

O.No/SGPune/GSDA/Tech/LGW/171/2024

Dated 19/08/2024

To,
Ronak Dhole
Dhole Patil Education Society,
Wagholi, Haveli
District Pune

Subject- Regarding Hydrogeological Survey at Gat no.1284A of Village Wagholi, Taluka Haveli,

District Pune

Reference- 1. Your Letter dated 08/08/2024

2. Hydrogeological Survey Challan dated 09/08/2024

With reference to the above subject a hydrogeological survey was carried out at Gat no.1284A of Village Wagholi, Taluka Haveli, District Pune. At the time of hydrogeological survey applicant Shri. Ronak Dhole was present.

The details of Proposed site are as follows:

Name Of Village	Wagholi
Co-Ordinates	18°35'00.3" N and 73°59'58.7" E
Elevation	547 m
Toposheet & Morpho Unit	47 F/14
Watershed No.	BM 46
Category	Safe (As per Groundwater Assessment 2022-23)
Rock Type	Basalt
Aquifer (Water Bearing Zone)	Shallow Aquifer (Jointed / Fractured Basalt)

Location

The village Gat no.1284A is located in the Northeast direction of Pune City at a distance of 11.00 km. The area under study i.e., said Gat no.1284A is located in Southwest direction of Village Wagholi at around distance of 2.8 km.

Geomorphology- The topography is a moderately dissected plateau. A gentle to medium slope is in the South direction. There is major drainage the Mula Mutha river flowing in the South direction at a distance of 900mt. **Geology-** The area of village Wagholi consists of different layers of Basalt and the thickness varies from 1.00 to 19.00 mt which are formed during the Upper Cretaceous to Lower Eocene period of Geological time scale. The basalt is dark grey to black in color, fine to medium grained and medium jointed and fractured in nature. The geological/lithological data as per field observations in the surveyed area is as below.

Lithology	Brownish coarse-grained soil	0.00 – 1.00 mt
	Highly to moderately weathered basalt	1.00 – 6.00 mt
	Greyish black colored, fine to medium grained jointed fractured vesicular basalt	6.00 – 20.00 mt
	Greyish black colored compact Massive Basalt	Below 20.00 mt

Hydrogeological Conditions – At the surveyed area the soil thickness ranges from 0.00 to 1.00 mt the weathered basalt thickness varies from 1.00 to 6.00 mt, jointed and fractured vesicular basalt from 6.00 to 20.00 mt and from 20.00 followed by massive basalt. The entire area of the studied Gat no.1284A is underlain by the basaltic flows of Upper Cretaceous to Lower Eocene. Groundwater in the Deccan Trap occurs mostly in the weathered and fractured, jointed vesicular parts till 10.00 mt bgl under unconfined conditions. The

water bearing strata at deeper depths exists under semi confined to confined conditions at the depth of about 20-30 mt. From the groundwater availability point of view, the area has moderate groundwater yielding potential zone.

The availability of groundwater depends largely on surface and subsurface geology, geomorphology, natural drainage pattern, depth of weathering and the fractures present. Actual annual rainfall, groundwater extraction from other sources in the surrounding area is also the factor which controls and affects the availability of groundwater.

Observations - At the time of survey 6 Bore wells and a Dugwell was observed at applicant's gat number (Gat no.1284A). The existing borewells and dugwell are perennial in nature. Groundwater which is obtained from the existing bore wells and dugwell can be used for drinking and domestic purposes and can meet the water requirement which is 4,78,000 lt/day for drinking and domestic demand of the Gat no.1284A.

Sr. no	Source	Location Sr.no/Gat.no	Dimensions		SWL (summer)	Pump	Water availability
			Depth	Dia			
1	Dugwell	Gatno.1284A	20 mt	6 mt	20 mt(R)	7.5 HP	Around 1,74,000 lt./day
2	Borewell		60 mt	150 mm	20 mt(R)	2 HP	Around 48,000 lt./day
3			76 mt	150 mm	20 mt(R)	2 HP	Around 48,000 lt./day
4			106 mt	150 mm	35 mt(R)	2 HP	Around 56,000 lt./day
5			106 mt	150 mm	40 mt(R)	2 HP	Around 56,000 lt./day
6			106 mt	150 mm	48 mt(R)	2 HP	Around 48,000 lt./day
7			106 mt	150 mm	40 mt(R)	2 HP	Around 48,000 lt./day

Recommendations -

1. The category of the area as per the groundwater assessment 2022-23 is Safe, the available water should be strictly used for drinking and domestic purposes.
2. The groundwater quality should be analyzed twice in a year (pre and post monsoon) by the applicant from the water testing laboratory at his own cost. Also, water quality to be maintained hence RO is recommended.
3. To have sustainable groundwater, groundwater recharge from rainwater harvesting to the existing sources should be implanted so that groundwater will be available perennially.
4. The topographical, hydrogeological conditions and rainfall play an important role in fulfilling the requirement of drinking, domestic use. In view of sustainable groundwater for the drinking and domestic purpose the groundwater recharge through surface runoff and rainwater harvesting measures in a quantity equal to the extraction of groundwater from the existing sources is mandatory to the applicant.
5. In view of sufficient water requirements for drinking, domestic and irrigation use, it is strongly recommended that a minimum of 70% of the extracted ground water must be recycled and reused for further usage.
6. The rainwater harvesting structures should be implemented under the technical guidance of this office (GSDA Pune)
7. During the Scarcity period the Scarcity Rule of Maharashtra Groundwater (Development and Management) Act 2009 are mandatory to the applicant.

Surveyed by

Sujata R Sawale

Assistant Geologist

(Signature)
 +Bhaskar Dhote)
 Senior Geologist

Groundwater Surveys and Development Agency,
 Pune