JAR GEOTECH & ENGINEERING CONSULTANTS

C/o Dr. Raj Srivastava, Haiderali Lane, Shiv Shaktinagar, Kokar, Ranchi, Jharkhand
Email Id: jarranchi2014@gmail.com,
R/NNo-10075/2014-15

Date: - 16/02/2024

	Name of Applicant : -	Akash Adukia
1.	Name of Father/Husband :-	S/O Late-Prakash Kumar Adukia
2.	Proposed to build :-	Commercial Building
3.	Khewat No. : -	-
4.	R.S.Plot No. :-	L-16
5.	Sub Plot No :-	-
6.	Khata No :-	
7.	Ward No. :-	
8.	Thana No :-	209
9.	Thana :-	Jasidih
10.	Date of Sample Received :-	15/02/2024
11.	Date of Test Conducted :-	15/02/2024
12.	Approximate Area :-	9825.89 Sqm.By
13.	Sample given :-	the Client
14.	Type of Test :-	Water test Required for building construction
15.	Village :-	Jasidih,Deoghar Jharkhand

This test will be required for Construction of Building.

Sl No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Parameter	PH	Turbidity	Co lour	Total dissolved solid	Total Hardness (as CaCO3	Alkalinity	Calcium (as Ca)	Magnesium (as Mg)	Nitrate (as SO4)	Chloride (as Cl)	Sulphate (as SO4)	Fluoride (as F)	Iron (as Fe)
Unit		NTU	Hazen unit	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l	Mg/l
Results	7.5	<5	<5	335	162	125	56	21	2.0	75	45	0.05	0.04

Hydrological Lab
JAR Geotech & Engineering Consultants
Haidar Ali Lane, Shiv Shakti Nagar
Kokar, Ranchi (Jharkhand) PIN-834009

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A. Discharge: - 2571.42 L/hr.
   a) Extraction allowed: -1802.45 L/hr.
   b) Maximum extraction: - 12566.21 L/day.

B. Physically water odorless & Colorless.

C. Roof top rain water harvesting (to recharge the aquifer) details enclosed. Applicant of proposed building will have to utilize rainwater on roof top and from open space such as parking, pathway etc. through recharge pits & trenches.

D. I do hereby declare that the informing given hereinabove is true to the best of my knowledge and belief and based on the basis of engineering/field tests. This is based on data collected. Certified that the test has been conducted at site.

E. Over all requirement of Water: - Approximate 8725.00 lit.

F. Requirement & store of over Head tank / Surge: - Approximate 9725.00 lit. G. Number of Room - (B+G+2) H. Number of Visitors: - 230 persons.

Calculation of Discharged at Bore well

Bore

1.	Total depth of Bore well	: 485'
2.	Diameter of the well	: 6"
3.	Diameter of outlet Pipe	: 4"
4.	Details of pump (Type of Pump)	: 1 hpsubm. Pump
5.	Static water level (Before starting pump)	: 275'BGL
6.	Pump started at	: 6.00 A.M.
7.	Discharge measured up to	: 8.00 A.M.
8.	Maximum draw –down as noticed at: (After 8.00 A.M. 185')	
9.	Water level draws down	: (95'B.G.L.)
10.	Discharge	: 2571.42 L/hr

Calculation of discharge of bore well measured by taking volume Vs time method in account a container of 250 liters is taken and found that the container was filled in 350 Seconds.

Hence the rate of discharge can be calculated as follows:
$Q = 250/_{350} \times 60 = 0.71 \times 60 = 42.85 \times 60 = 2571.42$ L/hr.

Extraction allowed: -1802.45 L/hr.
Maximum allowed: -12566.21 L/day.

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Remarks: -

a) Since the bore wells are yielding water 2571.42 L/hr is providing at par sufficient/insufficient water for above-mentioned consumption.

b) One more bore well is required: - Not more required.
The rate of extraction will not exceed by 1802.45 l/hr and the extraction period will under no circumstances will exceed 3 hrs at a stretch limited to 12566.21 L/day. This will help in recharging the water bodies (Aquifer) falling under cone of depression.

c) The Site has D.W.S.D. water supply connection/Pipe line crossing through the plot will also cater the need of people of apartment which reduces the extraction of ground water.

d) Roof top harvesting of rainwater to recharge ground water on the plot must be restored to as per the design and plan for the same attached with this certificate.

e) Regarding the recharging the aquifer by rainwater proposed apartment has got approximate 251.20 sqm open roof area, which can retain annual rainwater of given magnitude area. Average annual rainfall of Ranchi is approx 1.4 mts (1400mm).As per ours calculation annual volume of water recharge approx total 351680.00 L/year.

f) The construction of rainwater recharge pit including 4.5" – 6" dia drilling up to desired depth (Depth variable as per litho logy of area) in the recharge pit in the building premises to facilitate harvesting of rainwater to recharge ground water should be technically supervised by Engineer.

Seen and understand.

Date: - 16/02/2024

for JAR GeoTech & Engineering Consultants

Place-Deoghar

(Amit Kumar)