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WATER SUPPLY SCHEME FOR MAMDAPUR VILLAGE

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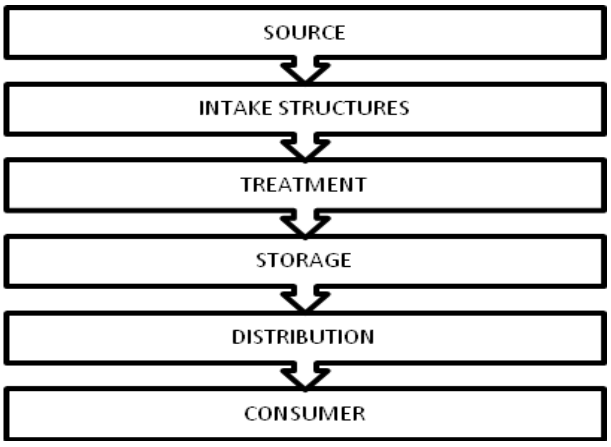
ABSTRACT-Water is a chemical compound made up of hydrogen and oxygen and it may occurs in liquid form or in solid form or in a gaseous form. All these three forms of water are extremely needful for survival. This resource fulfils luxuries and comforts and in addition to fulfilling basic necessities of life. No life can exist without water, since water is essential for life. It has been estimated that two third of human body is constituted of water.**MAMDAPUR** village is located in **Taluka - Karjat, District - Raigad.** This village is facing the problem of water shortage. After survey of the village we have found that before 2002, there were only **7 hand pumps** and **3 wells** existed. In 2002 under GRAM PANCHYAT, **PWSS (Pipe Water Supply Scheme)** had been finalised and currently it's become out dated due to overdue of scheme life & rising demand of village.The aim of our project is to analyse the water shortage problem of the MAMDAPUR village and to supply safe wholesome water to the people of village up to 2051

1-INTRODUCTION-A water supply system is a system for the collection, transmission, treatment ,storage and distribution of water from source to consumers, for example, homes, commercial establishments, industry, irrigation facilities and public agencie

PROCESS OF WATER SUPPLY SCHEME



1.1-Need of Water Supply Scheme- It is necessary that the water which is supplied to the public must be free from all types of impurities, either suspended or dissolved in it. Therefore it is important to plan and build such a water supply scheme which would provide portable water free from any kind of contamination. Generally the water is obtained from well or springs i.e., groundwater free from impurities and it may be supplied to the public without adopting any method of purification. But it is found that the groundwater is filtered naturally through sand and gravel by filtration process. By this process, minute suspended and dissolved particles are removed. But it still contains harmful disease producing bacteria which are minutely-size living organisms not visible to eye. Thus public water supplies must be such that it should be provide adequate and reliable water to public.

1.2-About MAMDAPUR-

Fig 1: TARGET AREA

Mamdapur is the village situated near Neral village & on the side of old Mumbai - Pune national highway i.e. NH4 and 23 km away from Matheran hill station which is situated besides this village. The village is having Primary School, High school & Engineering Colleges. Due to Neral city and industries the temporary public is living in village. This temporary public & students are considered as floating population. Electricity is available in the village. Main occupation of the villagers is agriculture. The village is situated in north east having hilly area and south west having plain area.

Latitude: 18* 48' 50.15" N

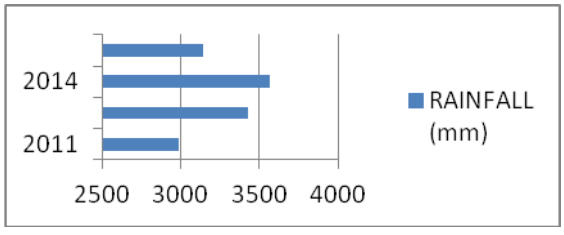
Longitude: 73* 18' 45.35" E

POPULATION DATA

DECADE	POPULATION
1951	431
1961	558
1971	753
1981	849
1991	1016
2001	1521
2011	1957

RAIN FALL DATA

Nearest Rain gauge station is at Taluka place Karjat.



Average rainfall : 3279 mm

2-EXISTING WATER SUPPLY ARRANGEMENTS-There is old existing pipe water supply scheme which is out dated due to overdue of scheme life & not properly working. Also water from existing open well & bore well are found very short so that people aren't able to fulfil their basic needs. The village doesn't has its own water supply but receives it from a combined water supply scheme which includes a number of villages.

2.1-SCHEMES:

1967-2002- In this scheme there was no filtration plant or any kind of treatment given to the water. The water was just treated using sedimentation and the water was distributed by using gravity method. Areas covered in this scheme were **NERAL,HETKAR AALI ,MOHACHI VADI ,KOMAL WADI , TEP ALI , DHAMOTE,MAMDAPUR,**etc.

2002-AT PRESENT-After the failure of the previous scheme and due to increase in the population of the same villages a new water supply scheme was proposed in year 2002.This scheme was designed for a population of 50000 souls of the above mentioned villages. This scheme included a jack well located at KUMBHE village. Water is pumped through this well 24*7 hours non-stop using 100HP pumps.

Fig 2: JACKWELL AT KUMBHE VILLAGE

The water which is pumped from this well reaches a water treatment plant located at BORLE village which is at a distance of 1KM from the well. Water here is given treatment using sedimentation tanks and sand filters.

Fig 3: WATER TREATMENT PLANT AT BORLE VILLAGE

Later on the treated water is stored in 2 tanks having a capacity of 10 Lakh liters each using 75hp pumps. These tanks are located just above the treatment plant at an higher altitude.

Fig 4: 2 TANKS OF 10,00,000 litres EACH TO STORE WATER NEAR THE TREATMENT PLANT

Fig 5: 4,65,000 litres TANK AT MOHACHI VADI

From these tanks daily water is distributed using only gravity method to the villages mentioned above.

This scheme has also failed to meet the demands of MADAPUR village due to increase in population.The Gram Panchayat has provided 3 wells and 7 hand pumps for the villagers but they also fail to meet the water demands of the village. The wells are approx 40ft to 50ft deep and dry up at the beginning of March. The same is the case with the hand pumps.

MAMDAPUR wadi is a place 2km away from the main village where the is no pipeline scheme of year 2002.Here around 120 souls receive water only through the wells. Sometimes when the water in the well dries up completely in the month of May PANCHAYAT provides a tanker of 5000 litres at the rate of Rs 600 per day. This water is discharged into the wells for the people to use. An attempt for ground water was made by digging a bore well but it also failed after going below 250ft.

WELL LOCATED AT MAMDAPUR WADI

Fig 6: JUNE 2015

Fig 7: MARCH 2016

No pumps or any other arrangements have been made on the wells. People here have to carry water on their heads to their respective homes.

Fig 8: 13 YEAR OLD HAND PUMP PROVIDED BY PANCHAYAT

PRESENT CONDITION OF VILLAGE

CONNECTIONS IN THE VILLAGE	150 nos.
THROUGH 1 CONNECTION (APPROX)	80 litres/day
EXISITING TOTAL SUPPLY	12000 litres/day
TOTAL POPULATION (ACC TO CENSUS 2011)	1957 souls
PER CAPITA DEMAND (AS PER IS-1172:1993)	70 LPCD
TOTAL DEMAND	136990 litres/day
SHORTAGE	124990 litres/day

In the main village some of the houses have the pipeline scheme of year 2002.But water hardly is there which cannot even satisfy drinking needs as well. People who can afford to dig bore wells have satisfied themselves with it but some people are still dependent on existing pipe line systems. Some people in order to receive more water attach pumps to pipe lines which is not legal. Due to this water pressure to other person gets automatically reduced. There's no proper distribution of water. The water pipe lines are been provide within the drainage lines.

Fig 9: WATER PIPE LINES IN SEWER LINES

3.NEW PIPED WATER SUPPLY SCHEME-In new scheme water will be drawn from ULHAS river which is 1600m away from the village and it will be treated with the conventional treatment of water and distributed to the villagers by gravity system.

4.CONCLUSION-The village is having Primary & High schools, also due to Neral city and industries the temporary migration is being seen in the village. There is old existing pipe water supply scheme which is out dated to overdue of scheme life and not properly working. Also water from existing open well and bore well are found to be very short. Due to shortage of water to current population & this shortage will increase two to three times with the increasing population, hence a new Water Supply Scheme is to be proposed for the village to meet their water demands.

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