

**RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF  
SHRI MOOLCHAND SINGH S/O SHRI RAICHAND SINGH FOR THE  
CONSTRUCTION OF OWNER DRIVEN CONSTRUCTION FOR HOUSING(ODCH)  
VILLAGE- UDRI, TOK- KHALENTI, TEHSIL- DUNDA, DIST. UTTARKASHI,  
UTTARAKHAND**

**Date of Inspection: 27-01-2014**

In a 'World Bank' funded programme, Government of Uttarakhand has provided teams of Consultant Geologists and Consultant Associate Geologists to Director, Geology and Mining Unit, Uttarakhand for geological studies in proposed sites 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 10<sup>th</sup> December 2013 regarding geological studies in disaster affected five districts of Uttarakhand. District Uttarkashi is one of them where the undersigned took traverses and collected field geological observations under the management of cosignatory departmental 'Assistant Geologist'.

The proposed site for construction is 42km approximately from Uttarkashi Headquarter, Uttarakhand from Lamgaon Motor marg and is about 3.8km on foot by bridle path from the motor road. It falls on coordinate – N 30°34'35.9" E 78°31'04.2" and elevation-1851m. The proposed site is less populated.

The proposed site is situated on man-made cultivated terrace at top of the main village near hill top. The site is covered with colluvial overburden material of about 0.5-1.5m. The overburden is composed of greyish brown silty soil with fragments of quartzite of approximately 0.5cm to 3cm in size. The uphill slope at the proposed site is 40°-45° towards SW direction and the downhill slope is approximately 18°-21° in SW direction.



**A side view of the construction site.**



**Quartzite outcrop in the upslope of site.**

There is perennial Rohtagaad approximately 200m in East direction from the site which is flowing from NE to SW direction. There is light water seepage in and around the proposed site. The vegetation is moderate in the area.

The rock type in the area is quartzite observed about 80m towards NW direction from the site. The foliation plane is dipping 64° toward South direction and E-W strike. The joint

J1 is developed along the dip with 2.5-5cm joint spacing and 0.3-0.5cm opening. The joint J2 is dipping 67° towards N300° with strike N210°. The rocks are compact and are moderately weathered in nature. About 40-50m upslope of the site massive quartzite outcrops are exposed.

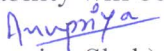
## 1. RECOMMENDATIONS:

Based on above surface geological observations of the proposed area the following remedial measures for construction of a geologically suitable house are recommended:

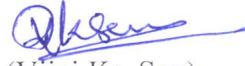
1. A retaining wall of 2.5m at the backside NE boundary and another 2m retaining at toe SW boundary with provisions of weep holes must be constructed to enhance the stability of the plot.
2. A sufficient gap of about 2ft in between the backside retaining wall and the backside wall of the proposed construction should be kept.
3. A proper drainage system with discharge towards East direction must be developed at the site.
4. The foundation of the house must be kept on the in-situ rocks if found at appropriate depth at the site.
5. The back, sides and the premises must be made cemented in order to avoid excessive seepage of the surface water during monsoon.
6. Framed structure with light roof, deep column and single storied house construction is preferable as the area falls in the earthquake zone IV.


## 2. CONCLUSION:

Prima-facie, presently the proposed site of Shri Moolchand Singh S/o Shri Raichand Singh is geologically feasible for the proposed construction, only if, the above mentioned recommendations will be followed strictly, otherwise, in its contravention; geologically suitability will be deemed voided.

  
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