

RECONNAISSANCE GEOLOGICAL REPORT OF PROPOSED SITE OF SHRI VIJENDRA PRASAD S/O SHRI KUSHLANAND FOR THE CONSTRUCTION OF OWNER DRIVEN CONSTRUCTION HOUSING (ODCH) VILLAGE LADADI, TEHSIL- BHATWARI, DISTT.- UTTARKASHI KHASRA NO.-777 & AREA-0.091 ha.

Date of Inspection: 11-12-2013

INTRDUCTION:

In a 'World Bank' funded programme, Government of Uttarakhand has consummate teams of undersigned for geological studies in proposed site for Owner Driven Construction House (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 10thDecember 2013 regarding geological studies in disaster affected five districts of Uttarakhand.

In the above mentioned questioned area, the reconnaissance geological investigation was carried out in the presence and co-operation of Shri Ranbeer Singh Panwar, Revenue Sub-Inspector, Joshiyara the land of Shri Vijendra Prasad Khasra No. 777 and the area of the land are 0.091 ha.

The proposed site for house construction falls in flat colluvial terrace on left bank about 400 m hillsides from river bed of Bhagirati. The site is located 3km from District headquarter Uttarkashi, in light motor road nearby Vikash Bhawan, 100m hill side from Joshiyara-Ladadi motor way. The boundary of proposed area in North side house of Shri D.P.Gairola, East side House of Shri Vijendra Prasad, South side house of Sri R.K.Nautiyal, on 2m wide, light motor road and West side house of Shri Panwar around proposed site. The proposed site surrounding area is dance populated. That proposed site situated in toposheet no. 53J/6, the co-ordinate is N 30^o 43' 27.9" E 78^o 26' 1.9" and El. 1178m from msl.

GEOMORPHOLOGY OF THE PROPOSE AREA:

The proposed site situated on coluvial terrace, cultivated land about 400m hillside from river bed of Bhagirathi. About 2-5m thickness of overburden, quartzite fragment varying 1-5cm with fine to coarse grain blackish brown soil matrix.

General slope of the proposed site is 15^o-20^o, uphill slope is of the 25^o-30^o above light motor road and downhill slope is 10^o-15^o towards N 50^o W. No bed rock found about 200m surrounding proposed area. About 250m hillside, 35^o-40^o sloppy hill towards valley side direction, moderately dance with pine tree and mix vegetation. No bed rock and natural drainage is found around proposed area.

REGIONAL GEOLOGY OF THE AREA:

Uttarkashi valley exhibits characteristic rugged topography of the Lesser Himalayan terrain. The ground elevations generally vary between 1150 to 2000 meters above msl. The hill slopes in the area are generally observed to comprise of rocky outcrops, rocky cliffs and mantle of colluviums. The hill slopes in the area is generally moderately steep (25^o- 35^o) to steep (36^o- 45^o) while few escarpments or cliffs (> 50^o) are also present.

Uttarkashi town is located in the Lesser Himalayan geotectonic block and it is bound by two major Thrust fault i.e. Main Centre Thrust (MCT) and Srinagar Thrust (ST). The MCT can be traced to the northeast of Uttarkashi while the Srinagar Thrust lies in the southwest. Phyllite, metabasic and quartzite of Garhwal Group are exposed around the area.

Geologically, the area falls in the region of rocks of Netala Formation of Lesser Himalayan terrain. Quartzite with bands of limestone, phyllite and slate is fine grained, compact, massive in general, but jointed and fractured at places. The slope of the hill ranges between 25° - 30° towards eastern direction. At few places insitu rocks are exposed in the plot whereas maximum plot area is covered with overburden. This overburden material comprising soil, hillwash and debris of varying size consisting of brown colored, fine to medium grained silty to gravely matrix with angular fragments of dolomitic limestone and a few brown fine grained shale etc., in which percentage of the angular fragments is more than the matrix. The major joint trends $240^{\circ}/30^{\circ}$ NW (Oblique to foliation plane) whereas minor joint trends $265^{\circ}/40^{\circ}$ NW.

GEOTECHNICAL OBSERVATION OF THE AREA:

The proposed area is on old colluvial deposit man made terrace. The angular and sub-angular fragment of Quartzite varying 1-3cm with blackish brown soil matrix made up of colluvial terrace. The proposed land situated in toe of the hill. General slope 15° - 20° of the proposed site is favourable for the construction of house. Another is proposed site surrounding area is dance populated, congested and surrounding houses is well stable before last 5-6 year.

The site is toe of the dance pine tree vegetated hill. No natural/seasonal drainage is found in proposed site, so that site is safe. 2.5m height and 5m length retaining wall is already constructed below light motor road safe for hillside. The proposed site is depending on geological observation stable for the house construction.



A valley side view of propose area

RECOMMENDATIONS:

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

1. The surface drainage should be properly planned through lined drain/pipe, both rain water flows from higher elevation as well as waste water from existing building and release safe place at down-hill along a sewage channel.
2. Light weight and slanting roof, framed structure, deep column, tabular structure and single storied house for construction is immensely recommended.
3. As the area falls in Lesser Himalayan earthquake zone IV so the houses must be erected with latest earthquake resistive techniques, and scientific and technically sound craftsmanship with logical and favourable principles of soil mechanics or the foundation of the houses must be kept in the fresh in-situ outcrops.

CONCLUSION:

Prima-facie, presently, the proposed site of Shri. Vijendera Prasad S/o Shri Kushlanand is geological feasible for construction work, only if, the above mentioned recommendations must be followed.

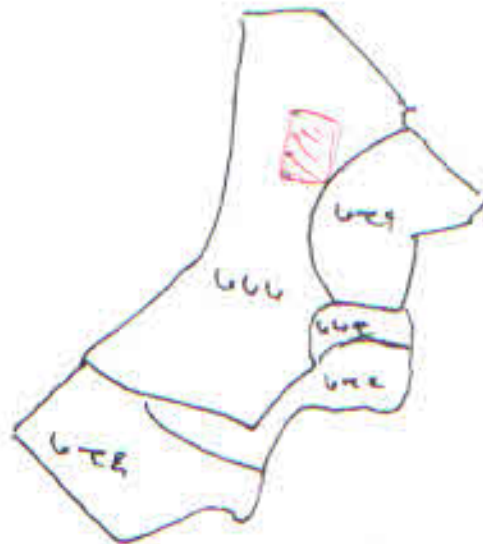
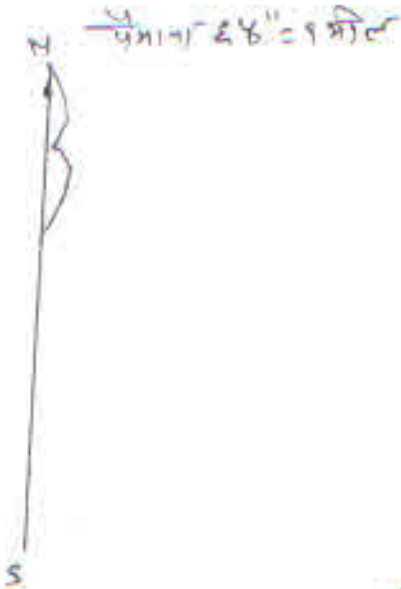

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Date: 18/12/2013
Place: Uttarkashi


(Dipender Singh Chand)
Assistant Geologist

नकशा मोजा लवठी पट्टी कायमदी तटस्थीत अकाराड) जिला उतरपट्टी मी उद्या
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ग्रामि मी-जोदी

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- (4) दक्षिण में - खखन-777 का मज आर के नोरीमल का समान

नकशा खल प्रतिलिपि


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 11/12/2013
 राजेश कुमार
 जयपुर

खंड

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उद्देश्य: राजस्व का आम लक्ष्यो पट्टी नदगाडी तहसील प्रकल्प जिल्ला इन्टरकांक्टिभ क्रमि का जो विजेडाकाद जमी पुस्तक नदगाडीकाद को प्रकल्प/ प्रकल्पन हेतु निर्धारित की गयी है।

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