



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 - srgcolpn@rediffmail.com

No. SG/GSDA/Pune/Tech/ 371-1 2019

Date 10/04/2019

To,

M/s Global Ashoka Fulgaon Industrial Park LLP,
Gat No 182-184, Plot No. 2, Fulgaon,

Taluka Haveli, Dist.Pune.

Sub : Regarding Hydrogeological survey for Groundwater availability at Gat No 182-184, Plot No. 2, Fulgaon, Taluka Haveli, Dist Pune.

Ref : 1. Your application dated 25/02/2019
2. Hydrogeological survey and Chemical Analysis fee submitted by Challan dated 02/03/2019
3. Water quality analysis report dated 13/03/2019

With reference to the above subject hydro-geological survey was carried out in the presence of concern personnel at the Gat No 182-184, Plot No. 2, village Fulgaon, Taluka Haveli, Dist Pune.

At the time of Hydrogeological survey the following concern personnels were present.
1. Shri. Keshav Mujumdar, Admin, 2. Shri. Kishor Dere, HSC Manager

The details of the village and proposed site are as below.

Fulgaon, Taluka Haveli, Dist Pune.

Co-ordinates
Lat -18° 39' 30.0" N, Long 74° 00' 50" E
Elevation (msl)
550.00 m

Toposheet& Quadrant No
47J/02 and 2A
Watershed No.
BM-36

Category
Safe (As per Groundwater Assessment 2013-14)
Rock Type
Basalt

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

Location:

The village Fulgaon is located towards North eastern direction of Pune City at a distance of about 30 km. The study area i.e Gat No 182-184, Plot No. 2 is located towards South eastern direction of Fulgaon at a distance of about 2 - 3 km and connected by village road.

Geomorphology:

The topography of Fulgaon village area is plain to gently sloping, and is sloping towards Northern direction. The study area i.e said Gat Nos. are located at plain to gentle sloping topography. The primary and secondary drainages are originated from Southern and

western direction of the said area and flows towards Northern direction. All the drainages are met to the Bhima River.

Geology:

The area of the village Fulgaon consists of solidified layers of basalt and thickness of each layer varies from 5.00 to 10.00 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. The geological as well as lithological section observed in the village area as below.

Lithology	Greyish to brownish coarse grained soil	0.00 - 1.50 m
	Highly to moderately weathered Basalt.	1.50 - 6.00 m
	Greyish black coloured, fine to medium grained, jointed and moderately fractured Basalt.	6.00 - 15.00 m
	Greyish black coloured partly jointed and fractured Massive Basalt	Below 15.00 m

Hydrogeological Conditions:

The entire area of the studied Gat.No. is underlain by the basaltic lava flows of upper Cretaceous to lower Eocene age. Geologically the area is covered by jointed and fractured basalt. At the studied Gat No. the Soil thickness ranges from 0.5 - 1.50 m, the weathered basalt thickness ranges 1.50-6.00 m, jointed and moderately fractured basalt below 6.00 - 15.00 m and Greyish black coloured partly jointed and fractured Massive Basalt below 15.00 m. Ground water in Deccan Trap Basalt occurs mostly in the upper weathered and fractured parts down to 2.00 - 15.00 m bgl under unconfined conditions. The water bearing strata at deeper depth exists under semi confined to confined conditions.

As per groundwater availability point of view the sources are located at moderate yielding groundwater potential zone. For the Groundwater availability for domestic use, the applicant has taken one Bore well at Gat.No. 182 plot No 2 and for drinking purpose packaged drinking water is used. The bore well depth is about 55.00 m (R), diameters of 150 mm, and the static water levels in Winter 7.00 m (R) and in Summer 12.50 m. The existing groundwater source is being used for domestic purpose.

The details of these groundwater sources are given below.

Sr. No	Source	Location Sr. No.	Details of Dug Well			Lifting Device	Remark
			Diameter	Depth in m	Water Level in m.		
1	Bore Well	182 plot No 2	150 mm	55 m (R)	7.00 m (R)	12.50 m	1.5 HP Electric Submersible Pump
							Using for Domestic purpose

Water Quality Analysis:

The water samples of existing one bore well is analysed for chemical analysis in the lab.

Sr.No	Source	Location Sr. No./Gat No.	Whether water is potable As per Chemical Analysis Yes/No	Remarks
1	Bore well	182	As per chemical analysis done, in the laboratory, all the parameters are within desirable limit except Nitrate content which is 59 mg/l, it is higher than permissible limit. The Nitrate content can be reduced within desirable limit by water treatment process (Reverse Osmosis/ Electrodialysis/Blending/Dilution of water) which helps to reduce nitrate from drinking water. After that it can be Potable and used for drinking purpose.	

For maintaining the groundwater quality of existing sources, the surrounding area of the sources should be kept clean and avoid any contamination. At the time of actual usage of groundwater for drinking purpose from existing sources i.e one borewell the water sample should be tested by the firm on its own cost from the water quality laboratory of this office. The groundwater of existing sources should be treated by water treatment plant before use for drinking purpose.

Observations :

On the basis of Hydrogeological survey done by this office, presently approx 20 KL/Day water is available from the above existing source.

The availability of groundwater as a source depends largely upon surface and subsurface geology, geomorphology, natural drainage pattern, depth of weathering and climate. Average annual rainfalls, groundwater extraction from other sources in the surrounding area, are also the factors which control the availability of groundwater.

Recommendations:

1. The topographical, hydro-geological conditions and rainfall play very important role for fulfilling the requirement of drinking and domestic water. To get sufficient and sustainable groundwater for drinking and domestic purpose, the groundwater recharge from Roof Top, Rain Water Harvesting measures to the existing groundwater source is mandatory.
2. All these groundwater recharge structures should be implemented under the technical guidance and supervision of this office (G.S.D.A. Pune) and checked it from time to time.
3. For maintaining the groundwater quality of existing source, the surrounding area of the source should be kept clean and avoid any contamination.
5. The water from existing source should be strictly used for domestic purpose only and also recycle and reuse of water are recommended.
6. During Scarcity period the Scarcity Rules of Maharashtra Groundwater (Development and Management) Act 2009 are mandatory.

[Signature]
Survey done by
Asst. Geologist

[Signature]
Senior Geologist,
Groundwater Surveys & Development Agency,
Dist Pune.