

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

	m ³ /Hr	LPM		LPM
Rate of flow m ³ /Hr at intermediate stage	57.85	965	Say	1000

Year/Stage	Demand (KLD)	Operating hours
Initial Stage Year 2022	283	4.89
Intermediate Stage Year 2037	376	6.50
Ultimate Stage Year 2052	500	8.64

1.6 SOURCE OF WATER SUPPLY

Water discharge of 1000 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 1670 LPM

Tube well yield required $1000/0.6 = 1667$ LPM

Tube well yield required, roundedup	1670 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 1670 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	4370	5810	7730
2	Rate of Water Supply LPCD	64.71	64.71	64.71
3	Daily Water Demand in KLD	283	376	500
4	Discharge of Tubewell Required in LPM	1670	1670	1670
5	No of Tubewell Required	1	1	1
6	Actual Pumping Hrs	4.89	6.5	8.64

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.

**ESTIMATE FOR
SARAI MISRANI GRAM PANCHAYAT WATER SUPPLY SCHEME
UNDER - SWSM**

**BLOCK- Gyanpur , DISTRICT- Sant Ravidas nagar
Estimate of Cost of Tubewell construction**

Sl.No.	Item of work	No.	L	B	H/D	Qty	Rate	Unit	Amount	Remarks
1	Drilling of Borehole for Tube well construction by DC/RC/DTH Rig Machine including transportation, erection, dismantling of Rig and associated T&P complete in all respect including required all material labor etc. SOR NO. 2					1	1,56,159.07	Job	1,56,159	As per RFP.
	Transportation, Installation Dismantling of Rig machine and logging of bore hole									
	DC/RC Drilling up to 100Mtr.									
	Tube well construction									
	400 MMØ					0		Rmt	-	
	450 MMØ					0		Rmt	-	
	500 MMØ					40	2,717.19	Rmt	1,08,688	
	600 MMØ					60	3,241.68	Rmt	1,94,501	
	DC/RC Drilling from 101 MT. To 200 Mtr.Deep									
	450 MMØ depth 101 to 200 m					0		Rmt	-	
	500 MMØ depth 101 to 200 m					50	3,033.75	Rmt	1,51,688	
	600 MMØ depth 101 to 200 m					0		Rmt	-	
	DC/RC Drilling from 201 MT. To 300 Mtr.Deep									
	450 MMØ depth 201 to 300 m					0		Rmt	-	
	500 MMØ depth 201 to 300 m					0		Rmt	-	
	600 MMØ depth 201 to 300 m					0		Rmt	-	
	DC/RC Drilling from 301 Mtr. To 400 Mtr.Deep & above									
	450 MMØ depth 301 to 400 m					0		Rmt	-	
	500 MMØ depth 301 to 400 m					0		Rmt	-	
	600 MMØ depth 301 to 400 m					0		Rmt	-	
2	DTH Drilling upto 200.0 Mtr.Deep 200/165 MMØ (in over burden/Hard Rock)					0		Rmt	-	
3	Development / Flushing of tubewell					0		Hr	-	
4	Tube Well Assembly: SOR NO. 3 MSERW plain pipe.As per IS 4270									Ref: RFQ Clause 7, pg 56; IS 11189-2020 clause 6.1.1 & 6.2.2
	100 MMØ							Housing pipe 300 MMØ,54 m		
	150 MMØ					0		Rmt	-	
	200 MMØ					0		Rmt	-	
	300 MMØ					45	2,546.43	Rmt	1,14,589	
						54	3,794.68	Rmt	2,04,913	

Sl No.	Item of work	No.	L	B	H/D	Qty	Rate	Unit	Amount	Remarks
	MSERW Pipe slotted pipe as per IS 8110									
	100 MMØ slotted pipe					0	-	Rmt	-	
	150 MMØ slotted pipe					0	-	Rmt	-	
	200 MMØ slotted pipe					36	3,828.43	Rmt	1,37,823	
	300 MMØ slotted pipe					0	-	Rmt	-	
5	MS fittings such as clamp, bail plug, reducer, well cap, girder & support structure					1	32,249.79	LS	32,250	
6	MS fittings such as ring & centre guide					135	471.02	Rmt	63,587.70	Ref: 7.7 of IS 2800-2019
7	Lowering of above assembly with welding of parts complete in all respect with all required material, T&P, labour, etc. SOR NO. 4									As per RFP.
	Lowering up to 100 Mtr. Deep									
	100 MMØ MSERW Plane/Slotted Pipe					0	-	Rmt	-	
	150 MMØ MSERW Plane/Slotted Pipe					0	-	Rmt	-	
	200 MMØ MSERW Plane/Slotted Pipe					46	389.45	Rmt	17,914.70	
	300 MMØ MSERW Plain/Slotted Pipe					54	489.31	Rmt	26,422.74	
	Lowering from 101 Mtr. To 200 Mtr. Deep									
	150 MMØ MSERW Plane/Slotted Pipe deep 101 to 200 m					0	-	Rmt	-	
	200 MMØ MSERW Plane/Slotted Pipe deep 101 to 200 m					35	589.97	Rmt	20,648.95	
	300 MMØ MSERW Plain/Slotted Pipe deep 101 to 200 m					0	-	Rmt	-	
	Lowering from 201 Mtr. To 300 Mtr. Deep									
	150 MMØ MSERW Plane/Slotted Pipe deep 201 to 300 m					0	-	Rmt	-	
	200 MMØ MSERW Plane/Slotted Pipe deep 201 to 300 m					0	-	Rmt	-	
	300 MMØ MSERW Plane/Slotted Pipe deep 201 to 300 m					0	-	Rmt	-	
	Lowering from 301 Mtr. To 400 Mtr. Deep & above									
	150 MMØ MSERW Plane/Slotted Pipe 301 to 400 m Deep and above					0	-	Rmt	-	
	200 MMØ MSERW Plane/Slotted Pipe 301 to 400 m Deep and above					0	-	Rmt	-	
	300 MMØ MSERW Plane/Slotted Pipe 301 to 400 m Deep and above					0	-	Rmt	-	

Salai Mustani, Gyandpur

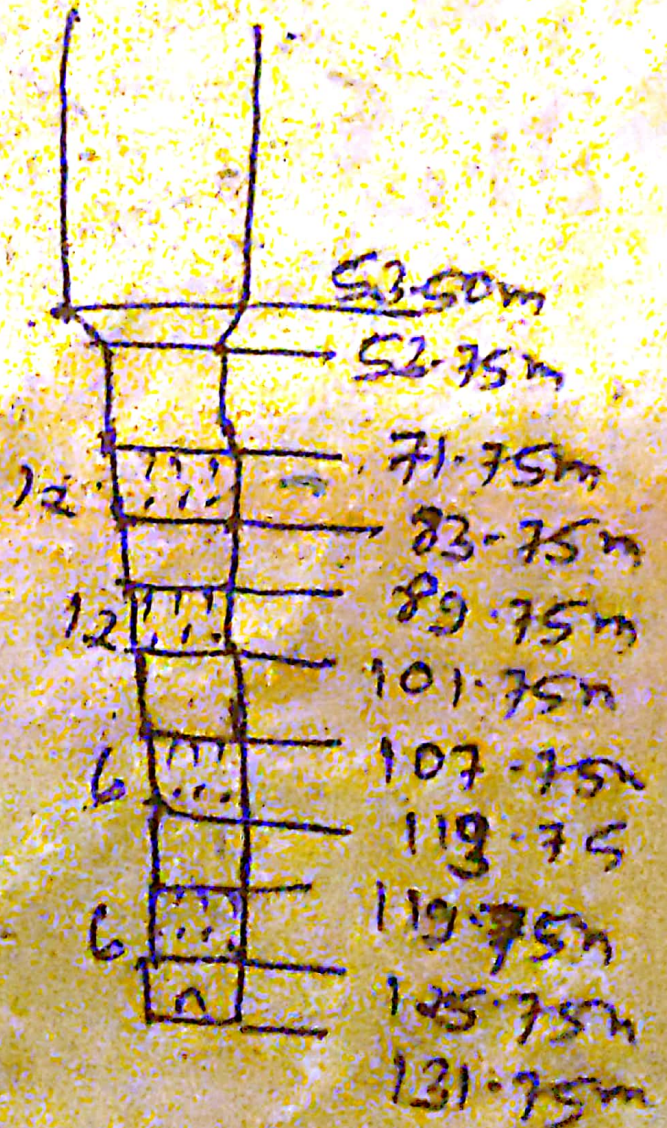
Pump - 1000 LPM

T/W - 1670 LPM

300 m² / PD - 54.0h

200 m² / PD - 42.0h

200 m² / PSP - 36.0h





Aqua Xplore

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Advisor- Dr. R. A. Yadav, ex- Manager (Groundwater), U. P. Jal Nigam

Ref 1016 - S/ AX- 2022

Date 16.10.2022

Geophysical Borehole Logging Report

Name of the site : Sarai Mishrani, Block- Gyanpur

District : Sant Ravidas Nagar

Date : 16.10.2022

Depth logged : 140.0 mbgl

Depth drilled : 150.0 mbgl – as reported

Logged by : Aqua Xplore

Presence : Rep. of M/S Welspun Enterprises Limited, Sant Ravidas Nagar, U.P.

Based on the interpretation of geophysical logs, following information may be deciphered, particularly with respect to salinity of the formation water;

Sl.No.	Depth range(mbgl)	Thickness(m)	Remarks
1	40.0--53.0	13.0	Good all
2	62.0--66.0	4.0	
3	68.0--84.0	16.0	
4	89.0--102.0	13.0	
5	107.0--114.0	7.0	
6	116.0--138.0	22.0	

Note. All zones are intermixed with kankar.

for Aqua Xplore

CC;

1. Welspun Enterprises Limited, Sant Ravidas Nagar, U.P.