



Office of the Senior Geologist
Groundwater Surveys and Development Agency, GoM.
Bhujal Bhavan, K.B Joshi Marg, Shivaji Nagar, Pune 05
Phone No 020 25521756/25521754 Email - srgeolpn@rediffmail.com

No. SG/GSDA/Pune/Tech/LGW/ 02 / 2024

Date- 02/01/2025

To,
Shri. Amit Dattatreya Ghule.
Gat no 865(P) and 866(P)
Village-Shindwane. Tal Haveli
Dist.Pune

Sub: Regarding Hydrogeological Survey at Gat no.865(P) and 866(P) of
Village- Shindwane, Tal Haveli. Dist Pune

Ref: Your application dated 29/08/2024

With reference to the above subject hydro-geological survey was carried out in the presence of concern personnel/s at the Gat no. 865(P) and 866(P) of Village Shindwane, Tal Haveli. Dist Pune. At the time of Hydrogeological survey the concern personnel Shri. Pramod Magar was present.

The details of the proposed site are as below.

Name of Village	Shindwane, Tal Haveli. Dist Pune
Co-ordinates	Lat -18° 26' 43" N, Long -74° 07' 45" E
Elevation (msl)	625.14 m
Toposheet& Quadrant No	47J/3 and 1B
Watershed No.	BM-51 ; 5/7
Morphozone	A ; Ab
Category	Semi Critical (As per Groundwater Assessment 2022-23)
Rock Type	Basalt

93

Aquifer (Water bearing Zone) Shallow Aquifer (Jointed and Fractured Basalt)

Location:

Village Shindwane Tal. Haveli Dist. Pune is located along the South East Metropolitan corridor of Pune, south of Pune - Solapur highway approx. at 5 km. The area under study i.e. said Gat no. 865(P) and 866(P) is located towards SE direction of Village Shindwane, Tal. Haveli. Dist. Pune.

Geomorphology:

The village area has undulating topography with gentle slope towards SE direction. Drainage of Village Shindwane, Tal. Haveli. Dist. Pune village shows dendritic drainage pattern.

Geology:

The area of the village Shindwane, Tal. Haveli. Dist. Pune consists of solidified layers of basalt and thickness of each layer varies from 10.00 to 15.00 meters and formed during upper Cretaceous to lower Eocene period of Geological time scale. The basalts are dark grey to black in colour, fine to medium grained, medium jointed and fractured in nature. For the proposed area the geological as well as lithological data is considered as per field observations and reported data.

Lithology	Greyish to brownish coarse grained soil	1.00 - 3.00 m
	Highly to moderately weathered Basalt.	3.00 - 6.00 m
	Greyish black coloured, fine to medium grained, jointed and fractured Basalt.	6.00 - 10.00 m
	Greyish black coloured partly jointed and fractured Massive Basalt	10.00 - 15.00 m
	Greyish black coloured compact Massive Basalt	Below 15.00 m.

Rainfall: - Shindwane, Tal. Haveli. Dist. Pune village receives rain from south-west Monsoon. On an average moderate to high rainfall. The average mean annual rainfall in the district is 708.80 mm.

Hydrogeological Conditions:

At the proposed area the Soil thickness is up to 3.00 m, the weathered basalt thickness ranges 3.00 to 6.00 m, jointed and fractured basalt ranges 6.00 - 10.00 m, greyish black coloured partly jointed and fractured massive basalt ranges 10.00 - 15.00 m and below 15.00 m the greyish black coloured compact massive basalt is present. The entire area of the studied Gat no. 865(P) and 866(P) is underlain by the basaltic lava flows of upper Cretaceous to lower Eocene age. Geologically the area is covered by jointed and fractured basalt.

Ground water in Deccan trap basalt occurs mostly in the upper weathered and fractured parts down to 1.00 - 12.00 m bgl under unconfined conditions. The water bearing strata at deeper depth exists under semi confined to confined conditions at a depth of about 30-45 m and 50-55 m. From the groundwater availability point of view, the area is moderate yielding groundwater potential zone.

The availability of groundwater as a source depends largely upon surface and subsurface geology, geomorphology, natural drainage pattern, depth of weathering and fractures present. Actual annual rainfall, groundwater extraction from other sources in the surrounding area, urbanization, topography modification are also the factors which control and affect the availability of groundwater.

Presently, at the said Gat no.865(P) and 866(P) there is a single groundwater source (dug well) present SE corner of Gat no 865. The details of existing groundwater source are given as below.

Sr. No	Source	Location Gat No.	Details of GW Source				Lifting Device	Water availability	Remarks
			Dimensions /Diameter in meters	Depth in meters	Water Level in m.				
					Winter	Summer			
I	Dug Well	SE of Gat no.865	9.80 m	15.0	5.10 m (PWL.)	Moderate yield	5 hp	70 Cum/ day	Canal command area

As per reported information from the applicant representative, the sources in the area adjoining Gat no 865(P) and 866(P) are mostly private dug wells and have moderate yield during summer season.

Observations:

On the basis of Hydrogeological survey done by this office, one groundwater source (Dug well) is present in Gat no 865 is currently used for irrigation purpose to irrigate approximately 8 acres of land(R). From the groundwater availability point of view, the surveyed area is moderate yielding groundwater potential zone (PLWS). By considering the existing source and the sources in the adjoining area 70 Cu. m/Day water may be available presently from the existing source seasonally.

Nevertheless, deficit in normal rainfall, increase in population density, excess groundwater extraction from surrounding areas and lack of groundwater recharge may create stress on the availability of groundwater. Following measures are recommended and are mandatory to the applicant.

Recommendations:

1. According to the application it is proposed to develop the area for residential plots at Gat No. 865(P) and 866(P), Village Shindwane, Tal-Haveli. At the time of any development process the applicant /company /every holder of a said land shall take all possible precautions to avoid the disturbance of the natural drainage system and aquifer system available.
2. The available groundwater should be strictly used for drinking and domestic purpose only. For future development of infrastructure, the requirement of water should be fulfilled by tanker water/untreated raw water so that extraction/utilization of groundwater is controlled.
3. If in future the additional water required for the drinking and domestic purpose, the water requirement should be fulfilled by the water supply connections of local authority and is mandatory to the applicant.
4. For the sustainable availability of groundwater, Roof Top Rainwater Harvesting measures to the existing/new groundwater sources is mandatory.
5. The rainwater harvesting structures should be implemented under the technical guidance of this office (G.S.D.A. Pune) and checked it from time to time.