



Simon Associates LLC

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August 6, 2015

Ms. Dana Shuler, P.E.
Weber County Engineering Department
2380 Washington Boulevard, Suite 240
Ogden, Utah 84401

Subject: Geologic Review
Lot 15 Ski Lakes Estates No. 3
6640 East 1100 South Street
Huntsville, Utah
SA Project No: 15-142

Report: Earthtec Engineering Inc. Report - Engineering Geology Assessment, Lot 15, Ski Lake Estates No.3, 6640 East 1100 South, Huntsville, Utah (EEI Job No, 145150), dated July 13, 2015, prepared for Mr. Marlin Nobs, 50 River Bluff Road, Elgin, IL 60120.

Geologic Submittal Status: **INCOMPLETE SUBMITTAL**

Dear Ms. Shuler,

At your request, Simon Associates, LLC (SA) reviewed the above referenced July 13, 2015, Earthtec Engineering Inc. (EEI) report. The July 13, 2015, EEI report was submitted in response to the May 29, 2015, SA project memorandum, written in response to a request from Weber County Engineering Department to evaluate whether or not the site is located in a geologically sensitive area. The May 29, 2015, SA assessment included review of the following EEI report:

Report - Geotechnical Study, Lot 15 Ski Lake Estates No.3, 6640 East 1100 South, Huntsville, Utah, prepared by Earthtec Engineering Inc. (project no. 145150G), dated June 23, 2014, prepared for Mr. Martin Nabs, 50 River Bluff Road, Elgin, IL 60120.

A scoping meeting with EEI was held on June 15, 2015, to discuss development of the parcel and EEI's proposed scope of work. SA visited the site on June 19, 2015, to observe general site conditions and test pit exposures.

The purpose of SA's review is to evaluate whether or not the EEI documents adequately address geologic conditions at the site, consistent with concerns for public health, safety, and welfare; reasonable professional standards-of-care, and; the Weber County Hillside Development Review Procedures and Standards.

The objectives of the July 13, 2015, EEI study were:

"... to address the geologic hazards concerns raised by Weber County's consultants pertaining to the proposed development of the single family residence for the subject lot. Specifically, this assessment will address the presence of the Norwood Formation and other geologic units or features below the surface of the subject lot, evidence of any past slope movement on the lot and adjacent properties, and the potential at for future slope instability based on field observations, additional subsurface exploration, additional laboratory testing of soil samples, and additional slope stability modeling performed separately by engineers from Earthtec Engineering."

EEI's scope of work consisted of review of available, published geologic, geologic hazards maps, and aerial photographs; excavation and logging of four test pits; completion of a geologic cross section; preparation of the subject report summarizing the findings and conclusions of developed during the assessment.

Two test pits were excavated for the June 23, 2014 EEI report. Based on the June 23, 2014 EEI report, we understand proposed development consists of constructing a conventionally framed, two to three stories in height, single-family residential structure, with a walk-out basement.

EEI Geologic Conclusions

Primary geologic conclusions from the July 13, 2015, EEI report follow:

1. "Although the landslide-prone Norwood Formation was observed underlying the subject lot, no evidence of past landslide movement was observed on the surface or in the subsurface explorations at the lot. Additionally, no landslide deposits or features have been mapped on, or immediately adjacent to the subject lot ... Based on the evidence and analysis presented above, it is our opinion that the potential for landslide activity to impact the proposed development on the subject lot is relatively low," (page 7 of July 13, 2015, EEI report).
2. "No evidence of past surface fault rupture was observed on the lot or surrounding areas. No known active faults are mapped crossing, adjacent to, or projecting toward the location of the subject lot. ... It is our opinion that the potential for surface fault rupture and related ground deformation to impact development on the subject lot is relatively low," (page 8 of July 13, 2015, EEI report).
3. "The subject lot does not appear to be located on an active alluvial fan or in, or adjacent to, or at the mouth of an active drainage channel or ravine. Based on these observations, it is our opinion that the potential for debris flows and/or alluvial fan flooding to impact the subject lot is relatively low," (page 8 of July 13, 2015, EEI report).
4. "No rockfall clasts were observed on the subject lot or adjacent areas and no rockfall source areas are located up-slope from the subject lot. Based on these observations, the subject lot is not located in an active or past rockfall run out zone and the potential for this hazard to impact the subject lot is relatively low," (page 8 of July 13, 2015, EEI report).
5. "Combination soil types, moisture-sensitive spoils, or other problematic soil conditions may be present below the proposed house footprint on the lot. The referenced geotechnical report for the lot provides recommendations for addressing problematic soil conditions. We recommend that an engineer or geologist from Earthtec Engineering be allowed to observe the completed foundation excavation prior to construction of footings to determine if problematic soil conditions are present," (page 8 of July 13, 2015, EEI report).

6. "It is our opinion that the potential for other geologic hazards to impact the subject lot is relatively low. This opinion is based on the regional and local geologic setting as well as our observations of the conditions at the site and surrounding area," (page 8 of July 13, 2015, EEI report).
7. "Based on our research, observations, interpretations, and analysis, the subject lot appears to be suitable for the proposed development from a geologic hazards perspective. All recommendations presented in the referenced geotechnical report and addendum letter for the subject lot should be followed," (page 8 of July 13, 2015, EEI report).

SA Conclusions and Recommendations

Based on concerns for public health, safety, and welfare; reasonable professional standards-of-care, and; the Weber County Hillside Development Review Procedures and Standards, SA recommends Weber County not consider the July 13, 2015, EEI report submittal complete from a geologic perspective until the following are adequately addressed:

1. EEI repeatedly refers to the various geologic hazards as "relatively low." SA recommends Weber County request EEI defines the term "relatively."
2. EEI uses terms such as "appears" and "may be." Are these terms being used to denote a conclusion based on conjecture rather than a conclusion based on sufficient data, particularly subsurface data? Is EEI suggesting that additional data be obtained? SA recommends EEI clarify their use of the word "appears" and "may be."
3. On page 5 of the July 13, 2015, EEI report, EEI states: "On June 22, 2015, a geotechnical engineer from Earthtec Engineering returned to the lot with the excavator and oversaw the excavation of an addition test pit (TP-5) In the area of the proposed house on the lot as well as extending TP-3 down slope to the elevation of TP-4. This was done to provide additional subsurface observation in order to better understand the shallow subsurface geology at the site. Test Pit TP-5 and the extension of TP-3 were not logged but were photographed by the

engineer." SA recommends Weber County request the annotated photographs of TP-5 and the extension of TP-3 excavated on 6-22-15.

4. SA recommends Weber County request EEI provide an updated site plan (Figure 3) depicting the approximate length of the test pits, particularly the extension of TP-3).

Closure

Comments and recommendations in this review are based on data presented in the referenced Consultant's report. SA accordingly provides no warranty that the data in the Consultant's report or any other referenced reports are correct or accurate. SA has not performed an independent site evaluation. Comments and recommendations presented herein are provided to aid Weber County in reducing risks from geologic hazards and to protect public health, safety, and welfare. There is no other warranty, either express or implied.

All services performed by SA for this review were provided for the exclusive use and benefit of Weber County; no other person or entity may or is entitled to use or rely upon any of the information or reports generated by SA as a result of this review. SA would be pleased to meet with Weber County and/or the Consultant, at a mutually convenient time, to discuss any of the issues presented herein. In the meantime, should you have any questions, please feel free to contact the undersigned. The opportunity to be of service to Weber County is appreciated.

Very truly yours,

SA



David B. Simon, P.G.
Principal Geologist

DBS/AOT

Dist: 1/addressee