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Date: 01.23.2026

Project: Red Mountain Ranch (RMR) – Parcel 1

Submittal: Major Development Permit (MDP) & Preliminary Plan Review (PPR) – R3 Submittal

Attention: Kyle Brotherton

## R2 Comment Responses: Colorado Geological Survey

Kyle Brotherton,

We are still waiting for the chance to discuss these comments with Jill Carlson. The design team remains committed to accommodating whatever meeting times are convenient for you. In the meantime, we have prepared a formal response to Jill's comments.

As noted in the R3 submittal summary, we are confident that all comments from CGS have been addressed at this point. I believe the responses below justify this and reflect our reasoning. Files have been attached where necessary. Please feel free to use this for your own reference or to aid in any discussions you have with Jill Carlson regarding this project.

The original comments and our responses are written below in the following format:

Original comment; Rewritten in grey font.

**Response:** *written in black italics. Updated drawings will be noted here as applicable.*

Please feel free to reach out to me directly with any questions or concerns regarding our comment responses.

Thank You,



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## Responses to Comments from Colorado Geological Survey:

### General Notes

CGS has on file and has previously reviewed the following report relevant to the subject site: Preliminary Subsoil Study, Parcel 1, Red Mountain Ranch, U.S. Highway 6, East of Eagle, Eagle County, Colorado (HP Geotech Job No. 115 548A, February 29, 2016).

**Response:** *In addition to the report identified above, there have been two additional reports created:*

- “Preliminary subsoil study for foundation design proposed residential development parcel 1, Red Mountain ranch U.S. Highway 6 Eagle, Colorado” Project No. 23-7-513; By Kumar & Associates; Published December 23, 2023
- “Supplemental Subsoil Study, Proposed Residential Development, Parcel 1, Red Mountain Ranch, U.S. Highway 6, Eagle, Colorado” Project No. 23-7-513; By Kumar & Associates; Published October 21, 2024

*These were included in both the R1 and R2 MDP/PPR Submittal. Based on the nature of the reviewer’s comments, I am unclear as to whether or not they had access to these reports at the time of review.*

### Erosion and slope stability setback

CGS continues to agree with H-P Geotech (page 7 of the 2/29/2016 Parcel 1 Preliminary Subsoil Study) that “Buildings should have adequate set-back from the steep slope down to the river...”

I georeferenced sheet C1.11, Overall Grading Plan – West and C1.12, Overall Grading Plan – East (Wilson & Company, September 22, 2025) to evaluate proposed building locations relative to slopes. **Buildings on the following proposed lots are too close to the crest of, or on, steep (steeper than 30%), potentially erodible or otherwise unstable slopes immediately above the Eagle River:**

Block 12, Lots 1 and 3  
Block 13, Lots 2 through 6

CGS strongly recommends reconfiguring the lot layout to avoid steep slopes plus a setback within lots, or delineation of a non-buildable erosion and slope stability setback from the crest of steep slopes. The setback should be in accordance with adopted building codes (generally 40 feet or  $1/3 \cdot$  the height of slope, whichever is smaller, from descending slope surfaces.) An alternate setback may be permitted by the building official, but such decision should be based on a geotechnical investigation demonstrating that the intent of the building code would be satisfied, considering soil and bedrock engineering properties, slope height, slope gradient, load intensity, and erosion characteristics of the slope material.

**Response:** *The buildings identified in the comment are all SF-B or SF-D type units. Both are two-level, single-family homes with a main level coming off the grade of the one-way road and a partial lower garden level facing the river. They were intended to work with the topography of the site and designed to be built into a slope. The design includes retaining walls on the below grade side of the garden levels.*

*I've attached a marked up version of the civil drawings the reviewer references identifying the units called out in the comment as well as the approximate location of the retaining walls.*



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*Between SF buildings, our intention is to ensure grades are not problematic or provide mitigation measures as needed to maintain adequate stability.*

## Water-soluble evaporites, sinkholes, and ground subsidence

The surficial deposits are underlain by Eagle Valley Evaporite. HP Geotech's reports identify the potential for sinkhole activity, but indicate that no sinkholes were observed. Sinkholes are clearly visible on other Red Mountain Ranch parcels to the east of Parcel 1, and past re-working of surface soils or other ground disturbance may have obscured evidence of sinkholes on the subject parcels. Historical evaporite-related sinkhole activity in Colorado has been initiated or renewed by the addition of surface water from activities such as irrigation and irrigation ditch leakage. Any activity that leads to increased or ongoing addition of new water (this includes landscape irrigation) to the subsurface in areas underlain by Eagle Valley Evaporite has the potential to exacerbate evaporite-related sinkhole activity.

In addition to the potential hazards posed by surface collapse of previously unidentified underground voids, the variability of soil properties within buried sinkholes can lead to structural damage from uneven foundation settling. Based on the potential for past and/or future sinkhole activity, CGS recommends that the town require additional evaluation of sinkhole hazard, and evaluation of the feasibility of mitigation alternatives to reduce subsidence-related risks. Typical mitigation techniques include engineered, rigid foundation design, geotextile ground reinforcement, strain isolation trenches, stabilization by grouting and backfilling, and/or deep foundations.

**Response:** *See the General Note at the beginning of this response. I am unclear whether the reviewer has been provided with all the reports necessary to complete this review.*

*In total, there have been 2 separate subsoil studies and a supplemental subsoil analysis performed for this site and provided for AHJ review. Over the course of 8 years, 16 borings and 5 test pits have been dug and evaluated on Parcel 1. At no point has sinkhole activity been observed on Parcel 1. The 2023 study performed by Kumar and Associates includes a specific section on Subsidence Potential and notes that "The risk of future ground subsidence on Parcel 1 throughout the service life of the proposed residences, in our opinion, is low"*

## Compressible/collapsible/hydrocompactive soils

H-P Geotech identified soils with low bearing capacity and potential for collapse upon wetting, and makes reasonable preliminary recommendations for mitigating damage associated with compressible or collapsible soils. Additional investigation consisting of drilling, sampling, lab testing and analysis is needed based on current development plans to better define the depth and extent of collapsible/compressible soils and to develop site-specific mitigation strategies

**Response:** *Additional investigation has been completed. See 2023 Subsoil Study and 2024 Supplemental Subsoil Study.*

This concludes the comment responses.