

COLORADO GEOLOGICAL SURVEY

1801 19th Street
Golden, Colorado 80401



Karen Berry
State Geologist

June 20, 2017

Raimere Fitzpatrick
El Paso County
Planning and Community Development
2880 International Circle, Suite 110
Colorado Springs, CO 80910

Location:
NW ¼ of NE ¼ of Section 14,
T11S, R67W of the 6th PM
39.0981°, -104.8547°

**Subject: The Beach at Woodmoor;
El Paso County PUDSP-17-003, CGS Unique No. EP-17-0053**

Dear Raimere:

As requested, we have reviewed the preliminary development plans for The Beach at Woodmoor. For this review we received the following documents:

- Application Form (Edward Cody Humphrey, 5.18.17),
- Legal Description (Civil Consultants, Inc, 5.23.17),
- Letter of Intent (N.E.S., Inc., 5.17),
- Natural Features, Wetland, Wildfire, Noxious Weeds and Wildlife Report (Ecosystem Services, LLC, 5.26.17),
- Preliminary / PUD Development Plan (N.E.S., Inc., 5.26.17), and
- Geologic Hazards Evaluation and Preliminary Geotechnical Investigation (CTL|Thompson, Inc., 12.13.16).

According to the Letter of Intent, the applicant plans to rezone the property to develop 35 single-family lots on 12.317 acres.

The site does not contain steep slopes, is not undermined, and does not contain, nor is it exposed to, any geologic hazards that would preclude the proposed residential use and density. However, several geologic conditions exist at this location requiring site specific investigations, detailed engineering recommendations, and careful attention during construction. We offer the following comments on these conditions.

Soil and bedrock engineering properties. CTL makes appropriate *preliminary* geotechnical recommendations based on the results of ten borings, limited SPT's (standard penetration tests, an *in situ* test indicating relative density), and limited laboratory testing. Claystone samples exhibited low to moderate swell and CTL states that in their experience highly expansive claystone layers could be encountered in this area.

- Additional geotechnical investigations and analysis will be needed, once building locations are finalized, to more accurately characterize lot-specific soil and bedrock engineering properties such as expansion/consolidation potential, density, corrosion potential, etc. This information is needed to determine subgrade preparation requirements and to design individual foundations, and floor systems.

Shallow groundwater. Groundwater was measured at depths between 10.5 and 28.5 feet in seven holes eight days after drilling. Additionally, shallow bedrock encountered at the site can contribute to the future development of perched groundwater. To mitigate this condition, CTL recommends below-grade foundation drains connected to underdrain systems. They further recommend that the lot-specific geotechnical investigations determine if wet conditions exist that require active underdrains or if passive systems are

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adequate. These recommendations will be critical for mitigation of existing and/or future development of shallow groundwater at this location.

Provided these and CTL's recommendations are strictly adhered to, CGS has no objection to approval of the Preliminary Plan as proposed.

Thank you for the opportunity to comment on the slope stability analysis for this project. If you have questions or require further evaluation, please call us at 303-384-2654, or e-mail jlovekin@mines.edu.

Sincerely,



Jonathan R. Lovekin, P.G.
Senior Engineering Geologist