

Hours of pumping from source, Tubewell 6.5 Hrs at Intermediate stage.
Ref: SWSM Guidelines vide letter number 1499/E-46/2021 dt 12-02-21

Rate of flow m³/Hr at intermediate stage

m ³ /Hr	LPM		LPM
72.15	1203	Say	1250

Year/Stage	Demand (KLD)	Operating hours
Initial Stage Year 2022	361	5
Intermediate Stage Year 2037	469	6.50
Ultimate Stage Year 2052	603	8.36

1.6 SOURCE OF WATER SUPPLY

Water discharge of 1250 LPM is required as per base year demand considering 6.5 hrs of pumping. Considering design flow at intermediate stage as 60% of safe yield from tubewell, minimum tubewell yield required is 2090 LPM

Tube well yield required $1250/0.6 = 2083$ LPM

Tube well yield required, roundedup	2090 LPM
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Ref: DISTRICT GROUND WATER BROCHURE OF SANT RAVIDASNAGAR DISTRICT, UP, compiled by CGWB 2012-13. Exploratory tubewells drilled up to 144m to 307m have shown yields up to 2065 & 2876 LPM. Considering probable long term depletion of yield, the 2876 LPM may be taken as characteristic maximum yield potential of tube wells in the district.

Hence we assume that required yield is available in this proposed area. Hence 1 tubewell with discharge rate of 2090 LPM has been considered for this project

1.7 REQUIREMENT OF TUBEWELLS & PUMPING HOURS

Table 17: Tubewell discharge calculation

Sn	Particulars	Stage / Year		
		2022	2037	2052
1	Population	5578	7249	9315
2	Rate of Water Supply LPCD	64.71	64.71	64.71
3	Daily Water Demand in KLD	361	469	603
4	Discharge of Tubewell Required in LPM	2090	2090	2090
5	No of Tubewell Required	1	1	1
6	Actual Pumping Hrs	5	6.5	8.36

Note: As per SWSM Guidelines vide letter number 1499/E-46/2021 dt 12-02-21, this project is proposed to be operated entirely on Solar power & panels shall be installed to meet power requirements for intermediate stage, subject to availability of the required land area. No state power utility connection is proposed in this project for pumps, actuators & control system.

The suggestion by CE (E&M) vide his letter no. 130/2062-0087/21 dtd. 270521 ; para 8 - that for lighting and fan load provision of 2 kW load in solar plant, alongwith provision of inverter and battery may be made shall be assessed during detail engineering.



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ESTIMATE FOR
MAKANPUR GRAM PANCHAYAT WATER SUPPLY SCHEME
 UNDER - SWM
 BLOCK - Sulayyan , DISTRICT - Sam Roadra nagar
 Estimate of Cost of tubewell construction

Bohrer Size = 600 X 500 mm → 150 mhr
 Assembly Size = 300 X 200 mm → 135 mhr
 Pump = 1250 LPH → 51.9 mhp → 25 HP

Sl No.	Item of work	No.	L	B	HD	Qty	Rate	Unit	Amount	Remarks
1	Drilling of Bohrer for Tub well construction by DCRC/OTY Rig Machine including transportation, erection, dismantling of Rig and associated T&P complete in all respect including required all material labor etc.									As per RFP.
2	Transportation, installation Dismantling of Rig machine and logging					1	1,56,159.07	Job	1,56,159	
	DC/RC Drilling up to 100Mtr.									
	Tubewell construction									
450 MMØ						0	-	Rmt	-	
500 MMØ						0	2,717.58	Rmt	1,35,879	
550 MMØ						40	3,24,198	Rmt	1,29,679	
600 MMØ						0	-	Rmt	-	
650 MMØ						50	3,03,375	Rmt	1,51,688	
700 MMØ						0	-	Rmt	-	
750 MMØ						0	-	Rmt	-	
800 MMØ						0	-	Rmt	-	
850 MMØ						0	-	Rmt	-	
900 MMØ						0	-	Rmt	-	
950 MMØ						0	-	Rmt	-	
1000 MMØ						0	-	Rmt	-	
450 MMØ	DC/RC Drilling from 301 Mtr. To 400 Mtr Deep & above					0	-	Rmt	-	
500 MMØ	DC/RC Drilling from 301 Mtr. To 200 Mtr Deep					0	-	Rmt	-	
550 MMØ	DC/RC Drilling from 301 Mtr. To 300 Mtr Deep					0	-	Rmt	-	
600 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
650 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
700 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
750 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
800 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
850 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
900 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
950 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
1000 MMØ	DC/RC Drilling from 301 Mtr. To 400 m					0	-	Rmt	-	
1	Development of / Pushing of tubewell									
2	Tubewell Assembly SOR NO. 3									
3	Installation of pump & pipe as per is 4210									
4	Installation of pump & pipe as per is 4210									
150 MMØ						0	-	Rmt	-	
200 MMØ						33	2,948.43	Rmt	97,507	
250 MMØ						54	3,294.66	Rmt	1,78,113	
300 MMØ						0	-	Rmt	-	



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Sl No.	Item of work	No.	L	B	HD	Qty	Rate	Unit	Amount	Remarks
1	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
100 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
150 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
200 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
250 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
300 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
5	MS fittings such as clamp, ball plug, reducer, well cap, ginder & support structure					1	32,249.79	LS	32,250	
6	MS fittings such as ring & cone guide					135	473.02	Rmt	63,857.70	As per RFP.
7	Screening of above assembly with welding of parts complete in all respect with all required material, T&P labour etc SOR NO. 4									
100 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
150 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
200 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
250 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
300 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
1	Lowering from 101 Mtr. To 200 Mtr. Deep					0	-	Rmt	-	
150 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
200 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
250 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
300 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
1	Lowering from 201 Mtr. To 300 Mtr. Deep					0	-	Rmt	-	
150 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
200 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
250 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
300 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
1	Lowering from 301 Mtr. To 400 Mtr. Deep & above					0	-	Rmt	-	
150 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
200 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
250 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	
300 MMØ	MSRW Pipe standard pipe as per IS 8110					0	-	Rmt	-	



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Makan Pul, Suliyawon

PUMP - 1250 LPH

TW - 2090 LPM

300mm PP - 54.0m

200mm PP - 39.0m

200mm ISD - 36.0m

