time clerck Operator. No. bye-laws, office building.	Mahila Mandal. VDO + MPHW can organise O/M Committee.

		Technical	Financial	Administration.	Community Participation
W.MRIPPARU	5.	W.S.duration 1 hour. 2 Colonies no water-SSP not sufficient. water Not tested.	G.P. Income.199102 W.S. Income. 12000	Executive Officer & Staff Operator has bye-laws and office building.	Mahila Mandal. VDO + MPHW can organise O/M committee.
ALLIPURAM	6.	W.S.Duration 1 hour. Taps attached to house connections-Taps in Pits. No water in 2 wards.	G.P. Income.370906 W.S. Income. 29400 W.Cess.8527	Executive Officer Staff & Operator No bye-laws-office buildings.	Mahila Mandal. VDO +MPHW People disillusioned difficult to organise.
MEENAVALLUR	7.	W.S.duration 1 hour. No filtration-leaks. OHSR not functional. Not tested.	G.P. Income. 96879 W.S. Income --	Full time clerck Operator. No bye-laws.	Mahila Mandal VDO +MPHW ca organise. O/M Committee.
KORUKILLI	8.	W.S.duration 45 mts. SSP not sufficient. No chlorination. water Not tested.	G.P. Income. 42359 W.S. Income.14400 W.Cess. 1335	Part time clerck Operator. No bye-laws-office building.	Mahila Mandal. VDO + MPHW
PRATTIPADU	9.	W.S.duration 45 mts. One filter checked. ½ village has no water. water not tested.	G.P. Income.380915 W.S. income. 17280	Executive Officer staff operator. Has bye-laws.W.S. Office building.	Mahila Mandal VDO + MPHW people disillusioned difficult to organise.
MUNJIPADU	10.	W.S.duration 2 hours. Filters faulty. Intake blocked.	G.P. Income.69045 W.S. Income.12384	Part time clerck operator Office building. Now bye-laws.	Mahila Mandal. VDO + MPHW can organise O/M Committee.

12.2 DIRECTIONS FOR BETTER OPERATION & MAINTENANCE



The above structure at the Village Level and a monitoring of all G.W. Water Supplies at Mandal and District levels should be organised. The M.P.O., at the Mandal level and the S.E./D.P.O. at the District level could carry out the monitoring function.

CHAPTER - 13

RECOMMENDATIONS FOR INSTITUTIONAL ARRANGEMENTS

3.1 Areas for institution development:

The, health personnel and the woman and Child department personnel should be throughly exposed to the problems in Rural Water Supply. They should also acquire skills to deal with groups of people at village level. The V.L./Or committee should be exposed to regular training and they in turn pass on messages to groups in the villages, during meeting of Mahila Mandals, youth clubs on other such groups. If this does not take place the committee will remain a super structure and soon become dormant.

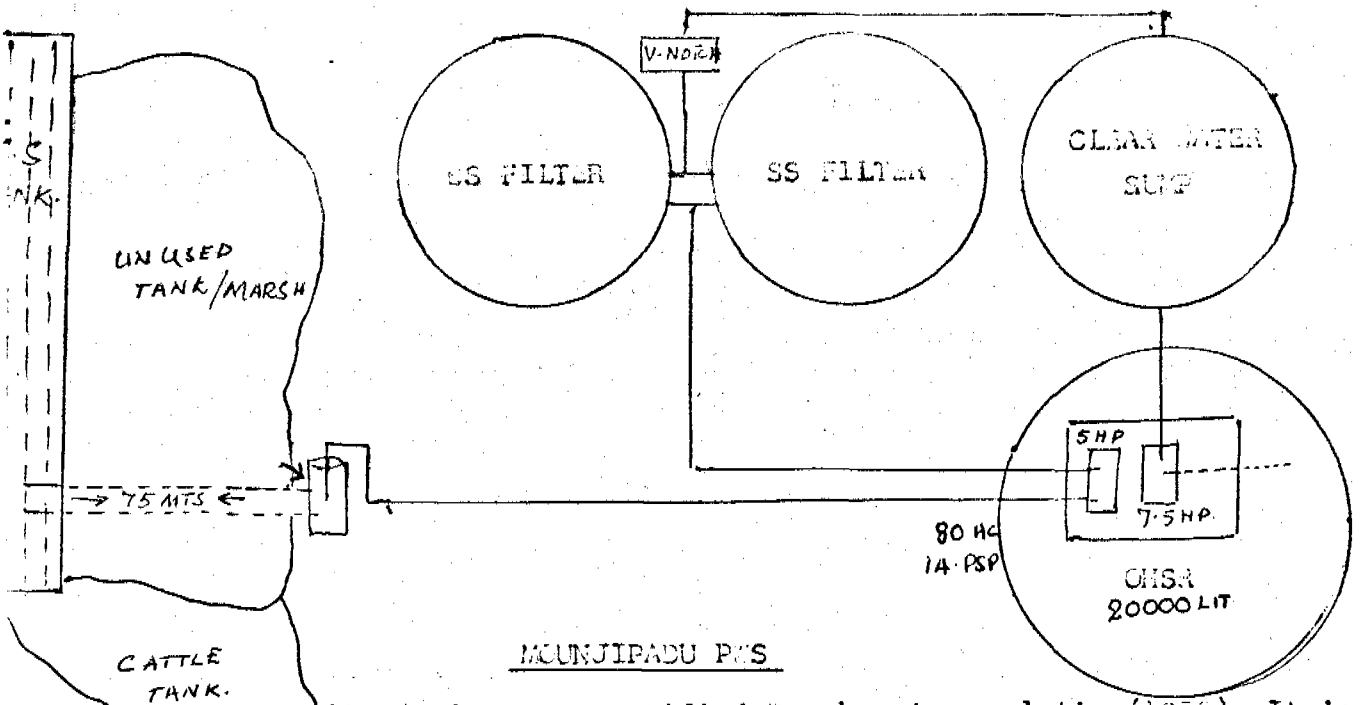
AT TALUK LEVEL:

Trainings Co-ordination meetings and exchange visits to other communities will make it rewarding and sustainability.

AT DISTRICT LEVEL:

Trainings- Co-ordination meetings visits to water testing labs and inter district exchange visits should be organised.

MOUNJIPADU.
25



MOUNJIPADU PWS

Mounjipadu is a non-notified Panchayat population(1050). It is a hamlet of Cotlapalem Revenue Village. The traditional drinking water is the village tank fed by a canal - 1 KM away. Village has primary school. The scheme was started in 1988.

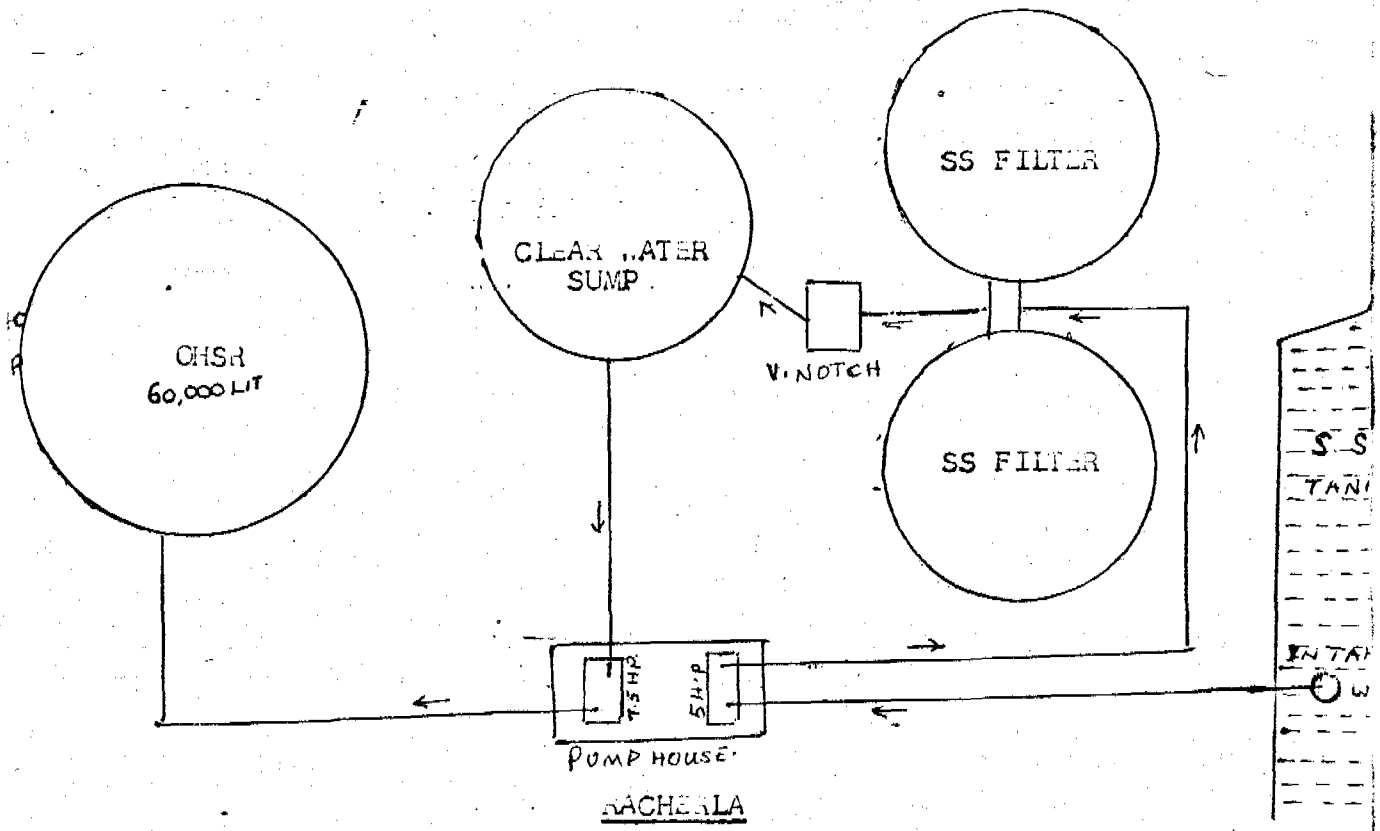
TECHNICAL: There is a marshy (unused tank) area between the SS tank and pump house. An under ground RC Pipe(75 mtrs) is laid across the marshy area and nearly touching it is the small intake well. The RC Pipe has been blocked by silt and the filters are fed by the marsh water which leaks into the intake well. This water is turbid(or silt from RC Pipe) and the SS filters get choked often(once a week). This makes water supply irregular. The sanitation in and around pump house can be improved.

FINANCIAL: The expense on water supply is around Rs.21,000/- without power charges. With electricity bill it will be near Rs.40,000/- . At present the income is from the 80 house connections Rs.9600/- annually. Gram Panchayat has an income of Rs.39,257 annually. Operator salary is Rs.200/-.

ADMINISTRATIVE: The GP has only a part time clerk and the operator is parttime and low paid. Hence the GP Panchayat has low administrative capacity. No bye-laws for water supply.

COMMUNITY PARTICIPATION: Generally people are not satisfied with water supply. The main reasons are 1. The supply is irregular

2. Some PSPs do not work due to elevation and some house connections have dug pits for taps. The PSP supply is not sufficient.
3. Filtration is poor - no chlorination.
4. Due to the marsh water being used - people think the water is not good.



NACHERLA

Nacherla is a non-notified G.P. Population 2486. (SC 700). The village has 2 primary schools the traditional drinking water source is the village tank fed by canal (1/4 km only). There is a tank watchman appointed by G.P. A Govt. paid full time clerk is present.

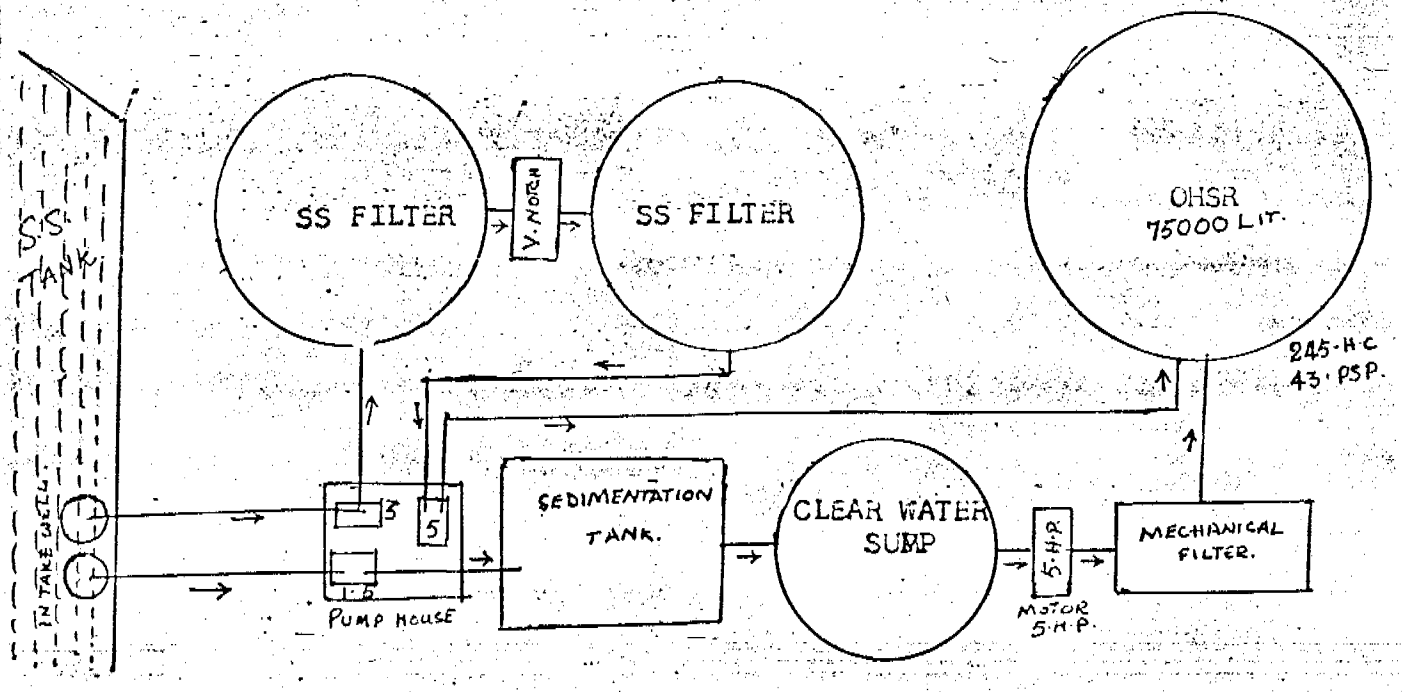
The P.W.S Scheme was commissioned in 1988 at a cost of Rs.5 lakhs. It has 27 House connections and 24 PSPs (SC-10).

TECHNICAL: The filters are not working. Direct raw water pumping is done. The reason for this is : - (a) financial problems (2) The difficulty of getting sand at Govt. approved rates from sand quarries where the rate is nearly double. This has created accounting problems. The operator is paid Rs.150/- per month.

FINANCIAL: The G.P. has an income of Rs.40,000/- income from water supply is Rs.27 x 10 x 12 = 3240/- per year. This is not sufficient for chlorination and salaries. The electricity bills are not paid.

ADMINISTRATIVE: The G.P. has a full time clerk a Sweeper and Operator. There is sufficient administrative capacity.

COMMUNITY PARTICIPATION: The women SC members are not active during meetings and hence SC participation is low. The SC people are demanding better W.S. (longer time) (or more taps). The other sections seem to be satisfied. Health awareness is low. Water is not filtered.



ALAMPURAM

Alampuram is a notified G.P. Pop. 4,427(SC 685) the Village has high school, primary school and veterinary hospital and a PHC sub-centre. The traditional drinking water source is the tank, the tank is canal fed (adjacent) and the operator is also the tank watchmen.

Alampuram water scheme is the oldest scheme in the mandal commission in 1975, it was built with local contribution, LIC loan and government grant.

Local contribution	96,000
LIC loan	64,000
Govt. grant	1, 60,000
Total:	3,20,000

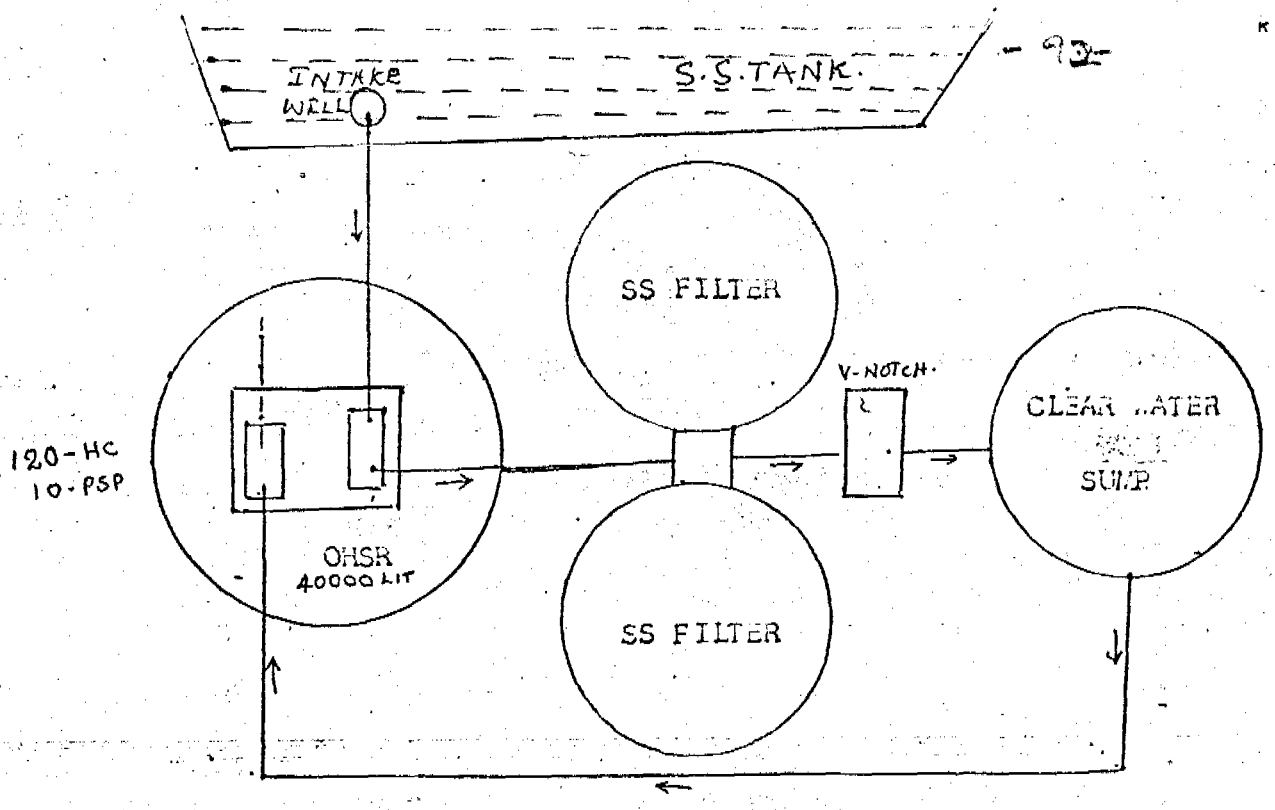
The G.P. is paying back the LIC loan and has cleared 14 out of 25 instalments.

TECHNICAL: 2 types of filters are used, mechanical and slow sand. The mechanical filter is preferred. The SSF gets choked often due to turbidit in water and the filter media has been reduced to speed up filtration. Th water coming out of the filter is inferior in quality to the water from t mechanical filter. When supply is started the OHSR empties in 20 mts. to 30 mts. Thus the W.S. lasts for ½hour morning and ½hour evening. There are 600 house connections and 43 PSPs(SC-12).

FINANCIAL: 12% drinking water cess on house tax is levied. This and the collection from the house connections is the income from water supply. Th GP general funds are used in O/M of water supply. The Operator salary is 450/- p.m.

ADMINISTRATIVE: This notified G.P. has Executive Officer and staff. It ha no bye-laws for water supply. The W.S. administration can be improved. Ther are several split pumps attached to house connection. Water does not reach. eg Ward No.4.

PEOPLES PARTICIPATION: The people are not satisfied with the W.S. they ha become cynical. Hence participation is difficult.



KORUMILLI

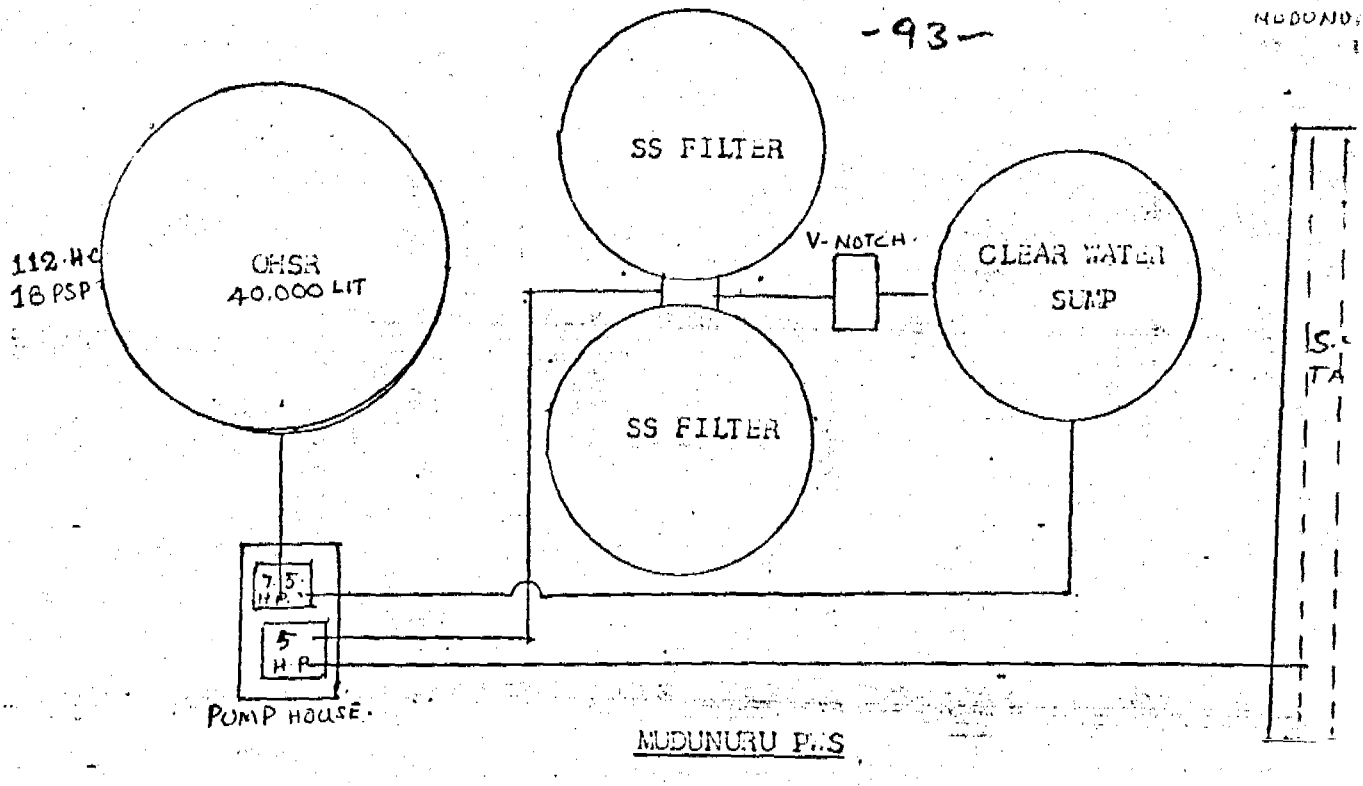
Korumilli is a non notified G.P. Population 1400(SC 314). The village has a primary school and a veterinary centre. The traditional drinking water source is the village tank. The tank is canal fed(1/4 km). Ther is a Watchmen who is now acting as the Operator. The Scheme is completed but not handed over to G.P. though GP has started operating the scheme.

TECHNICAL: The Scheme is functioning well. The water supply lasts for 20 mts. in the morning and twenty minutes in the evening. The SC colony people do not get sufficient water. They have 1 tap for 40 families and in 20 mts. 40 families are not able to collect water. The school children are also drinking raw water as the school has no arrangements to supply water to children. Chlorination is not done.

FINANCIAL: The total expenses on water supply for a year will be around Rs.35,000/-. Though at present the GP spends only 150/- month on Operator. The total income from the 120 H.C. will be Rs.14,400/- there will be a deficit of Rs.5600/- year. The GP will have to meet this expense.

ADMINISTRATIVE: The G.P. has only a part time clerk. Hence administrative capacity is low. The G.P. has no bye-laws for W.S.

COMMUNITY PARTICIPATION: Though the G.P. meets regularly, the water problem is not a priority. The two women members do not attend meetings. The participation of the S.C. Community is also low.



MUDUNURU P.W.S

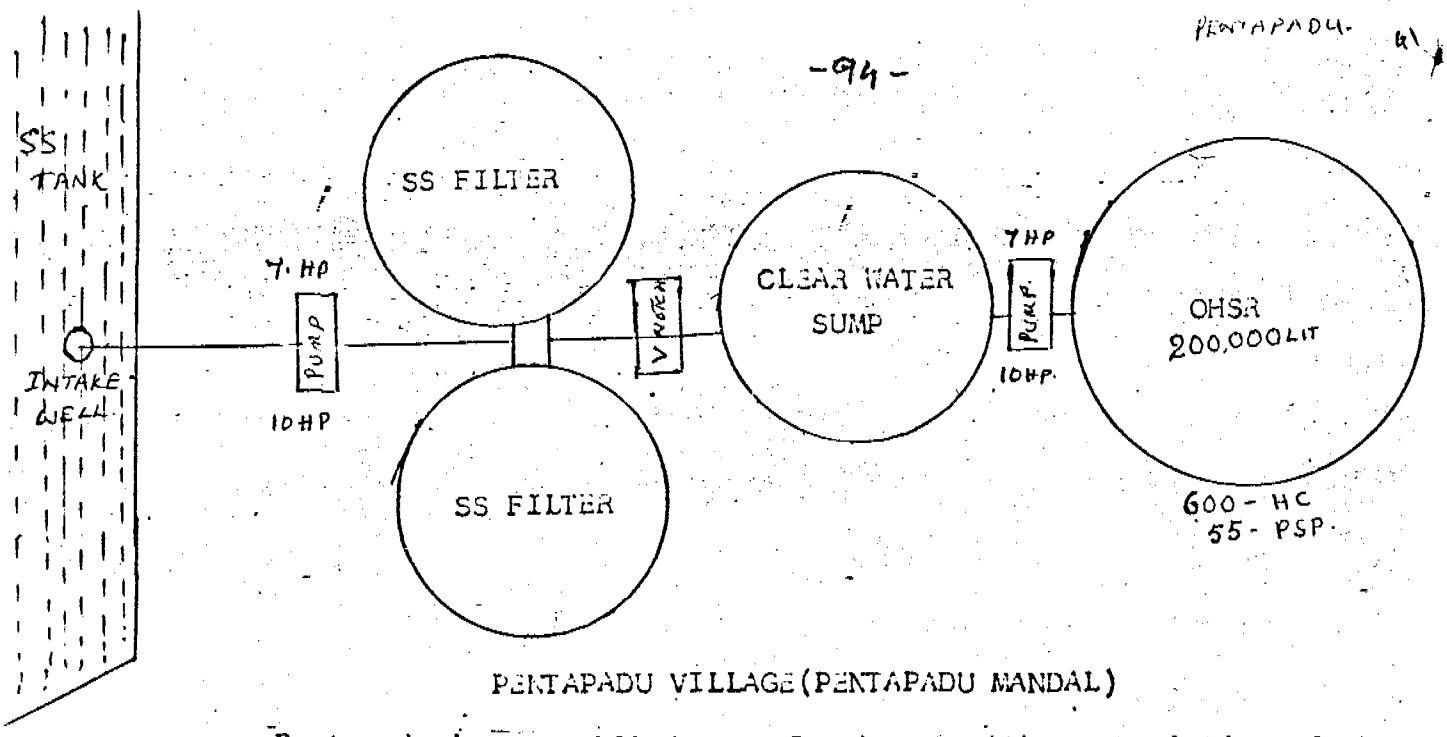
Mudunuru is a non notified Gram Panchayat. Population 2116(SC 2 The SC Colony Arundethipeta is 3 KM away. the Village has upper Prima School and PHC centre. The traditional drinking water source is the village tank and wells. The tank is canal fed(1 KM) . There is a wat men for the tank, who is now acting as Operator. The P.W.S is commissi in April 1991.

TECHNICAL: The Scheme is functioning well. The supply is 2 hrs./day. The SC colony Arundetipeta is 3 KM away. Arundathipeta is only ½ KM Ch.Agraharam. This colony should get water from Ch.Agraharam. There a hamlet of Akuthigalapadu(22 houses) adjacent to Mudunuru. Mudunuru has given 6 house connections to these people and a PSP in Mudunuru can be used by them. But this has been objected by DPO. The School has no water connection and school children are drinking raw water f the village tank.

FINANCIAL: The O/M cost is about 40,000/ year including power bill. present power bill(20,000/-) is exempted. The income from W.S. is Rs.13,440/-. A drinking water cess of about 12% is collected together with house tax but if further finance is to be collected th GP prefers to hand over the collection to MRO. The operator's salary is Rs.450/-.

ADMINISTRATIVE: The GP has full time clerk and Operator. They can administer the scheme, for water supply.

PEOPLES PARTICIPATION: The SC Colony inside Mudunuru requires better service (1-2 PSPs). more are requested. The level of awareness and sense of ownership is low and hence community must be educated.



PENTAPADU VILLAGE(PENTAPADU MANDAL)

Pentapadu is a notified Gram Panchayat with a population of 11,887(1981 census) SC Population 1571.

The village has two drinking water tanks connected to agricultural canals(4 kms away). The tanks are protected from misuse by 2 watchmen. This and open wells and a few hand pumps(shallow DW) are the traditional source of water.

The P/S Scheme was commissioned in 1989. It has 600 house connections and 55 public stand posts.

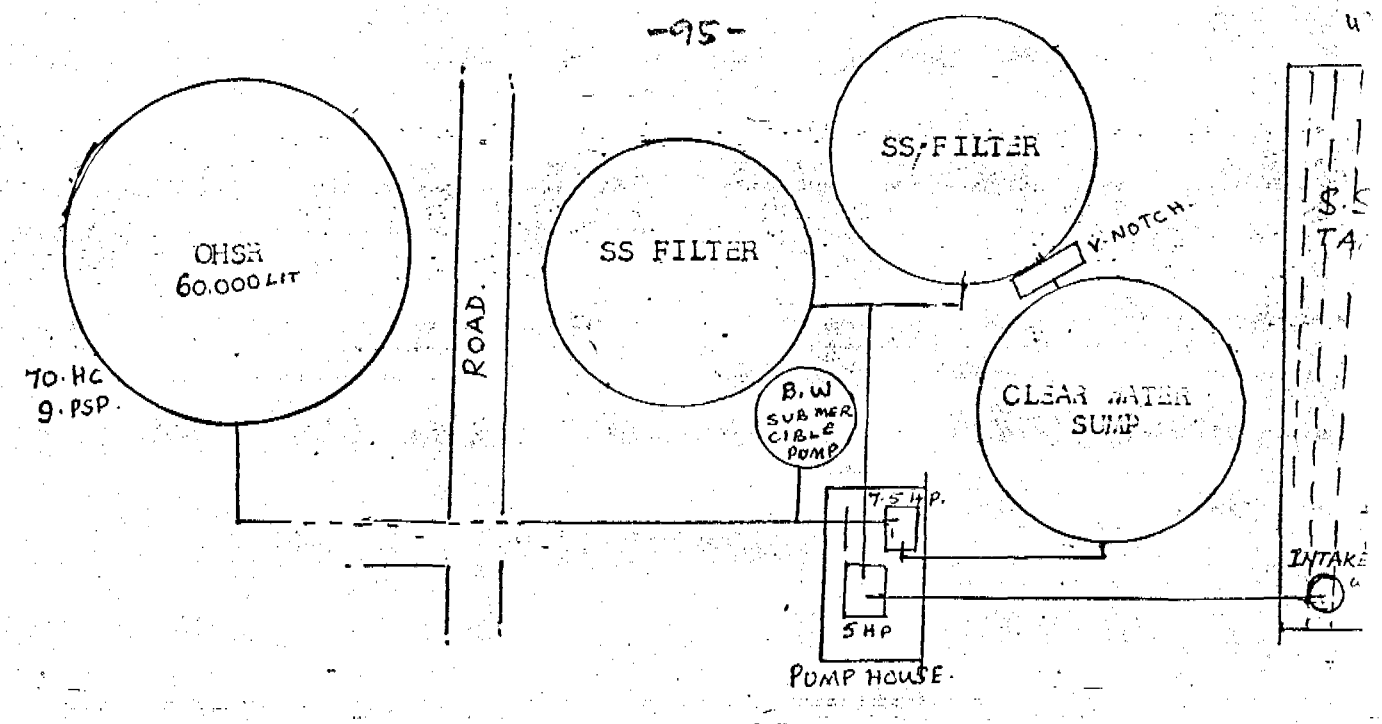
TECHNICAL: The SS Tank water is greenish in colour.

The slow sand filters have become inefficient due to non-replacement of sand scraped out. The water supply lasts only for 20 mts. and PSP users do not get water. Too many house connections. The SC colony does not get water. They have dug pits.

FINANCIAL: The Gram Panchayat should mobilise more funds for water supply. But people may not be willing to pay if water suppl is not improved. The operator is paid Rs.450/-

ADMINISTRATIVE: Gram Panchayat has executive officer and staff and office facilities, it has bye-laws for water supply.

COMMUNITY PARTICIPATION: Many people are not satisfied with the quality and quantity of water supply. They ask for more PSPs and better quality water. The SC Colony needs more PSF Many people transport water from Tadepalligudem Municipalit



MEENAVALLURU P.W.S

Meenavallur is a non-notified GP. It has both primary and high school. The traditional source of drinking water is the open well, bore points(10) and the village tank fed by canal - ½ kms away. The P.W.S scheme was started in 1989 even today left incomplete in many respects and not taken over by Gram Panchayat though the department looks on it as one of the completed schemes.

TECHNICAL: The GP has a no.of complaints about the scheme.

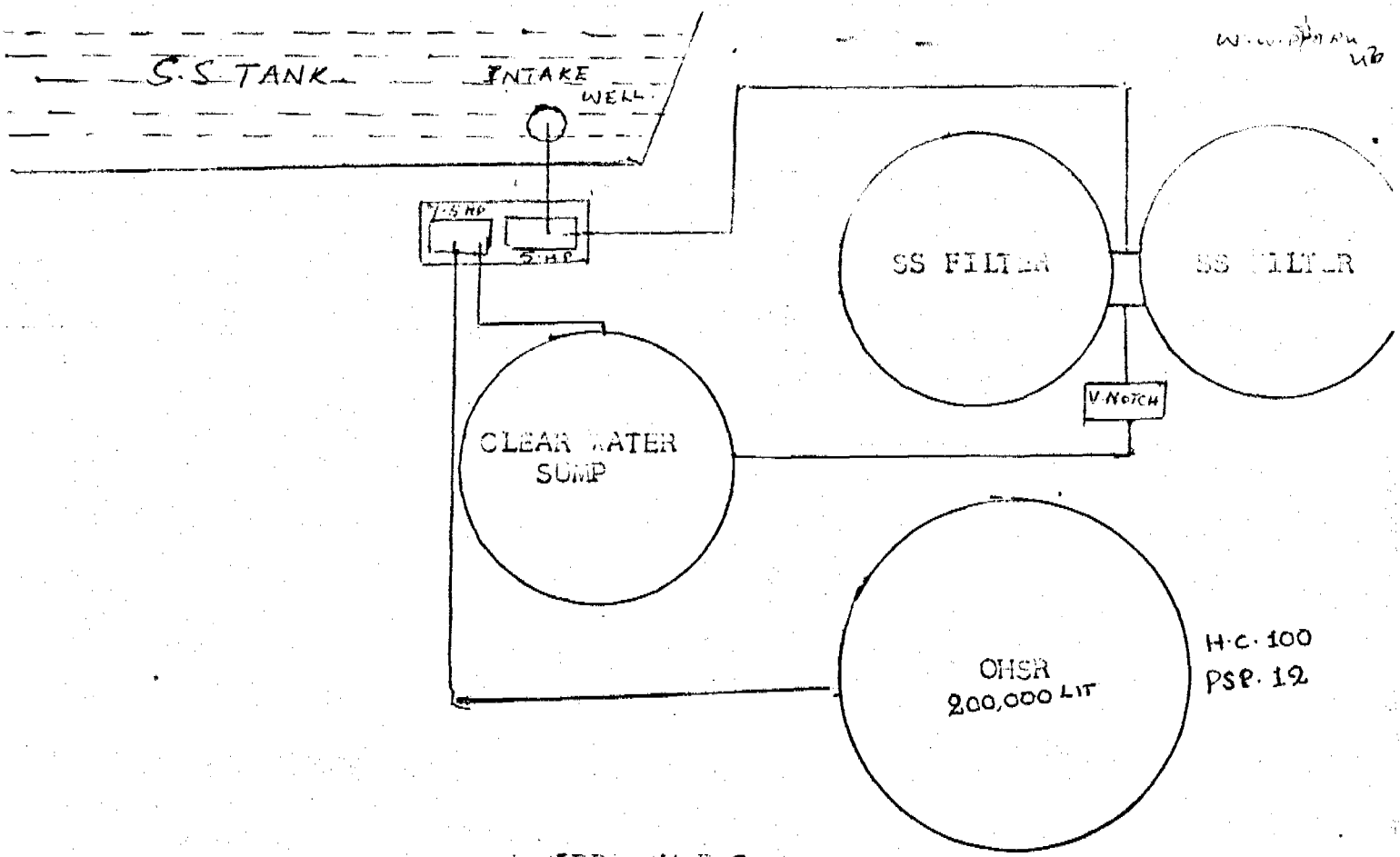
1. Several leaks in the distribution system, one of which is major.
2. The scover of the OHSR is blocked.
3. The outlet valve of the OHSR is not working.
4. Not sufficient P.Ps are installed.

FINANCIAL: The O/M annual expenses may reach upto Rs.22,000/- without power bill and to 45,000/- with power bill. The income from water suppl is 8400/- per year. The GP is willing to collect tarriff from the village. Operator salary is Rs.450/-.

ADMINISTRATIVE: The GP has full time clerk and operator. They can administer the scheme. GP has no bye-laws for water supply.

COMMUNITY PARTICIPATION: Generally people are not satisfied with the water supply. Reasons are;

1. Raw water and (Bore well water-little brakish) is supplied by direct pumping. The water goes into the tank and flows out (outlet valves cannot be closed).
2. Irregular. Power failure at the time of supply [illegible] day or no supply(no storage facility).
3. Not sufficient P.P.
4. People not aware of the working of the system and O/M cost.



...IPPARRU P.S

...ipparru is a notified Gram Panchayat with population of 725 (1981 census) SC 418. The village has a high school and 4 ele-. mentary schools. It has a hamlet-Odderugudem 1 KM away and a colony Upparupal m ½ km from village.

The PWS Scheme was completed in April 1991 and not yet handed over to the Gram Panchayat.

TECHNICAL: One of the motors has already burnt and the complaint is that the motors are getting heated up, though the pumping is only for 5 hours.

FINANCIAL: The only income from water supply is the tariff from 100 house connections. Gram Panchayat has no finance to extend the scheme to the two hamlets. Annual income of GP is 1676.9/- of which paid Rs.500/-.

COMMUNITY PARTICIPATION: Gram Panchayat is the institution best suit to maintain water supply according to most people. The people from the two hamlets are requesting for water (PSP)

WOMEN: Only 25% think that woman can manage water supply.

ADMINISTRATIVE: The Gram Panchayat is notified and has enough staff to administer. It has bye laws for water supply.

ITINERY of STUDY TEAM

VILLAGE LEVEL WATER MANAGEMENT STUDY - PENTAPADU MANDAL

WEST GODAVARI DISTRICT

	September,	27.	Reach Arrival meet District Officials.
	Saturday	28.	Reach Pentapadu meet Mandal Development Officer, M.P.P.
	Sunday	29.	Sunday.
	Monday	30.	Visit: Pentapadu P.W.S.Scheme.
OCTOBER	Tuesday	1.	Pentapadu P.W.S.Scheme.
	Wednesday	2.	Parimella P.W.S.Scheme.
	Thursday	3.	K.Pentapadu P.W.S.Scheme.
	Friday.	4.	West Vipparru P.W.S.Scheme.
	Saturday.	5.	Moustipadu P.W.S.Scheme.
	Sunday.	6.	Holiday.
	Monday.	7.	Mudunuru P.W.S.Scheme.
	Tuesday.	8.	Meenavalluru P.W.S.Scheme.
	Wednesday	9.	Kerunilli P.W.S.Scheme.
	Thursday.	10.	Ravipadu. P.W.S.Scheme.
	Friday.	11.	Office work.
	Saturday.	12.	Second Saturday
	Sunday.	13.	Holiday.
	Monday.	14.	Visit: Prathipadu P.W.S.Scheme.
	Tuesday.	15.	Alampuram. P.W.S.Scheme.
	Wednsday	16.	Racherla P.W.S.Scheme
		17	" "
		18 th to 27 th	N.A.P.work at Hyderabad - Nalgonda.
	Monday.	28.	Visit: Chintapalli (C)
	Tuesday.	29.	Darsiparru - (C) Umamaheswaram (C)
	Wednsday	30.	B.Kondepadu, Ramachandrapuram (D)
	Thursday.	31.	Akuthigapadu, Jatlapalem (D)
NOVEMBER.		1.	To Hyderabad - Report preparation.
		2nd November to 7th	preparation and finalisation of Report.

LIST OF PERSONS AND ORGANISATIONS MET IN WEST GODAVARI DISTRICT BY VLWM - SUTDY TE:

...

1. P.R.E.D - Super-intending Engineer - Eluru .
2. P.E.D. - Executive Engineers - Eluru-Narsapur- Kovvur
3. Dy.Executive Engineer- Ganapavaram-Tadepalligudem.
4. District Collector - West Godavari.
5. District Development Officer - West Godavari.
6. District Accountant officer
7. District Panchayat officer.
8. Mandal Praja Parishad - President - Pendapadu.
9. Mandal Development Officer- Pentapadu.
10. District Director - Woman and Child Welfare department.
11. District Medical and Health Officer.
12. District Planning Officer.

LIST OF REFERENCE DOCUMENTS

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9. Minimum Evaluation Programme MEP ----

నాడు నీటిపై స్త్రీలదే పెత్తనం

తాడేవల్లిగూడెం, అక్టోబరు 15 (న్యూస్‌టుడే): మంచినీటి నరఫరా నిర్వహణ బాధ్యత స్త్రీలకు అప్పజెప్పాలని, స్త్రీలకు మంచినీటికి అవినాభావ సంబంధం ఉన్నదని సామాజిక శాస్త్రవేత్త పి.జె. జోబ్ అభిప్రాయం వ్యక్తంచేశారు. విలేజి లెవెల్ వాటర్ సప్లై ఆపరేషన్ మెయింటినెన్స్ కమిటీ నర్వే నిమిత్తం ఇక్కడకు నమీపంలోని పెంటపాడు మండలం వచ్చిన సందర్భంలో సోమవారంనాడు ఆ కమిటీ సభ్యుడు జోబ్ 'న్యూస్‌టుడే'తో ముచ్చటించారు. ఒకప్పుడు స్త్రీలు చెరువులకు బావులకు వెళ్లి స్వేచ్ఛగా నీళ్ళు తెచ్చుకొనేవారన్నారు. అయితే యాంత్రికీకరణ జరిగిన తర్వాత వాటర్ సప్లయిలో పురుషుడే పెత్తనం చెలాయిస్తున్నాడన్నారు. ఫలితంగా స్త్రీకి స్వతంత్రం తగ్గిందని జోబ్ అభిప్రాయం వ్యక్తంచేశారు. నెదర్లాండ్ ప్రభుత్వం మంచినీటి నరఫరా బాధ్యతలను స్త్రీలకు అప్పగించి వారిని చైతన్యం చేస్తోందని పేర్కొన్నారు. స్త్రీలకు వాటర్ హైల్త్ ఎడ్యుకేషన్ ఇవ్వాలని ఆయన కోరారు. వాటర్ సప్లై స్కీములు సక్రమంగా నడవకపోవడానికి ఆర్థిక సామర్థ్యం లేకపోవడం, ఎడ్యుకేషన్, అవగాహన లోపించడమేనని జోబ్ ఒక ప్రశ్నకు సమాధానంగా చెప్పారు. జోబ్ వాటర్ సప్లై స్కీము కమిటీలో ఒక సభ్యుడు. ఆయన ఆర్థిక సమతా మండలిలో ట్రైనింగ్ కోఆర్డినేటరుగా పనిచేస్తున్నారన్నారు. స్కీములకు సంబంధించి సామాజిక విషయాలు గురించి పరిశీలిస్తున్నానని చెప్పారు. ఈ కమిటీలో మరో సభ్యుడైన రిటైర్డు ఎగ్జిక్యూటివ్ ఇంజనీరు దశశేషయ్యశాస్త్రి మాట్లాడుతూ తాను సాంకేతిక విషయాలు పరిశీలిస్తున్నానన్నారు. తమ 'విలేజి లెవెల్ వాటర్ సప్లై ఆపరేషన్ మెయింటినెన్స్ కమిటీ' ఆంధ్రప్రదేశ్‌లోని 7 జిల్లాల్లో వర్కుచేస్తున్నదన్నారు. రంగారెడ్డి, నల్గొండ, పశ్చిమ గోదావరి జిల్లాల్లో దాదాపు సర్వే పూర్తవుతుందన్నారు. ఇక శ్రీకాకుళం, ప్రకాశం, కర్నూలు, కరీంనగర్ జిల్లాలు వర్కుచేంచవలసి ఉన్నదని ఆయన తెలిపారు. జిల్లా ఒక నెల చొప్పున తిరిగి వాటర్ సప్లై స్కీములలో సాధకబాధకాలను విశ్లేషిస్తున్నామని శాస్త్రి పేర్కొన్నారు. నల్గొండ, ప్రకాశం జిల్లాల్లో నెదర్లాండ్ ప్రభుత్వం ఇచ్చే 150 కోట్ల రూపాయల సహాయంతో ఆయా జిల్లాల్లో 400 గ్రామాలకు రక్షిత మంచినీరు అందించాలనే లక్ష్యంగా ప్రభుత్వం ఉన్నదన్నారు. మన రాష్ట్రంలోని వాటర్ సప్లై నిర్వహణ విధానాలను తెలిపితే నెదర్లాండ్ సహాయం మంజూరు చేస్తుందని శాస్త్రి తెలిపారు. రాష్ట్ర ప్రభుత్వ ఆదేశాల మేరకు తమ కమిటీ మూడు నెలల నుంచి ఇన్వెస్టిగేషన్ చేస్తోందన్నారు. తమ కమిటీ లీడరు రిటైర్డ్ ఎకౌంటెంట్ జనరల్ భీమారావు ఆర్థిక విషయాలను పరిశీలిస్తారన్నారు.

EENADU,
W.GODAWARI EDTN,
OCT, 16, 1991,

మహారాజశ్రీ పెంటపాడు గ్రామ పంచాయితీ
కార్యనిర్వాహణాధికారివారి సముఖమునకు

పెంటపాడు గ్రామ పంచాయితీ వ బ్లాకు వాస్తవ్యుడు

తండ్రి దాఖలు

చేసుకొన్న ధరఖాస్తు.

అయ్యా!

పెంటపాడు గ్రామ పంచాయితీ ఏరియాలో వ బ్లాకు రోడ్డు వీధిలో ____ డోరు నెంబరుగల నా సొంత యింటికి ½'' డయా పైపు కనెక్షన్ యిప్పించ వలసినదిగా కోరుచున్నాను. తాము పర్మిషను యిచ్చిన వెంటనే తాము కోరినట్లు రూ. ?/- లు స్టాంపుపై అగ్రిమెంటు వగైరాలు వ్రాసి యివ్వగలవాడను. సురక్షిత మంచినీటి సరఫరా పథకమునకు సంబంధించిన బై లాలకు బద్దుడనై యుండగలవాడను.

పంచాయితీకి ప్రయివేట్ టాపు కనక్షనుకు చెల్లించవలసిన విరాళము చెల్లించి సదరు రసీదు యిందుతో జతపర్చుచున్నాను.

పెంటపాడు చిత్తగించవలెను.

ది.

పెంటపాడు గ్రామ పంచాయితీ 1964 వ సంవత్సరపు -102- 47

ఆంధ్రప్రదేశ్ గ్రామ పంచాయితీ చట్టమునందలి

సెక్షన్ 54 (VIII) ననుసరించి.

ప్రయివేటు వాటరు టాపు సప్లయి నిబంధనలు.

1. ప్రయివేటు వాటరు టాపు కొరకు యింటి యజమాని మాత్రమే ధరఖాస్తు దాఖలు చేయవలెను.

2 నీరు సప్లయి చేయటకు ప్రతి యింటికి ఒక సర్వీసు పైపు కనెక్షను మెయిను నుండి యివ్వవలెను. వానికి స్క్రూడౌన్ ఫెరూల్ ½" స్టాపుకాక్ వుండవలెను. పంపురేటు పద్ధతిపై నీరు సప్లయికాబడు యిండ్లకును, పబ్లిక్ కుళాయిలకును గ్రామ పంచాయితీ కార్యనిర్వాహణాధికారివారు నిర్ణయించిన ప్రకారం నీటి సప్లయి క్రమబద్ధము కావలెను. ఏ యింటినికూడా ప్రక్కయింటినుండి నీరు సప్లయిచేయబడరాదు. అట్లు ప్రక్క యింటినుండి నీరు తీసుకొనబడినచో అది ఈ నిబంధనలకు వ్యతిరేకముగా నడుచుకొనునట్లే. మూడు రోజుల నోటీసుతో కార్యనిర్వాహణాధికారి ఆ కనెక్షన్ తీసివేయవచ్చును. దాని వలన కలిగిన నష్టమునకు పంచాయితీగాని, కార్యనిర్వాహణాధికారివారుగాని కోర్టు చర్యలకు బద్దులుకారు.

3. ఒక వ్యక్తి పేరుతో ఒక ప్రత్యేక మరో యింటికి మంజూరయిన సర్వీసు కనెక్షనును ఆ వ్యక్తి పేరుతోనే ఉన్నప్పటికి మరియొక యింటికి మార్చుచేయరాదు.

4 సర్వీసు కనెక్షను కావలసినవారు పంచాయితీ నిర్ణయించిన విరాళము చెల్లించివారి స్వంత ఖర్చులపై కనెక్షను తీసుకొనవలెను.

5. ఈ గ్రామ పంచాయితీ కార్యనిర్వాహణాధికారి ఉత్తర్వులు అందిన తదుపరి అందులో చూచించిన మేరకు పైపు కనెక్షను పొందవలెను.

6. మంచినీటి సప్లయి పంపులద్వారా పద్ధతి ప్రకారం జరుగవలెను కాని గ్రామ పంచాయితీ కార్యనిర్వాహణాధికారిగాని ఆ పద్ధతి ప్రకారం యివ్వబడు నీరు యింటి పనులకుగాక ఇతరపనులకు వాడబడుచున్నదిగాని లేదా దుర్వినియోగ మగుచున్నదిగాని తలచినచో యింటి కనెక్షను తీసివేయవచ్చును. అందులకగు ఖర్చు యింటి యజమానినుండి వసూలు చేయబడును.

7. యింటి యజమానిగాని నివాసముండువారికిగాని డిమాండు నోటీసు యిచ్చిన తరువాత సకాలములో కట్టకపోయినచో కార్యనిర్వాహణాధికారి నోటీసు లేకుండగనే కనెక్షనును తీసివేయవచ్చును. దానివలనవచ్చు కష్టనష్టములకు పంచాయితీగాని, కార్యనిర్వాహణాధికారివారుగాని బాధ్యత వహించరు.

8. నీటి సప్లయి బిల్లులు చెల్లించని కారణమున తీసివేయబడిన కనెక్షను మరలా యిచ్చుటకు రు. 5-00 లు వసూలు చేయబడును.

9. చేతి పుంపులు, ఎలక్ట్రికల్ మోటారులు, ఆయిలు యింజనులు నర్వీసు పంపులకు బిగించరాదు. పై చెప్పిన యంత్రములకు సంబంధించిన తొట్లకు సర్వీసు పైపును చేర్చుట పనికిరాదు.

10 నీరు నిలువచేయు టాంకులకు, తొట్లకు సర్వీసు కనెక్షనును బిగించుటగాని తగిలించుట గాని పనికిరాదు.

11. పంచాయితీ మంజూరుచేసిన ప్రతి సర్వీసు కనెక్షనును సక్రమముగా, నిర్వహింప తలయును రిపేరు వగైరాలు యజమాని స్వంత ఖర్చులపై చేయించవలెను.

12. పంచాయితీ కార్యనిర్వాహణాధికారివారు సర్వీసు కనెక్షనుకు సంబంధించిన ఫిటింగును వాని పద్ధతిని పరిశీలించుటకుగాని రిపేరుచేయుటకుగాని అవుసరమనితోచినచో తొలగించుటకు అధికారముకలదు.

13. ఇంటి యజమానిగాని నివాసముండువారుగాని సర్వీసు కనెక్షనుకు మంజూరయిన పైపుల నుండి రబ్బరుగొట్టముల మూలమునగాని ఏ యితర సాధనముల వలనగాని నీటిని తీసుకొనిపోరాదు.

14. ఒక్క అగ్ని ప్రమాదములలోతప్ప కార్యనిర్వాహణాధికారివారిచే ప్రత్యేక అనుమతి పొందిన వ్యక్తితప్ప పంచాయితీ నీటి సప్లయికి సంబంధించిన మెయిన్ పైపువాల్వుపై రాడ్డును తెరచుటగాని ఏ యితర విధముగా దానితో జోక్యము కలిగించుకొనుట గాని తగదు.

15. కార్యనిర్వాహణాధికారివారి అభిప్రాయములో తగినంత నీరు లభ్యములేనప్పుడుగాని, హెడ్‌వర్క్సులో నీటి సప్లయి యంత్రంగంలో అంతరాయం ఏర్పడిగాని మరమ్మత్తులు

ఉన్నప్పుడుగాని నివాసగృహములకు ఇతర సంస్థలకు పంపులు పద్ధతివారికి 24 గంటల నోటీసుతో నీటి సరసరా నిలుపుదల చేయుటకు కార్యనిర్వాహణాధికారివారికి అధికారము కలదు. అట్టి సందర్భములో కలిగే కష్టనష్టములకు కార్యనిర్వాహణాధికారి బాధ్యుడుకాదు.

16. విద్యుత్ సరఫరాలో ఓల్టేజి తగ్గిపోయినందువలనగాని, ఎలక్ట్రిసిటీ బోర్డువారు సరఫరా నిలిపివేసినందువలనగాని, తుఫానులు, వరదలు, భూకంపములు, కాటకములు, అగ్నిపర్వతములు ప్లేలుట మొదలగు ప్రకృతి వైపరీత్యమువలన నీటి సరఫరా నిలిచిపోయినచో వచ్చే కష్టనష్టములకు పంచాయితీ బాధ్యత వహించదు.

17. ప్రతి సర్వీసు కనెక్షను ½'' పైపు విషయములో మాత్రము మెయినులో బెజ్జము ½ వుండవలెను. సర్వీసుకనెక్షను పంపురేటు పద్ధతిలో యిచ్చినప్పుడు లేదా పబ్లిక్ కుళాయికు, కనీస అవుసరాలు గల గంటలలో నిమిషానికి ఒకగాలను వచ్చేటట్టుగా క్రమబద్ధం చేయాలని అన్ని పంపులు ½'' దారకు మించరాదు కట్టివేయడానికి వీలైన విధంగా ఉండాలి.

18 సర్వీసు కనెక్షనులోగల పంపులు ఇతర ఫిటింగులు అన్నియు కార్యనిర్వాహణాధికారి లేఖికగా తనిఖీచేయుటకు వీలుగా ఉండవలెను. యింటి యజమాని లేదా నివాసముందువారు పంచాయితీ అధికారులు తనిఖీచేయు అవకాశం కలిగించుటకు నిరాకరించినట్లయితే మూడు రోజుల నోటీసు ఇచ్చి నీటిసప్లయి తొలగించివేయవలెను.

11. సర్వీసు కనెక్షను ఇచ్చినచోట గొట్టముగాని, పంపుగాని దానిలో నుండి వచ్చునీరుతో మునిగిపోయే విధముగా బిగించరాదు. ఆ పంపువద్దపడిన వాడకపు నీరుదగ్గరలో నున్న పంచాయితీ మురుగునీరు కాలువలోనికి పోవునట్లుగా బిగించవలెను.

20. పంపులు పద్ధతి ప్రకారం సప్లయి చేయబడిన నీటికి ఛార్జీలు దిగువ విధముగా వసూలు చేయబడును.

1. మొదటి పంపుకు రు. 8-00 నెలకు అందలి భాగమునకు

2. అదనముగా వేయబడు టాపునకు నెల 1-కి టాపు 1-కి } రు. 6-00 ,, ,,

21. పై నిబంధనలను వ్యతిరేకించి నడుచుకొన్నవారికి ఈ విధంగా శిక్ష విధించబడును.

(ఎ) సర్వీసు కనెక్షను తీసివేయవచ్చును.

(బి) రు. 50-00 జరిమానా విధించవచ్చును లేదా మొదటి నేరమునకు శిక్షవిధించిన తర్వాత కూడా వ్యతిరేకించినచో రోజుకు రు. 10-00 జరిమాన వేయవచ్చును.

ప్రయివేటు ఆవరణలోనికి నీరు సప్లయి చేయుటకు సంబంధించినంతవరకు పంపులు వేయుట, పెంచుట, రిపేరు మొదలగు పనులు కార్యనిర్వాహణాధికారి లైసెన్సు యిచ్చిన ప్లంబర్లు మాత్రమే చేయుటకు అనుమతింపబడుదురు.

పై నిబంధనలకు అంగీకరించడమైనది.

80

COPY OF:-

GOVERNMENT OF ANDHRA PRADESH
PANCHAYATI RAJ AND RURAL DEVELOPMENT DEPARTMENT

Memo.No.102191/Estt.IV/88-1 dated 9.1.89

...

Sub:- Establishment - Gram Panchayats - Appointment of Labour on contract basis - Instructions issued.

Ref:-1) G.O.Ms.No.100 Fin & Plg (FW) Department dt.5.1.88
2) Memo.No.1582/Ser.A/88-2 GAD. dt.8.9.88

...

An instance has come to the notice of the Government wherein a Gram Panchayat has sought permission to employ persons on contract basis to attend to sweeping of roads, maintenance of water supply, electricity, as the existing staff are not able to cope with the increased work load. The Government have examined the matter and keeping in view the instructions contained in the reference second cited, issue further instructions in this regard.

The practice of employing people on NMR basis daily wages has been resulting in gradual over manning in the Government employment and further pressures for regularisation. Keeping in view the need to restrict the wage bill of the staff so as to utilise the maximum resources for developmental activities, Gram Panchayats are hereby permitted to let out the sweeping of roads, cleaning of side drains maintenance of water supply, electricity and scavenging on contract basis meeting the expenditure on the contract from out of their own funds if the staff available are not adequate to copy with the work involved; after taking permission from the District Panchayat Officer. District Panchayat Officers will scrutinise such proposals keeping in view the present directions of the Government not to exceed the establishment cost beyond 30% of the income, and give ~~expenditure~~ expeditious clearance while doing so, care should be taken to cure monopolistic tendering.

Proposals for additional staff/NMR employment/daily wage employment will not be considered by the Government.

M. V. NATARAJAN
SECRETARY TO GOVERNMENT.

//true copy//

Roc.No.459/89.M.Pts. West Godavari Collectorate(Pt.Wing)
Eluru, Dated: 26.1.89

Copy of the Memo. communicated. They are requested to follow with instructions issued in Govt. Memo. scrupulously while sending proposals.

Sd/- S. Krishna,
District Panchayat Officer,
West Godavari, Eluru.

To
All Executive Officers of gram panchayats
All Extension Officers (Pts) in the District - They should communicate the contents of the Govt.Memo. in Telugu to the Sarpanches of all Non-Notified Gram panchayats in their jurisdiction without fail.
All Divisional Panchayat Officers in the District - They should see that the proposals submitted by Non-Notified or Notified Gram Panchayats are thoroughly verified in terms of the Govt. Memo. and to submit them with their recommendation if necessary.
/t.c.b.s./

/t.c.b.s./

SUPERINTENDENT.

Copy of :

GOVERNMENT OF ANDHRA PRADESH
PANCHAYATI RAJ AND RURAL DEVELOPMENT DEPARTMENT

Memorandum No.28008/RWS.I/88-1. Dated : 27-4-1989.

Sub:- Rural Water Supply - Maintenance of spare pumpsets at Mandal level and taking up of works for water scarcity to emergency from the general funds of Zilla Praja Parishads and Mandala Praja Parishads - Orders - Clarification issued.

Ref: G.O.Ms.No.737/Panchayati Raj and Rural Development (RWS.I). Department dated.20-12-1988.

In the G.O. cited orders were issued permitting Zilla Praja Parishads and Mandala Praja Parishads for taking up works for relieving water scarcity in emergencies from their general funds upto an extent of 10%.

2. During the meeting of Chairman, Zilla Praja Parishads held recently they have requested the Government to permit the Zilla Praja Parishads/Mandala Praja Parishads to spend from general funds for undertaking urgent repairs.

3. The Government have examined the matter carefully and hereby permit the Zilla Praja Parishads/Mandala Praja Parishads to spend 10% of their general funds for sinking new bore wells, transportation of water and repairing equipment/structure in order to meet the water scarcity.

4. This Memo. issued with the concurrence of Finance and Planning (Finance Wing) Department vide their U.O.No.R-89-4-99-3757-PS-89 dated.24.4.1989.

Sd/- P.K.Doraiswamy,
Principal Secretary to Government.

// True Copy //

D.Dis.No.C4-6637/89.
Dated. 13.5.89.

Zilla Praja Parishad Office,
West Godavari, Eluru.

Copy forwarded to all Presidents of Mandal Praja Parishads in the District for information and necessary action.

Sd/- V.Satyanarayana Raju,
For Dist.Development Officer.

To
The Presidents of Mandal Praja Parishads in the District.
All Mandal Development Officers in the District.
Copy to S.F.

// t.c.b.o.//

SUPERINTENDENT 15/5/89.

svs/

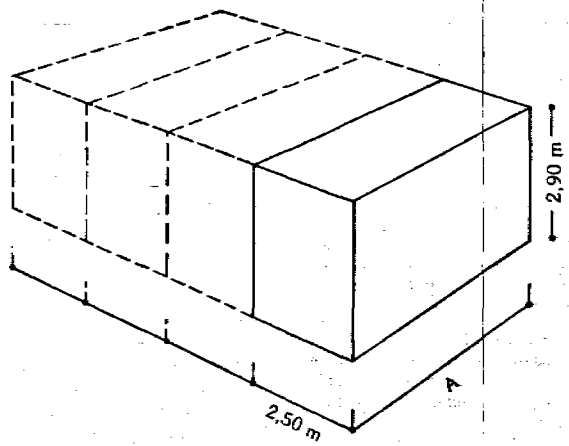
Arrangements have been made so that the str[illegible] is equally distributed over the two

To keep the facility simple and robust, the treatment lines are of the variable water-level type.
No outlet regulator or clogging compensator is required, thus avoiding extra maintenance.
If preference is given to the installation of a regulator for plants of larger capacity it is primarily to reduce total filter height, and consequently the cost of the civil works, a drawback that the use of CLARIBLOC avoids.

In the same light, the filter medium consisting of regular grain-size quartz is backwashed exclusively.
This washing method consumes more water than for simultaneous backwash and air-scour but in compensation it also offers the great advantage of being extremely simple.
In certain cases CLARIBLOC can also be fitted with booster pumps for air scour as an extra supply.

A standard range of treated-water tanks has also been designed with capacities that are carefully adapted to the CLARIBLOC flow rate.

These metal or plastic tanks can be used to avoid the necessity of building reservoirs, particularly in the case of temporary waterworks or places that are of difficult access.



		CB1	CB2	CB3	CB4	CB5
Flow rate	m³/h	12	17	25	38	50
Clearance	A (m)	2,53	3,32	4,71	6,44	8,13

otv
traitements et valorisation
"Le Doublon" 11, avenue Dubonnet - 92407 Courbevoie Cedex - France
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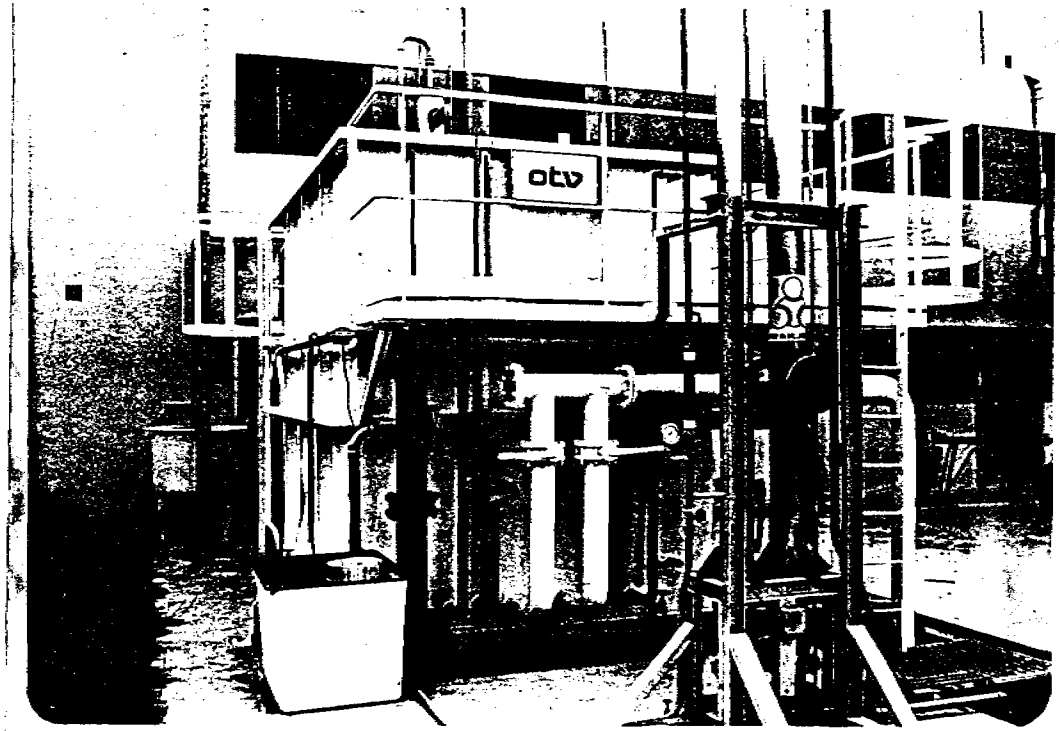
traitements et valorisation

Mobile water-treatment plant



The water-treatment engineer is frequently faced with particular problems that may be difficult to solve.

Mostly concerned are the smaller types of plant being built in places where conditions are not easy, e.g. :

- a country where qualified labour is rare and especially workers trained in water treatment techniques,
- a site that is difficult to reach,
- repairs to obsolete or ailing plant
- holiday-season saturation of certain plants and the necessity to level the peak consumptions,
- potable water must be supplied in exceptionally critical circumstances, such as national disaster,

Only standard-unit designs can comply with these requirements and they must be capable of meeting such demanding conditions as :

- short-term availability,
- rugged construction,
- easy transportation and installation,
- easy commissioning and running conditions,
- operating safety obtained by sizing the plant so as to leave sufficient margins for safety,
- minimum maintenance.

Prefabrication is the only way to cope with such conditions, without forgetting that the units must also be adaptable to the treatment of all-quality waters.

This was what led to the invention of the CLARIBLOC a complete, self-supporting and mobile treatment plant.

Principle

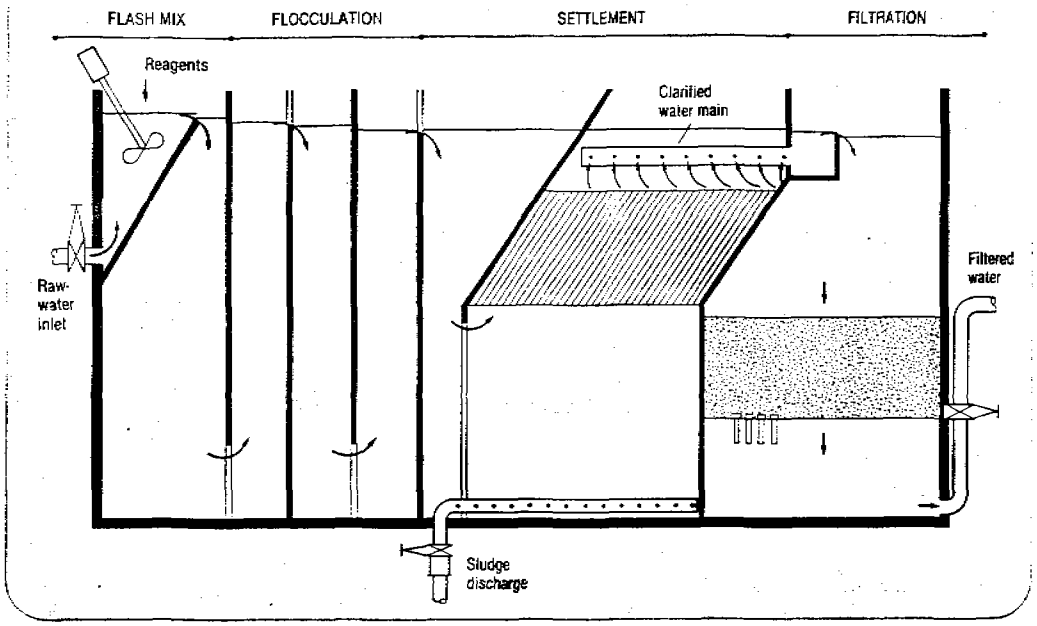
In order to obtain the safest treatment possible, CLARIBLOC was purposely designed according to the same criteria as a traditional plant functioning on the principle of « rapid filtration » or, in other words, clari-flocculation followed by filtration.

A sequence combining these three forms of treatment is the only way to solve the most complex of the cases mentioned above.

The CLARIBLOC is eminently suitable for smaller utilities designed to supply townships of up to approx. 10,000 inhabitants.

The safety margins adopted when sizing the different parts of the CLARIBLOC are designed to meet all the surface water characteristics usually encountered.

Operating scheme



Results obtained with ClariblOc

With CLARIBLOC, raw water from the usual ground or surface resources can be used to produce water for human consumption that complies with all French and international potability standards.

Of course the parameters of the initial raw-water must be such that it responds to the traditional clarification methods.

Should there be any special pollution hazard, adequate additions to the standard facility will be made.

How the Clariblo[illegible] functions

Depending on the nature of the raw-water, the reagents used for its treatment will vary in kind and in number.

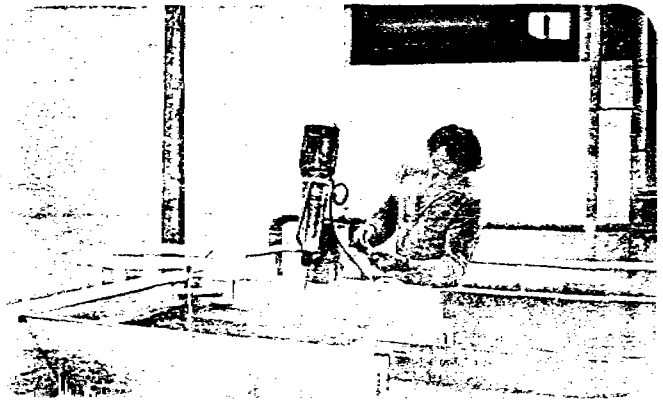
For instance, a given tye of water may simply need the use of a coagulant and a disinfectant while others may need treating with an oxidizing and/or a neutralizing reagent.

If the quality of the water makes it particularly difficult to deal with it may be necessary to use a flocculation aid.

Further cases may occur for which the UNIRAC system, complementary to the CLARIBLOC, was designed.

Mounted on a skid base, it carries all the apparatus required for the use of reagents that can be combined in different ways.

The skid base also carries CLARIBLOC operating appurtenances, i.e. the filter washing pump and the main electric control panel.



Main characteristics

[illegible] - Reagent mix

The capacity of the apparatus is such as to require a contact time of only a few minutes in order to obtain a perfect mix of the coagulant, possibly a flocculation aid and any other reagents with the raw-water.

A flash-mixer makes a perfectly homogeneous solution.

B - Flocculation

A contact time of twenty minutes has been arranged to get a maximum floc size from the massing of the coagulated colloidal particles.

To facilitate cohesion of the floc particles in formation, vertical baffle plates are judiciously positioned in the flocculation vessel so that the stirring speed gradually decreases.

This entirely hydraulic and perfectly tested system is just as satisfactory as mobile blades or turbines, providing the transiting flow rate does not seriously differ from the nominal value.

C - Settlement

Bearing in mind the application of this kind of plant, we chose a simple and reliable settlement method, i.e., static settlement as installed in numerous water treatment plants throughout the world.

To make the CLARIBLOC even more compact and more easily transportable it was fitted with counter-current type lamella modules.

Each space between the lamellae is in fact a small settlement tank of which the characteristic clarifying surface is provided by the horizontal projection of the surface area of each lamella.

In this way a very high sludge-retention capacity is provided in a small volume.

The Hazen velocity taken in designing the CLARIBLOC is exceptionally low-under 1 m/h.

The sludge deposited on each lamella slides down the latter as a result of the slope chosen.

A concentration hopper located under the lamella modules strips thicken the sludge that is disch[illegible] via a longitudinal perforated pipe.

The end of this pipe which is outside the apparatus, is fitted with an automatic valve controlled by a settable time device.

D - Filtration

Filtration finishes off the clarification process by fixing the finest of the floc particles that have not been deposited on the settlement units.

To prevent this floc from getting through the filtering medium the best course is to prevent it from breaking up.

Treatment lines in which the settled water is pumped before being filtered under pressure must be systematically avoided.

For this reason we have adopted filtration in open-air tanks which also makes it easier to check the filter washing operation.

Each CLARIBLOC comprises two filter tanks that confer excellent operating safety on the facility as a whole.