

EP-23-0083_1 Jane Davis Ranch

El Paso County File Number SKP232

Includes: 94 Lots proposed on 397 acres.

Location: 38.9570, -104.5368

SE¼ of Section 33 and portion of S34 T12S R64W 6th P.M.

Comments uploaded to El Paso County Development Application Review on 7/2/2025:

The available referral documents include the Sketch Plan (William Guman & Associates, Ltd., May 19, 2025), Letter of Intent (William Guman & Associates, Ltd., September 16, 2024), Soil and Geology Study (Rocky Mountain Group, Amended March 20, 2024), and other documents. The applicant plans to subdivide the property into 89 single-family lots, two commercial lots, and a community park.

CGS agrees with most of RMG's geologic interpretations, identification of hazards and constraints associated with the geologic conditions, and the proposed mitigation measures. The geologic conditions identified by RMG (p. 20) include "potentially expansive and compressible soils, ponding water, shallow groundwater and flood prone areas." We offer the following comments and recommendations.

A drainage traverses a portion of the development mapped as a FEMA Floodplain (FIRM Panels: 08041C0558G, dated 12/7/2018). The development is within both Zone X and Zone A. The floodplain is designated as a No-Build Zone based on RMG's study and the sketch plan. RMG recommends *"the lowest finished floor elevation (including basement together with attendant utility and sanitary facilities) shall be elevated one-foot or more above the designated Base Floor elevation (BFE)."* **CGS recommends that an erosional non-buildable setback from the floodplain boundary should be established.**

Shallow and potentially shallow groundwater has been identified at the site. However, data has yet to be collected for the extent of groundwater fluctuations that can be expected here. Groundwater was encountered in 16 of the 24 test borings at depths ranging from 5 to 34 feet (p. 11, Soil and Geology Study). Without a seasonal groundwater monitoring program, potential impacts from shallow groundwater remain indeterminate in sites with persistent but intermittent shallow groundwater, such as this one. Seasonal fluctuations of shallow groundwater cannot be determined from these singular data points but require measurements during spring, summer, fall, and winter. CGS agrees with RMG (p. 11), *"basements should be restricted in areas where groundwater was encountered at 15 feet or shallower."*

RMG states on p. 16, *"The feasibility of basement construction should be evaluated prior to site-specific Subsurface Soil Investigation for each lot."* Also on p. 11, RMG states, *"basement construction should be restricted except where one of the following conditions apply:*

- *A year-long groundwater monitoring study is undertaken, and the results indicate that groundwater is sufficiently deep to allow basement construction;*
- *The proposed construction will result in at least 15 feet of separation between the proposed ground surface and groundwater elevation. Where groundwater encroaches shallower than 15 feet, the ground surface may be modified (raised) to increase the separation to meet these criteria."*

The feasibility of basements should be determined no later than the preliminary plat/plan phase, NOT during site-specific Subsurface Soil Investigation. If below-grade levels are desired for the lots, **CGS recommends that the county require groundwater monitoring/observation to verify that proposed floor levels are at least four feet above maximum anticipated groundwater levels and maintained year-round.** This monitoring/observation program should be conducted to determine if basements are feasible, to design detention ponds, and to determine if an underdrain system for the development is required due to shallow groundwater conditions. If site grades cannot be raised to maintain the minimum separation distance and/or an underdrain system is determined not to be feasible, then full-depth basements should not be allowed, and a statement indicating “No Basements” should be shown on the preliminary plat.

RMG recommends perimeter and underslab drains if groundwater is encountered within 4 to 6 feet of the basement slab elevation. These drain systems should be connected to an underdrain system constructed for the development. Please note that individual foundation perimeter drains are needed around any below-grade (basement) space and are intended to handle only small amounts of intermittent water and should not be used to mitigate a persistent shallow groundwater condition.

In summary, as a condition for approval during the sketch plan phase for this development, a groundwater observation/monitoring program should be performed if below-grade levels are planned. We recommend that a year-long monitoring program be implemented. Mitigation measures for shallow groundwater and the feasibility of basements should be determined during the preliminary plat application phase. RMG’s recommendations for OWTS should be adhered to during design and installation.

Submitted 7.2.2025 by Amy Crandall, Engineering Geologist, Colorado Geological Survey
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