

**RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF SMT.
RAMPYARI W/O SHRI CHAMAN DAS FOR THE CONSTRUCTION OF OWNER
DRIVEN CONSTRUCTION FOR HOUSING (ODCH)
VILLAGE MASALGAON, TEHSIL- BARKOT- DISTRICT UTTARKASHI,
UTTARAKHAND
KHASARA NO – 3626 & AREA – 0.0013 ha**

Date of Inspection: 29/12/13

In a 'World Bank' funded programme, Government of Uttarakhand has provided teams of Consultant Geologists and Consultant Associate Geologist to Director, Geology and Mining Unit, Uttarakhand for geological studies in proposed site for Owner Driven Construction For Housing (ODCH) in disaster affected districts of Uttarakhand.

Director, Geology and Mining Unit, Directorate of Industries, Uttarakhand has issued an Office Order No. 1612 Aa. Pra./Bhu.Ni./Bhu.Khani.E./2013-14 dated 10th December 2013 regarding geological studies in disaster affected five districts of Uttarakhand, Uttarkashi is one of them. Thus, undersigned have taken geological observation during traverses and collected field geological data under the management of cosignatory departmental 'Assistant Geologist'.

In the above mentioned questioned area, the reconnaissance geological investigation was carried out in the presence and co-operation of Shri Dharam Singh Rana, Revenue Sub-Inspector, Gangtadi/Chaptadi. The proposed site is 30Km approx from Tehsil Headquarter Barkot, District Uttarkashi, Uttarakhand. It falls on coordinate – N 30^o 51.822 E 78^o 14.932 El. 5135feet. The site is 17Km approx from NH-123 (Delhi-Yamunotri National Highway) on Masalgaon-Khand motar marg, 700m approx through Masalgaon bridle path. The proposed site is in Masalgaon village which is densely populated. The village Panchayat Bhawan is in north-eastern backside of the proposed site at about 10m approx distance.

The proposed site is located on colluvial deposit and man-made cultivated step terraces are present. The thickness of overburden is varying at places in between 3-5m approx. The uphill slope at the proposed site is 18^o-21^o and the downhill slope is 10^o-12^o, sloping in N 285^o direction. The proposed site location is covered with thick soil cover of 1-1.5m approx. At and around the proposed site location less vegetation is present but in the uphill side at about 800-900m moderate vegetation of pine trees is present, up the hill. A drainage line is passing next to the proposed site from NE side and is flowing in East to West direction.



Close view of the proposed site



SW side view of the proposed site


At the proposed site, there was no in-situ rocks is exposed. Thick and consolidated soil cover with rock fragments of quartzite and phyllite varying in size from 1-3cm approx, with fined grained light brownish clayey soil matrix are found. The soil water saturation is low. The village Masalgaon is developed on a gently sloping man-made flat terrace which is 200m approx away from the hill. The trees in the uphill hide at about 800-900m approx and electric pole near the proposed site are standing straight which shows that there is no active movement in the area. In the toe of the proposed site in west direction a temporary retaining wall is already present and also a soak-pit tank is present in the north-eastern corner of the proposed site.

RECOMMENDATIONS:

1. The surface drainage should be properly planned through lined drain/pipe, so both rainwater from uphill side as well as waste water from the existing houses to be release safe place at down-hill along a channel.
2. The foundation depth of the houses must be as per the compactness of the overburden material in the proposed site.
3. Inclined retaining wall at the toe of the proposed site with provision of weep holes at specific distance should be constructed.
4. Massive plantation of trees, bushes and grasses which can hold the soil mass and retained the debris with dense and long rooted, wide/broad leafed flora must be done to protect the soil erosion and minimize the surface erosion of the subsurface rocks.
5. The premises of house must be made 'pukka' to prevent excessive subsurface seepage and downward percolation of water and differential settlement.
6. The soakpits and toilet foundations must be quiet away from the house so that the foundations are not directly affected from subsidence due to excessive seepage.
7. Framed structure must be used and light roof should be constructed, as the area falls in the earthquake zone IV, so it is essential that the house must be constructed with latest earthquake resistive techniques, scientific and technically sound craftsmanship with logical and favourable principles of soil mechanics.


CONCLUSION:


Prima-facie, presently the proposed site of Smt. Rampyari W/o Shri. Chaman Das is geologically feasible for the proposed construction, only if, the above mentioned recommendations will be followed strictly, otherwise, in their contravention; geological suitability will be deemed annulled.


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