

# COLORADO GEOLOGICAL SURVEY

1801 19<sup>th</sup> Street  
Golden, Colorado 80401  
303-384-2655



Karen Berry  
State Geologist

November 3, 2016

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

**Location:**  
SW¼ NW¼ Section 7,  
T15S, R65W of the 6<sup>th</sup> P.M.  
38.7609, -104.7177

**Subject: Springs at Waterview – Sketch Plan Amendment, PUD Amendment, Preliminary Plan & Final Plat  
File Numbers SKP-16-002, PUD-16-004, SP-16-005, and SF-16-017  
El Paso County, CO; CGS Unique No. EP-17-0018**

Dear Ms. Ruiz:

Colorado Geological Survey has reviewed the Springs at Waterview referral. I understand the applicant proposes 80 single family lots on 15.7 acres located northeast of Grinnell Street and Bradley Road in the Security-Widefield area.

With this referral, I received:

A Review Agency Comment Sheet requesting CGS's review (October 10, 2016),  
Preliminary Plan and Final Plat Application Forms (signed September 6, 2016),  
Set of four Preliminary Plans, including a Grading Plan (Dakota Springs Engineering, various dates July 2016),  
Letter of Intent, Springs at Waterview Preliminary Plan (SWV, LLC, September 2016),  
Subsurface Soil Investigation, Waterview Transfer Pump Station (RMG, March 11, 2015),  
and other documents.

The site is not undermined, and does not appear to contain or be exposed to any geologic hazards that would preclude the proposed residential use and density. CGS therefore has no objection to approval of the sketch plan and PUD amendments as proposed. **Potential development constraints that should be addressed prior to preliminary plat approval include:**

**Compressible, hydrocompactive, and expansive soils.** According to available geologic mapping, the site is underlain by wind- and river-deposited sand, silty and clayey sand, and gravel. Clay layers and lenses within the alluvium are typically expansive, and low density, low strength, fine-grained alluvial soils often exhibit collapse under loading and wetting.

RMG's Subsurface Soil Investigation was prepared for a 30 ft. x 24.75 ft x 8 ft. storage structure and a wastewater lift station, and consists of two borings in the far southeastern corner of the subject property. RMG recommended overexcavation and replacement with non-expansive, granular structural fill for the storage building and lift station. Previous investigations for other Waterview phases/filings have described hydrocompactive and expansive clay soils and claystone bedrock, and recommendations have included overexcavation and/or drilled piers.

A preliminary geotechnical investigation, consisting of drilling, sampling, laboratory, testing and analysis over the entire Springs at Waterview site, is needed to better characterize soil engineering properties such as swell-

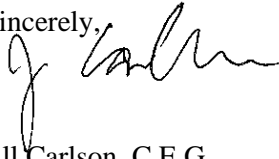
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consolidation potential, density, etc., to determine depth and lateral extent of overexcavation and to specify fill placement criteria such as lift thickness, water content, compaction effort and target density. For a development of the proposed density (80 lots on 16 acres), overexcavation should be performed over the entire area within a specific construction phase determined to require overexcavation, at the grading phase of development, before wet utilities are installed.

Even after ground modifications (if implemented) and grading are complete, it is possible that some of the overexcavated and replaced soils will be moderate or higher swelling. Additional, lot-specific geotechnical investigations will be needed to verify that swell potential values have been reduced to acceptable levels, determine groundwater levels, and to determine maximum bearing and minimum dead-load pressures. This information is needed to design individual foundations, floor systems, pavements, and subsurface drainage.

Thank you for the opportunity to review and comment on this project. If you have questions or require additional review, please call me at (303) 384-2643, or e-mail [carlson@mines.edu](mailto:carlson@mines.edu).

Sincerely,

A handwritten signature in black ink, appearing to read "Jill Carlson". The signature is fluid and cursive, with a large initial "J" and "C".

Jill Carlson, C.E.G.  
Engineering Geologist