Exhibit
6-20

native wild flowers, prairie grasses and all the small birds and ground creatures that depend upon this habitat will be removed. In good conscience, Garfield County must not approve this totally out of character, money driven, wrongful development in Spring Valley.

Please do the right thing and advocate for our local citizens, our water quality and keep this peaceful open space land for the wildlife and humans alike. The tax revenue generated from this endeavor can never make up for the loss of this precious natural area.

Respectfully Submitted,

Holly Fuller McLain – Long time Roaring Fork Valley resident, Carbondale, CO

Exhibit 6-21

Dear County Commissioners,

I am writing to you with a deep concern regarding the proposed Spring Valley Ranch development project that threatens our local environment, community, transportation, and fire risks. As a resident of this Elk Springs and a sustainability scientist, I am deeply committed to preserving the natural resilience and remaining ecological diversity that make this place one of the last remaining rural places in the valley. Our valley is changing fast, and this development is an egregious error in planning for the future.

The proposed Spring Valley Ranch not only impact wildlife and habitat islands for overwintering and migration, but it will also negatively impact the resilience of the ecosystem in our warming climate. Climate planning is clearly not a part of this plan. If it were, there would not be ludicrous concessions for a ski hill and golf course, let alone hundreds of units of luxury homes - all of which require water and infrastructure resources that is fragile at best today.

Many of us in Elk Springs have already lost our home insurance from national providers like Progressive due to fire risk. This is legal on the part of insurers - and expected to increase in Colorado as it has in other states like California. Fire risk is high in this area and is going to remain high or even increase as we have warmer years. There is no mention in the proposed plans for realistic climate scenarios related to such extensive landscape change, let alone externalities like insurance.

Landscape alteration at this scale means more fires. Increasing development inevitably brings in invasive, volatile weeds through imported soil, building and landscaping materials, and disturbing landscapes. This creates an opportunity for invasive grasses, like highly flammable cheat grass for example, to get a foothold. We are currently fighting this species and other nonnative weeds and grasses that increase fire intensity, propensity of fire to spread when inflamed, and over time, to alter landscapes to be more fire prone. Scraping the remaining farmland, grassland, and forests destroys what little resilience these landscapes offer today.

It is with this in mind that I implore you to take immediate action to halt the Spring Valley Ranch plans. Residents like me are appalled at the green light that has been granted to this development for many, many reasons.

I find the fire and habitat consequences to be top of mind for many of my friends and neighbors. I am sure many residents will mention related concerns such as the sub-standard maintenance of Spring Valley Road, the fire escape/evacuation route impacts, the woefully shortsighted water estimates of this plan, a SW facing ski hill(?), the traffic and the staggering changes to one of the last remaining refuges in the valley for non-millionaires who value this place.

The proposed project jeopardizes the health and well-being of our community for generations to come. The unchecked expansion will lead to irreversible damage and leave residents at higher risk.

I urge you, as elected representatives entrusted with the stewardship of our county, to listen to the concerns of your constituents. Please reconsider the approval of this destructive development and explore alternatives that uphold our shared values of community well-being.

Claudia Capitini, MSc. MMA, CEM. Elk Springs Resident

Claudia Capitini

March 7 2024

March 8th, 2023

Dear Garfield County Commissioners,

I am writing to you with my concerns about the proposal for the Spring Valley Ranch.

I grew up in Spring Valley and strongly disagree for the proposed plans that the developers are wanting to build.

There are soo many reasons why this sale should NOT go through. One of the main reason, is the huge catastrophic effects it will create with the water. This will significantly effect my home and many of my neighbors who live directly below the proposed area. As many of you know that all over Garfield County, including Spring Valley, that we have been in a drought for a very long time. And even though we have had a few winters that had a very good snowpacks, they still have only been a few and randomly. Our summers are still being effected, even with a good winter. These are a few examples on why we should keep protecting our lands and our water sources. Our water sources for the lucky who have worked their whole lives to live somewhere peaceful. The water sources for the livestock and the wildlife desperately need. Especially since it has become more of a challenge for wildlife to go down the mountains and access the river.

I, as well as many of my neighbors, were very

disappointed that these developers only did a water study for one year. Last year - the year that we had an exceptional snow/winter year. To help make it look better on their side for the developement plans.

The amount of water that will be sucked up to accommodate 577 homes, And a 200 acre golf course And a sledding hill, And a few skiing slopes, And a general store, would majorly effect soo many homes and neighborhoods below and around it. A very extensive water study should be performed to see where all the water that comes from that aquifer they would be using, to where it expands out to and where it would effect.

It makes no sense statistically to even put that many homes in one area, even more, it makes no sense statistically to put in another golf course And skiing area on the North East Side of the mountain. Every golf course from Rifle to Aspen are located in an area with an acceptable water source. Every skiing mountain are all on the correct side of the mountain that does not require constant snow blower machines running everyday, just to keep the slopes open. All the other ski resorts in the Roaring Fork Valley are situated on better [redacted]/snow making or snow reserves from fresh snow and water sources. And how much water will this proposed slopes and sledding hill actually use during the winter, especially since the whole area is Private.

We have plenty of exclusive or private communities in the Roaring Fork Valley, which I would bet that with some ~~fees~~ research, there are plenty of un-sold million dollar homes or undeveloped lots still available. This would just add to the mess of having more unaffordable houses in the valley available for a certain targeted demograph, that this developer is trying to target. That they are trying to target these houses in the proposed development as 2nd homes/vacational homes. We already have a huge market for this in the Roaring Fork valley. This would only benefit the developers, the financial partners and the targeted demographic that are mostly going to be from out of state and out of country.

This development would not benefit the community or the county. To become over runned by rude money and standards for our slight "small town charm". This development will also ruin the aesthetic of the beautiful and peaceful mountains and mountain town.

I really could go on for pages and pages on why we should not allow this sale to go through and also never let this type of development happen in that area.

I plead to you, the county commissioners to seriously consider how much this can damage the area and

many lives now and in the future. I plead that you very strongly consider Denying the sale of this 100 plus year old ranch to these developers and not approving their proposed plans.

I know that many of my neighbors will be reaching out to your office as well to voice their concerns as well as their choices to fight this. We truly hope that you will stand by your neighbors and nature, and not side on the side that is only about profit. We are not our unique and special valley and town without the peaceful environment and friendly neighborhoods of people who work hard to keep their dreams.

So please – help us fight this and Deny this sale and proposed plans for the Spring Valley Ranch in Glenwood Springs.

Thank you for your time and reading my letter.

Janet Anderson
1332 CR 119
GWS, CO 81601

Exhibit
6-23

March 24th, 2024

Garfield County Community Development
108 8th Street, Suite 401
Glenwood Springs, CO 81601

Dear Garfield Senior Planner Philip Berry ,

My name is Simon Hambidge and I am a resident who lives up at the top of Red Canyon on Heather Lane. I am writing to the board of the Garfield County Commissioners office, with my concerns for the proposed sale and development proposal of the Spring Valley Ranch, located in Glenwood Springs.

There are many reasons why this sale/development should not be allowed to be approved. Some of the main key points of concern are summarized below:

1. **WATER:**
   Water is one of the main and biggest reasons. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months, that have affected not only homesteads in this area but also the livestock and wildlife have been affected.
   Adding the additional 577 housing units, as well as a 200-acre golf course, a general store, a fire station, and a possible skiing and sledding hill that the developers are proposing, would significantly affect the water sources.
2. **FIRE:**
   There would be an alarming number of safety concerns if there were to be another fire in the area. If there were to be an increase in traffic on the roads (due to construction or daily commuting or random traffic), then this could cause a problem with roads becoming blocked making it difficult for residents to get out safely, as well as first responders being able to safely access the area. Having these additional structures so close to each other would create more fire fuel and make it more difficult to control or fight a fire, compared to the current landscaping that is there. Spring Valley already has only 3 accessible emergency routes, without any additional traffic.
3. **TRAFFIC:**
   The significant amount of traffic increase that would be created in the area would affect many of the residents that currently live in the area, as well as residents and businesses around the area. The traffic would increase to become unmanageable, that it would affect not only County Road 114 but also, County Road 115, County Road 119, County Road 110, and different road routes that go through Cattle Creek and over towards Missouri Heights and Cottonwood Pass towards Eagle. The road usage increase would create more dust, pollution and noise, that this rural area is not meant to have or endure. There would be a significant increase in traffic that would also affect Highway 82, which is already having many problems with the volume of traffic. The developers are indicating that traffic would

Exhibit 6-23

increase to 5,700 trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.

4. **WILDLIFE:**
   The wildlife in the area has changed over the years but has been returning to the area for the last few years, including elk. Multiple herds of elk have re-established their migration routes that run through Spring Valley, Spring Valley Ranch, Lookout Mountain, Elk Springs, High Aspen Ranch and surrounding areas. Black bears have also been returning to the high mountains of the area, even after the Grizzly Creek Fire had pushed them out temporarily. There are a significant number of deer that have also created a home all throughout Spring Valley and the surrounding areas, as well as the white-tailed jackrabbits. Mountain lions still live within Spring Valley, Lookout Mountain, and surrounding areas as a part of their territory for feeding and breeding. This development will have a major impact on wildlife and would make it extremely difficult for their migration routes to breeding to being hit by traffic. They would be forced to move to another area that will not be able to accommodate their needs to survive.

Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This development would not benefit the community or the county, it would be taking away from local businesses and the small town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan.

We need to keep our rural mountain areas rural.

My wife and I are in the process of retiring and having our rural home transformed by this massive development would have a large impact on our quality of life, and likely force us to look elsewhere for a home. I think many of our neighbors fell the same way.

Thank you for your consideration and for your work for Garfield County,

Simon Hambidge
486 Heather Lane
GWS 81601

Exhibit 6-23

From: Glenn Hartmann
To: Philip Berry
Subject: FW: Garfield County website inquiry
Date: Friday, April 5, 2024 8:31:16 AM

From: John Martin <jmartin@garfield-county.com>
Sent: Thursday, April 4, 2024 4:32 PM
To: Glenn Hartmann <ghartmann@garfield-county.com>
Subject: FW: Garfield County website inquiry

From: noreply@formstack.com <noreply@formstack.com>
Sent: Sunday, March 24, 2024 3:38 PM
To: John Martin <jmartin@garfield-county.com>
Subject: Garfield County website inquiry

Subject: Spring Valley Development

Name: Simon Hambidge

Email: simonhambidge@comcast.net

Phone Number: (303) 859-9267

Message: March 24th, 2024

Garfield County Administration & Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

Dear Garfield County Commissioner John Martin,
My name is Simon Hambidge and I am a resident who lives up at the top of Red Canyon on Heather Lane. I am writing to the board of the Garfield County Commissioners office, with my concerns for the proposed sale and development proposal of the Spring Valley Ranch, located in Glenwood Springs.
There are many reasons why this sale/development should not be allowed to be approved. Some of the main key points of concern are summarized below:

Exhibit 6-23

1. WATER:
Water is one of the main and biggest reasons. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months, that have affected not only homesteads in this area but also the livestock and wildlife have been affected. Adding the additional 577 housing units, as well as a 200-acre golf course, a general store, a fire station, and a possible skiing and sledding hill that the developers are proposing, would significantly affect the water sources.
2. FIRE:
There would be an alarming number of safety concerns if there were to be another fire in the area. If there were to be an increase in traffic on the roads (due to construction or daily commuting or random traffic), then this could cause a problem with roads becoming blocked making it difficult for residents to get out safely, as well as first responders being able to safely access the area. Having these additional structures so close to each other would create more fire fuel and make it more difficult to control or fight a fire, compared to the current landscaping that is there. Spring Valley already has only 3 accessible emergency routes, without any additional traffic.
3. TRAFFIC:
The significant amount of traffic increase that would be created in the area would affect many of the residents that currently live in the area, as well as residents and businesses around the area. The traffic would increase to become unmanageable, that it would affect not only County Road 114 but also, County Road 115, County Road 119, County Road 110, and different road routes that go through Cattle Creek and over towards Missouri Heights and Cottonwood Pass towards Eagle. The road usage increase would create more dust, pollution and noise, that this rural area is not meant to have or endure. There would be a significant increase in traffic that would also affect Highway 82, which is already having many problems with the volume of traffic. The developers are indicating that traffic would increase to 5,700 trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.
4. WILDLIFE:
The wildlife in the area has changed over the years but has been returning to the area for the last few years, including elk. Multiple herds of elk have re-established their migration routes that run through Spring Valley, Spring Valley Ranch, Lookout Mountain, Elk Springs, High Aspen Ranch and surrounding areas. Black bears have also been returning to the high mountains of the area, even after the Grizzly Creek Fire had pushed them out temporarily. There are a significant number of deer that have also created a home all throughout Spring Valley and the surrounding areas, as well as the white-tailed jackrabbits. Mountain lions still live within Spring Valley, Lookout Mountain, and surrounding areas as a part of their territory for feeding and breeding. This development will have a major impact on wildlife and would make it extremely difficult for their migration routes to breeding to being hit by traffic. They would be forced to move to another area that will not be able to accommodate their needs to survive.
Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This

Exhibit
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development would not benefit the community or the county, it would be taking away from local businesses and the small town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan. We need to keep our rural mountain areas rural.
My wife and I are in the process of retiring and having our rural home transformed by this massive development would have a large impact on our quality of life, and likely force us to look elsewhere for a home. I think many of our neighbors fell the same way.

Thank you for your consideration and for your work for Garfield County,

Simon Hambidge
486 Heather Lane
GWS 81601

Exhibit 6-24

From: Elizabeth Bayliss
To: Philip Berry
Subject: Proposed Spring Valley Development
Date: Tuesday, March 26, 2024 5:39:11 PM

Dear Mr. Berry,

My name is Elizabeth Bayliss and I am a resident at 486 Heather Lane in Glenwood Springs. I am writing to you in your role as Senior Planner for Garfield County with my concerns about the proposed sale and development of Spring Valley Ranch.

There are many reasons why this sale and subsequent development should not be approved. Some of the main key points of concern are summarized below:

- **WATER:**
  - The proposed Spring Valley Ranch development would have a catastrophic effect on water availability in the area. Existing property owners rely on well water which is already tenuous and variable. There have already been summer water shortages affecting residential and livestock use. This means that even partial development risks water supplies for existing residents. Further stressing the water table in the area with any of the proposed development would jeopardize household water for current residents.
    Glenwood Springs has been a statewide leader in anticipating water needs for the town (e.g., the recent negotiations around Shoshone water rights). Disallowing the Spring Valley Ranch development would be equally forward thinking and proactive for local residents, livestock, and wildlife.

- **FIRE:**
  - The town and Spring Valley "got lucky" with the superb management of the Grizzly Creek fire several years ago. Spring Valley was used as a primary camp for the Hotshot Crews and enabled them to access the Lookout Mountain burn edges and work on containment. However, there is plenty of remaining wildfire fuel on Lookout. If there were another fire in the area, the proposed development would prevent easy access for crews, make fire control much more difficult, and impede evacuation. Spring Valley already has only 3 accessible emergency routes, without any additional traffic.

- **TRAFFIC:**
  - None of the existing roads in Spring Valley (CR 113, 114, 115, 119, 110) can support the increase in traffic that would result from the proposed development. These routes access Cattle Creek, Missouri Heights, Lookout Mountain, Cottonwood Pass, among other routes. The road usage increase would create more dust, pollution and noise. The increase in traffic would also affect Highway 82, which is already overburdened. The developers are indicating that traffic would increase to

Exhibit 6-24

5,700 trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.

- **WILDLIFE:**
  - Multiple herds of elk have re-established their migration routes that run through Spring Valley, Spring Valley Ranch, Lookout Mountain, Elk Springs, High Aspen Ranch and surrounding areas. Black bears have also been returning to the high mountains of the area, even after the Grizzly Creek Fire had pushed them out temporarily. Many deer range throughout Spring Valley and the surrounding areas, as well as white-tailed jackrabbits. Mountain lions still live within Spring Valley, Lookout Mountain, and surrounding areas as a part of their territory for feeding and breeding. Wildlife support the lifestyle people choose when they live in the Roaring Fork Valley in general and Spring Valley in particular.

- **OUTDOOR ACTIVITIES ON LOOKOUT**
  - Glenwood Springs has long been economically supported by residents and visitors who appreciate the rural resources of the valley – whether hunting, fishing, riding, hiking, trail running, rafting, birding, hot springs, attending concerts, dining in restaurants or other activities. The proposed development would destroy much of the Lookout Mountain wildland for people as well as for wildlife.

Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This development would not benefit the community or the county, it would be taking away from local businesses and the small town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan.

Thank you for taking the time to consider these perspectives.

Sincerely,

Elizabeth Bayliss

Exhibit 6-25

From: Glenn Hartmann
To: Philip Berry
Subject: FW: Garfield County website inquiry - SVR Public Comment
Date: Friday, April 12, 2024 11:24:24 AM

From: Tom Jankovsky <tjankovsky@garfield-county.com>
Sent: Friday, April 12, 2024 10:40 AM
To: steviek6@yahoo.com
Cc: Glenn Hartmann <ghartmann@garfield-county.com>
Subject: RE: Garfield County website inquiry

Steve
Thank you for your email, I will forward it on to Community Development

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From: noreply@formstack.com <noreply@formstack.com>
Sent: Thursday, April 11, 2024 7:10 PM
To: Tom Jankovsky <tjankovsky@garfield-county.com>
Subject: Garfield County website inquiry

Subject: Spring Valley Development

Name: Steve Kuschner

Email: steviek6@yahoo.com

Phone Number: (970) 355-4504

Message: On first glance this is just too big a development for the area. Maybe 30-40 homes on 35 acre lots but 500+ homes and a few thousand trips down 114/82?

Exhibit 6-26

From: Glenn Hartmann
To: Philip Berry
Subject: FW: Garfield County website inquiry - Senior Planner
Date: Friday, April 12, 2024 2:10:46 PM

From: noreply@formstack.com <noreply@formstack.com>
Sent: Friday, April 12, 2024 2:09 PM
To: Glenn Hartmann <ghartmann@garfield-county.com>
Subject: Garfield County website inquiry - Senior Planner

Subject: Spring Valley Ranch

Name: Paul Burbidge

Email: pburbidge@ranelson.com

Phone Number: (970) 471-9157

Message: Glenn
As an elk springs resident I am not against of for the developemnet but we must do something about the 82 intersection either way. The up valley turn lane is not near long enough and I fear every time I get stuck in the inside lae with nowhere to go until the light turns.
Thanks for all you do.

Paul

Exhibit
6-27

April 16, 2024

Glen Hartman
Garfield County Planning & Zoning,
RE: Spring Valley Ranch PUD - Storied Development

CC: Garfield County Commissioners

I have lived as an adjacent property owner for 34 years. The following are my concerns for this development.

Water: Sufficient data has been collected by the Spring Valley Coalition and water experts, that show the development will not be able to sustain on their own the water supply needed for their development. This will cause hardship to the surrounding properties as their supply will deplete as the bigger draw by Storied takes place. Although Storied says they will rectify any issues, the fact is the drawn out legalities of such will not be affordable for individuals as it will be for Storied. Therefore, based on the upfront data, it is sufficient to decline this development to preserve the future condition of water supply to the existing community.

In addition, I have already experienced previous owners and their managers having manipulated my personal water supply. A unilateral decision was made by a manager representing the owner of Spring Valley Ranch to give a neighbor permission to destroy the spring water line for their ability to build their home on top of it. This cut off my access to the 25% spring ownership of water to irrigate my land and supply water to my home and outbuildings. I currently haul my water from a neighbor who has interest in the Hopkins spring.

The commissioners granted me use of the well that was drilled on the SVR property the year they were out of water themselves and had to qualify for the drilling. This is a mere bandaid as it does not address the value of loss in quality, quantity or monetary damage that was taken from me.

As Storied or the existing owners request any further water rights, drilling or projects that require water usage, it should be mandatory to first address my concern and replace the spring line and access. Additionally, Storied and existing owner should initiate to meet with the other Hopkins Spring owners for the consideration of their concerns for the affect this

Exhibit
6-27

development will have on their supply and the current condition of the spring box.

The back entrance to my property is sandwiched between the driveway used for the ranch house which I have an easement and the proposed second entrance on 115 road to access the development. Currently, a dump truck or similar sized, is heard from my home when it rides 115 and passes my property. I do not want this traffic noise within my earshot increased by the development. Housing is planned right behind my property entrance, and this is not acceptable.

Also, the entrance to the development is at the top of the hill behind my home and from either direction makes this entrance dangerous to view turning maneuvers. Certain times of the day the sun is also a blinding factor on this hill further increasing lack of visibility.

I propose the entrance to the development be moved a mile down the road where it does not infringe on another's driveway. The existing location also affects multiple other neighbors whom are clustered around me.

I do not want pubic or private trails on the lower valley floor. It is the commingle of hundreds of wildlife migration daily and they have first dibs to that environment without human distraction. Additionally, the ranching done by the Neislaniks should not be lessened to make way for human activities. We need to preserve ranch land and respect those willing to oversee this land for the overall effects of community. I am not in favor of watching humans transverse across my view of the valley, hearing their conversations. Only wildlife have the right of way.

Storied has said that Garfield County is not allowing the developers to improve Red Canyon Road. This road will not support any additional traffic. Additional traffic will be inevitable and is an accident waiting to happen on an unforgiving road resulting likely in a fatality. This risk begins immediately with employees of contractor's. Regardless of intent to use the 114 road, there will always be a large measure that will not adhere or be informed. Additionally, this will cause additional patrol from Garfield's deputy's to settle lawful issues on site because of inevitable incidences that will increase rapidly.

Exhibit
6-27

Since Garfield County does not want to improve the road, then they should not approve the development and be a cause along with Storied to harm a traveler on the Red Canyon Road due to increased use that the road is not equipped for. To suggest or make law that the road be shut down or manipulated in any other way for any increase is not acceptable to myself or the community who depend on this passage for travel and emergency vehicles.

No commercial businesses in rural setting. There is no need for a convenience store. Locals are comfortable to go to Thunder River, 4 miles down 114. If you choose to live out of town, then you choose to plan ahead for needs. Storied should not take the prosperity from an already locally owned business for their personal gain and call it a convenience to locals.

A fire station should be erected by the existing owner regardless of development. Since they own a majority of land in Spring Valley with its high fire rating of 10, it is likely that a fire would start on their land first. They should be able to be first responders to manage their own land and help to isolate any further casualties from existing neighbors.

As you can see from the 115 road, dozens of wildlife trails enter this road from the top of the SVR acres, crossing the road into the lower valley field. Construction overall will inhibit the continuation of this wildlife traffic, keeping them from the needed pasture. They will not find new migration patterns to enter via the developments roadways or surrounding backyards of occupied homes to reach the valley floor and return daily as they do. The development should not detour or block existing travel routes for wildlife. Spring Valley Ranch should be considered as a wildlife preserve.

Road 115 improvements from a rural to a city appearance and function will have a new look and lack the quality of life that the residence have lived for. This additional traffic will inhibit the many neighbors who walk this road for their personal enjoyment and exercise of their pet's off leash. Traffic will be heard throughout the valley as sound carries exponentially. This development is designed for vacationeers who will not contribute to the quality of life but only take from it. I am opposed to the development.

Exhibit
6-27

My son is a deputy in Garfield County and they patrol Spring Valley regularly. It is expected there will be much disturbance in the valley including near and around the ranch house and the entire area at large. Security will be compromised as the area is introduced to strangers. This will expose my home with loss of privacy and threat to safety. Calling the Sherriff's office will increase 100 fold.

I am no stranger to the shyster's who have exposed me to their treason, betrayal, while I have lived adjoined to this property and have caused me personal injury with property loss and defamation of character. I want to be protected by keeping the serenity as is.

Thank you.

Donnalyne LaGiglia
4002 County Road 115
Glenwood Springs, Co 81601
donnalyneshalom@aol.com
970 948 6108

Exhibit
6-28a

4/18/24

April 18, 2024

Garfield County Administration & Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO

Dear Garfield County Commissioners:

My name is Susan Zedlacher and as a multigenerational resident of Colorado, this valley, and a current resident of Elk Springs, I am writing to express my increasing alarm by the proposed development of Spring Valley Ranch. Needless to say, I am *adamantly opposed* on a number of fronts.

Those concerns include, but are not limited to the following:

1) **Roads-** County Road 114 is our only egress. The steep grade and sharp curves along this narrow road demand extra caution. In addition, the intersection at the bottom is dangerous as evidenced by the recent fatal accident at the entrance to highway 82. Increased traffic, especially by heavy construction vehicles will only exacerbate congestion and the challenges for safe egress and ingress. In an emergency, with a mass evacuation and needed access for emergency vehicles, its use could become catastrophic. Beyond 114, the negative impacts on highway 82 are inevitable as even more cars attempt to turn onto that busy road. The dangers of that highway are notorious. Not a day goes by that I do not receive at least one phone alert about an accident on that road.

2) **Housing**-increased pressure on affordable housing which is already at a critical mass, will become even more of a challenge for our local workforce. This week I received a notice from my ophthalmologist, the *only* ophthalmologist in the valley who will now vacate his practice in Glenwood Springs. Highlighted in his letter he stated "the cost of living, particularly housing in our community, makes recruitment of both optometrists and ophthalmologists especially difficult. We remain in an active, aggressive recruitment mode with national search firms but have been unsuccessful to date." This will now create a hardship for those of us who need specialized vision care.

3) **Wildlife**-clearly the map presented by Storied Development greatly impacts the grazing and calving area for our local elk herds. A recent report by CPW alerted us to the fact that the size of these herds and the number of calves produced has diminished over the past few years.

4) **Water**-the importance of this element and the possible ramifications of further pressure on our aquifers cannot be overstated. Obviously, water is an essential resource for all of us who live in this arid climate. But, agriculture and local wildlife depend on its reliability. Needless to say it is critical for our safety in the event of a wildfire, which we all know is an ever present concern in our area.

Exhibit
6-28a

In conclusion, we already have 10 golf courses between Aspen and Rifle, 3 of which are private. Are we really going to permit another 27 holes of *privately* owned golf courses, not to mention a south facing ski area with 3 chairlifts? Can you imagine the helicopter noise as all those lift towers are placed and heavy equipment is brought in to emaciate our pristine fields for recreation provided to serve a select few? To further sacrifice the precious and vanishing rural character of this valley for the benefit of a f*ew second homeowners* from other states to the detriment of our current hardworking, *permanent* residents would be unconscionable. Please, do not allow this project to go forward.

Thank you for your attention to this matter,

Susan Zedlacher

Susan Zedlacher

Exhibit
6-28b
5/1/24

Wildfires and emergencies

garco911.com – register
garfieldcounty.net – updates / subscribe

From: noreply@formstack.com <noreply@formstack.com>
Sent: Wednesday, May 1, 2024 12:44 PM
To: communications <communications@garfield-county.com>
Subject: Website inquiry - Communications

Subject: Opposition to Storied Spring Valley Development

Name: Susi Zedlacher

Email: szedlach@aol.com

Phone Number: (970) 274-1427

Message: Good Morning,

I am writing out of concern regarding the proposed Spring Valley Ranch development, to which I am adamantly opposed on a number of fronts. As a 3rd generation Colorado resident, this ranks among the most egregious proposals I have seen. The detrimental impacts to water, wildlife, traffic and roads, safety, and the very rural character of our valley cannot possibly be offset by any "benefits" that Storied is pushing.
Rather than elaborate on each of those concerns, I will just highlight a recent study by the Roaring Fork Conservancy on Cattle Creek, which will unquestionably be impacted by this massive development. The confluence of that stream with the Roaring Fork River is already on Colorado's list of impaired waters. Though the upper watershed quality is currently excellent,RFC has cautioned that further water withdrawals could significantly reduce streamflow from irrigation, leading to reduced dilution which will exacerbate water quality. Storied will demand major irrigation for residents, 27 holes of golf, and snowmaking for their ski hill. How will pesticides affect the surrounding land and water? In essence, the gradient of increased land use in the area from this development will unquestionably impact downstream water quality, aquatic life stress, and downstream degradation of stream health in Cattle Creek, the Roaring Fork, and ultimately the Colorado River. Needless to say, the local wildlife will experience the most immediate effects. Not only will the local elk herd potentially be displaced from a prime grazing area and lose forage, their very health and survival will also be threatened by a diminished and important water source.

Thank you for your time and attention to this matter,

Exhibit
6-28b

Susi Zedlacher
Elk Springs

Exhibit
6-29

Priscilla Prohl-Cooper
4350 County Road 115
Glenwood Springs, CO 81601
970-274-4632
Pdprohl24@gmail.com

April 18,2024

Garfield County Administration & Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

Dear Garfield County Commissioners,

My name is Priscilla Prohl-Cooper. I am a resident who resides at 4350 County Road 115. I am writing to the board of the Garfield County Commissioners office, with my strong opposition to the proposed development proposal of the Spring Valley Ranch, located in Glenwood Springs.

I believe that the proposed development will have detrimental effects on our community. Some of my concerns are summarized below:

1. **WATER:**
   Water is one of my great concerns. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months that have affected not only homesteads in this area but also the livestock and wildlife. The two years that Spring Valley Ranch was filling up their reservoir the spring I rely on was significantly affected.

   Global climate change and the on-going drought has contributed to water quality and quantity issues for the entire Colorado River water system. Allowing them to utilize large quantities of this precious resource to irrigate and make snow is irresponsible.

   Adding the additional 577 housing units, as well as a 200-acre golf course, a general store, a fire station, and a possible skiing and sledding hill that the developers are proposing, would significantly affect these precious water resources.

2. **WILDLIFE:**
   The Spring Valley PUD is located within what the CPW calls the High Priority Habitat. The CPW's comments in their referral letter states that "this development will severely fragment and degrade the habitat essential for wildlife". As I understand it the

Exhibit 6-29

Elk are considered an umbrella species and protecting them will indirectly also protect other species. The CPW also state in their referral letter " The loss of over 5,908 acres of critical elk habitat from direct, indirect and cumulative impacts will make managing to maintain the current elk population challenging". I personally see elk herds in the spring and fall migrate back and forth from the valley floor to the area where the developer wants to put the majority of the homes (see attached maps). I encourage each of you to review the referral letter from the CPW with great attention.

3. **FIRE:**
There is an alarming number of safety concerns if there were to be another fire in the area today. If there were to be an increase in traffic on the roads then this could cause a problem with roads becoming blocked making it difficult for residents to get out safely, not to mention the first responders being able to safely access the area. Having these additional structures so close to each other would create more fire fuel and make it more difficult to control or fight a fire, compared to the current landscaping that is there. Spring Valley has only 3 accessible emergency routes, without the additional traffic.

4. **TRAFFIC:**
The significant amount of traffic increase that would be created in the area would affect the residents that currently live in the area, as well as residents and businesses around the area. The traffic would increase to become unmanageable, and would not only affect County Road 114 but County Road 115, County Road 119, County Road 110, and all of the different road routes that go through Cattle Creek, over towards Missouri Heights and Cottonwood Pass towards Eagle. The road usage increase would create more dust, pollution, wildlife collisions and noise, this is simply not something this area can endure. There would also be a significant increase in traffic that would affect Highway 82, which already has many problems with the current volume of traffic. The developers are indicating that traffic would increase to 5,700+/- trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.

Please consider all of the negative impacts that this proposed development for the Spring Valley Ranch will have on the neighboring residents and the county as whole. I think you will see it greatly outweighs the contributions they could offer. In the developers own words "this community is designed for 2nd homeowners", which will not benefit our rural community in any way. Spring Valley is very special area and we all have a responsibility to ensure it stays this way, we won't get a second chance.

It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan as I understand it.

Exhibit
6-29

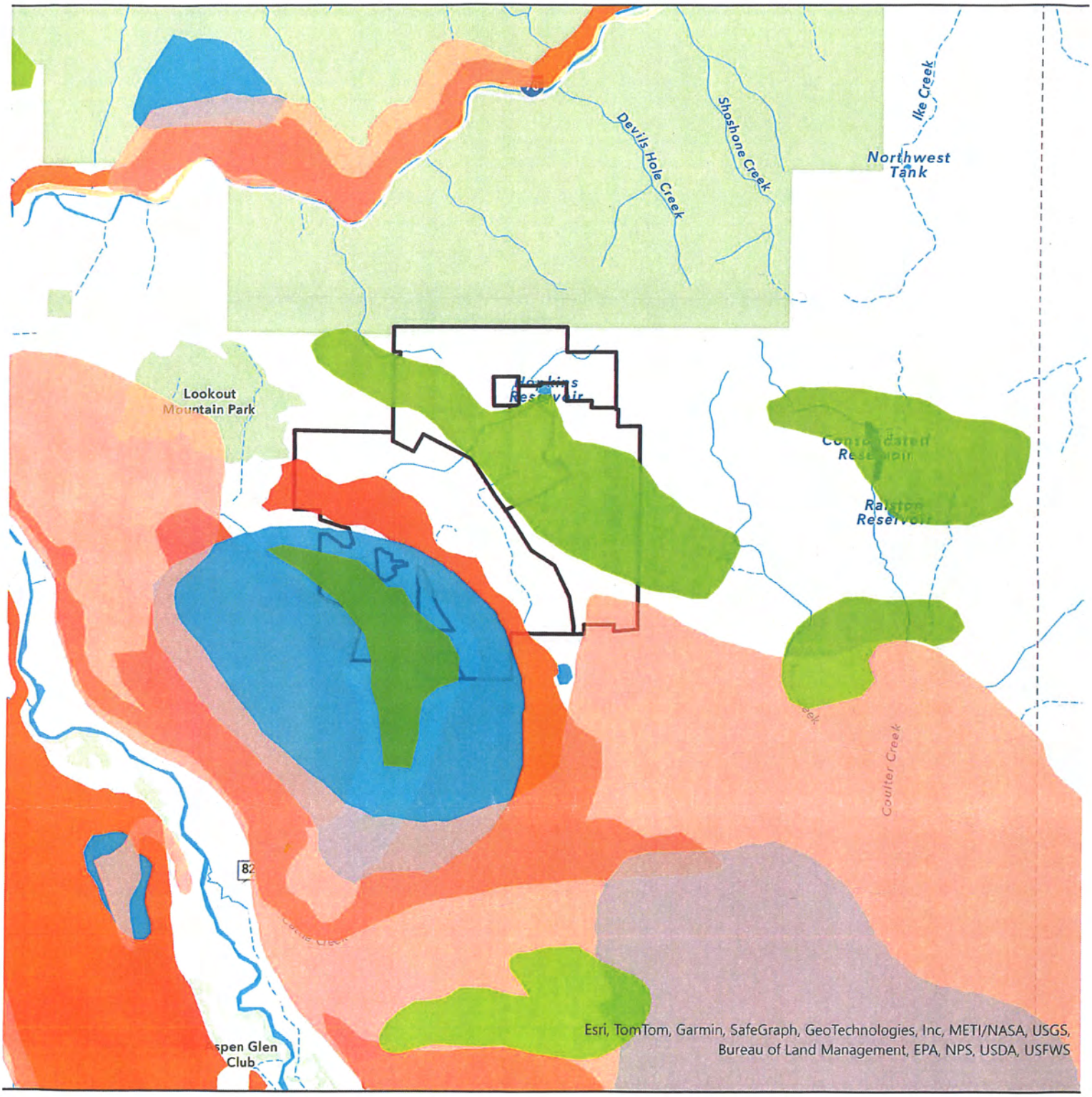
We need to keep our rural mountain areas rural. I greatly appreciate your time and consideration with this matter.

Respectfully,

Priscilla Prohl-Cooper

Exhibit 6-29

Spring Valley Ranch



Legend

- Elk Production Area HPHD
- Elk Severe Winter Range HPHD
- Elk Winter Concentration Area HPHD
- Mule Deer Winter Concentration Area HPHD
- Garfield County Parcels

N

Exhibit
6-29

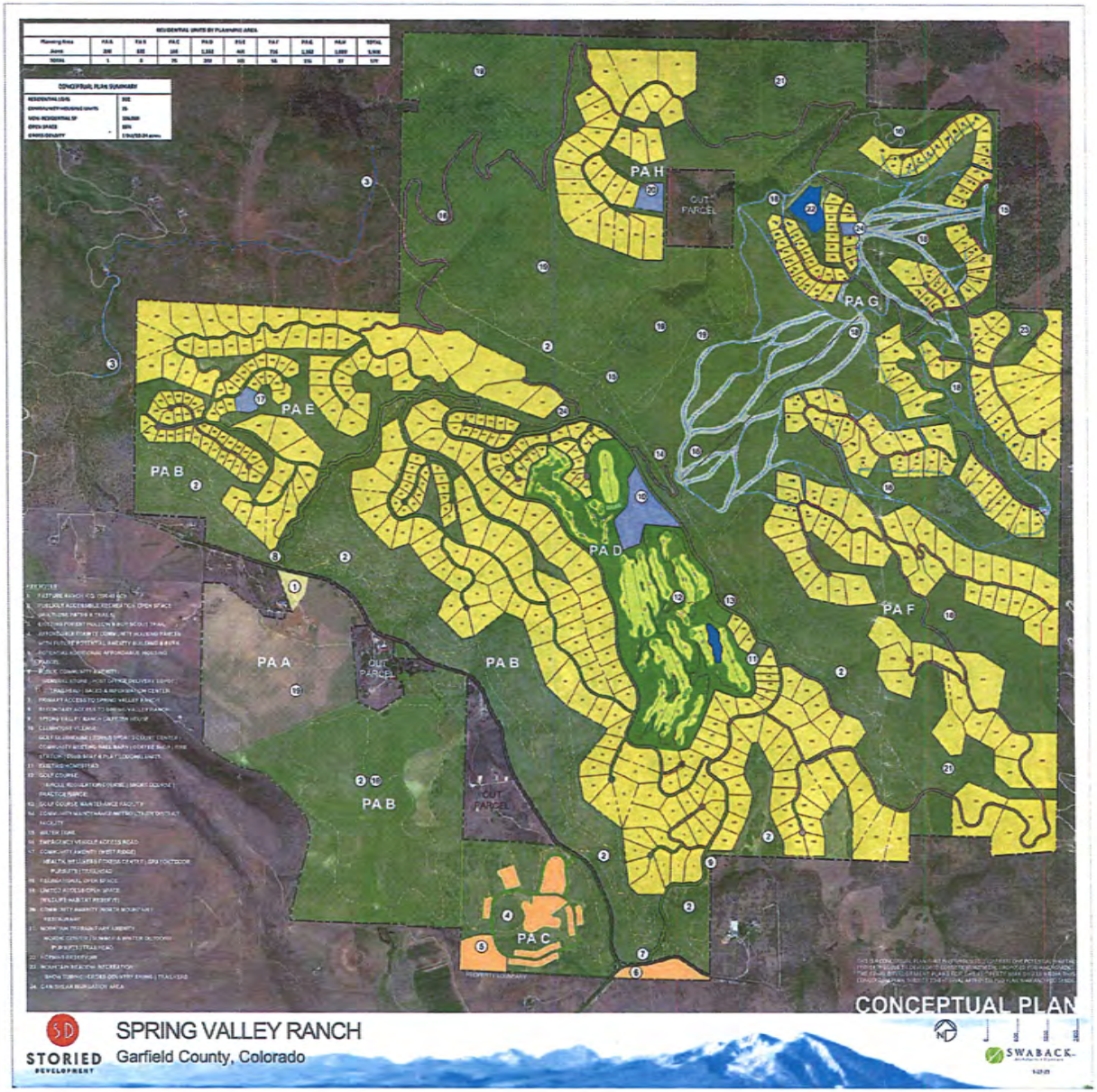

PA H
OUT PARCEL
PA G
PA E
PA B
PA D
PA F
PA A
OUT PARCEL
PA B
OUT PARCEL
PA B
PA C
CONCEPTUAL PLAN
SPRING VALLEY RANCH
Garfield County, Colorado
STORIED DEVELOPMENT
SWABACK

Exhibit 6-30

From: noreply@formstack.com
To: Philip Berry
Subject: Garfield County website inquiry - Senior Planner
Date: Monday, April 22, 2024 5:33:31 PM

Subject: Oppose the future Spring Valley Ranch Development by Storied Development.

Name: Stephanie Hernandez

Email: shernandez2001@hotmail.com

Phone Number: (303) 919-1727

Message: I am writing to complain and oppose the future Spring Valley Ranch Development by Storied Development. My family is building a permanent home in Elk Springs and relocating from Denver and fears this development will negatively impact all the reasons we selected this location and Garfield County.
There are numerous Negative impacts of this new development. To highlight a few; on wildlife habitat, Land and water resources, transportation infrastructure and the rural character of Garfield County.
• Displacing wildlife and disrupting deer and elk migration and caving.
• The planned development intends to use 1,000,000 gallons of water per day during the summer and almost as much in winter for snowmaking on a private ski hill, where water wells already have reduced water production during dry summers.

Exhibit
6-30

• The development with its target market of exclusive second-home owners, may increase property values and TAXES in an area already facing a critical housing and labor shortage.
• The average daily traffic count is estimated to increase to up to 5703 new vehicle trips/weekday. This will exacerbate serious safety concerns on Highway 82 and the intersections at County Roads 110/113, 114, and 115, as well as cause wear and tear to roads.
• In addition, Country Road 114 is the primary evacuation route when another wildfire occurs in the Spring Valley area, and this development will create congestion and significant safety issues in the event of an evacuation.
• It will ruin the rural character of the county and the reason so many of us have chosen to live there.
• Another ski mountain is not needed when there are already 5 in the area. That is a total waste of resources for selfish needs.
• The golf course will create run off chemicals into the ground water and our water resources and create contamination to residents and nature.
• Light pollution will occur, destroying the serenity that we had hoped to enjoy by living in the area and living among low lighting regulations.

I beg that you take these negative impacts under consideration by concerned citizens and prohibit the planned Spring Valley Ranch Development by Storied Development.

Sincerely,
Stephanie Hernandez
Elk Springs

Exhibit 6-31

From: Glenn Hartmann
To: Philip Berry
Subject: FW: Garfield County website inquiry
Date: Tuesday, April 30, 2024 11:17:43 AM

From: Tom Jankovsky <tjankovsky@garfield-county.com>
Sent: Monday, April 29, 2024 6:23 PM
To: solsen9610@gmail.com
Cc: Glenn Hartmann <ghartmann@garfield-county.com>
Subject: RE: Garfield County website inquiry

Hi Siri
Thank you for your email. I will forward it on to Community Development.

From: noreply@formstack.com <noreply@formstack.com>
Sent: Monday, April 29, 2024 1:02 PM
To: Tom Jankovsky <tjankovsky@garfield-county.com>
Subject: Garfield County website inquiry

Subject: Spring Valley Ranch Development Proposal

Name: Siri Olsen

Email: solsen9610@gmail.com

Phone Number: (970) 309-1413

Message: Dear Commissioner Jankovsky:

I am writing in opposition to the new Spring Valley Ranch development proposal. I acknowledge the presence of old development rights on the property which are equally concerning and which I think need to be changed. I oppose this development for the following reasons:

1. Potentially negative impact on water rights in the surrounding areas. Ranchers and homes in the immediate vicinity will be most acutely affected, and many have apparently already had to drill their wells deeper in recent years. Tapping into the aquifer will also affect water for the entire surrounding area. Given the dire long term outlook for water in the west, should we really be encouraging more golf courses?

Exhibit 6-31

2. Impact on traffic. The addition of this many homes will overwhelm the road up to CMC. It is a narrow, windy road that can be treacherous in the winter. The potential impact on the intersection with Highway 82 is hard to overstate. This is already a dangerous intersection and numerous accidents have occurred there in recent years. Adding this amount of additional traffic will overburden the infrastructure . At a minimum, substantial changes will need to occur at that intersection to handle the additional traffic and make it safe.

3. Wildfire Risk. Further development in areas such as this add to the risk of wildfire. If a fire does occur in the area, how will residents safely evacuate? We must recognize the limits of Highway 82 and I70 as safe evacuation routes as we continue to add more population in the valley. Will Cottonwood pass actually get developed in a way so as to be usable as a safe alternate evacuation route?

4. Loss of Rural Character and Habitat. This development is located in a beautiful area which is home to extensive wildlife. At what point do we finally ask whether protecting such areas should outweigh the right to develop endlessly? Our valley is developing so rapidly that I fear soon we will no longer recognize it. This is the exact type of land we should be protecting rather than developing.

5. Character of Development. Do we really need a fancy lifestyle community for wealthy second homeowners and another golf course at this point? The affordable units in the development do not outweigh the destruction that will be caused by another fancy neighborhood of trophy homes for non residents. The starting point of the prices for these homes is ridiculous—do we really want to try to be more like Aspen?

We are at a breaking point in our valley. The amount of development that has occurred in the last 5-10 years has overwhelmed our carrying capacity. Our roads cannot handle more traffic. Our healthcare system is overloaded as are some of our schools and all of our daycare settings. We are in the beginning stages of what will be a long term fight over water which becomes scarcer with every passing year. We finally have to start saying no especially to developments that are totally unnecessary and simply driven by greed and the endless desire to indulge rich peoples' desire to have second homes anywhere they want.

Sincerely,

Siri Olsen

Exhibit
6-32

4/29/2024

Garfield County Administration & Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

My name is Janae Jochum. I am a resident at 594 County Rd. 110, Glenwood Springs, CO 81601. Along with my husband and my mother and father-in-law, we are writing to the board to express how we all strongly oppose the proposed development of Spring Valley Ranch located above us. There are several concerns that this development will create and the consequences will be detrimental adding to current issues we cannot afford in this valley.

1. Our main concern is that this valley cannot afford more citizens who do not have anything to offer to the work force. We need housing for people who will be providing services to the existing citizens. We need the tradesman and professionals who need jobs and housing. We do not need wealthy people who will not be providing services to our communities.
2. Traffic is already a nightmare. Our roads have become dangerous and we cannot keep up with all the traffic as is. Not to mention that our county roads cannot handle that kind of traffic, especially construction traffic.
3. Another great concern is the demand for watering unnecessary amenities like golf courses and ski hills. I know many of the houses run out of water up in those mountains in the dry summers. This is an obvious reason why a development like this is unattainable!
4. Wildlife and nature are huge reasons why we live here. I am 4th & 5th generation of this valley and I feel it is our responsibility to protect as much land for the wildlife as possible!

You all must consider the reasons why we love living here! Please also remember our virtues, values and quality of life. This company wanting to come in to develop is ultimately for the bottom line, greed and money. Do they really care about the quality of our life here?! I beg that you support our current citizens of this community and consider all the above negative impacts. By keeping it real, it will enrich our lives even more without this development!!! We are available to help fight against this development in any way!

Best Regards,
Janae, Kevin, Leslie & Gary Jochum
970-379-2065

Exhibit
6-33

Wildfires and emergencies

garco911.com – register
garfieldcounty.net – updates / subscribe

From: noreply@formstack.com <noreply@formstack.com>
Sent: Friday, May 3, 2024 3:38 PM
To: communications <communications@garfield-county.com>
Subject: Website inquiry - Communications

Subject: Spring Valley Development

Name: Ron Acee

Email: ron.acee63@gmail.com

Phone Number: (970) 456-5575

Message: I do not support the Development of Spring Valley by a Georgia corporation.
1. It would consume way too much water for 2 golf courses and the 577 new homes proposed.
2. These homes will most likely not be afforby locals, but by investors out of state for rental income.
3. The current roads would not be able to handle all of the resulting new traffic.
4. Wildlife would have a negative impact.
5. This valley does not need this kind of housing, what we need is affordable housing for workers with families to be able to support existing businesses.

Exhibit 6-34a

From: Brooke Winschell
To: Philip Berry
Subject: FW: Garfield County website inquiry - Community Development
Date: Monday, May 6, 2024 8:40:42 AM
Attachments: image001.png

Another one.

Thanks,

Brooke A. Winschell

Community Development Administrative Specialist
Community Development Department
bwinschell@garfield-county.com
Direct 970-945-1377 Ext. 4212
T: 970-945-8212 | F: 970-384-3470
108 8th St, Suite 401 | Glenwood Springs, CO 81601

From: noreply@formstack.com <noreply@formstack.com>
Sent: Monday, May 6, 2024 8:36 AM
To: Glenn Hartmann <ghartmann@garfield-county.com>; Brooke Winschell <bwinschell@garfield-county.com>
Subject: Garfield County website inquiry - Community Development

Subject: Spring Valley Ranch

Name: Jim Austin

Email: jaustin444@yahoo.com

Phone Number: (970) 945-7668

Message: Questions/ concerns in re Storied application:

-The up-front costs of this project are enormous: supplying a central sanitation system and tying it to the existing Spring Valley Sanitation District, supplying drinking water throughout, building a golf course, a ski area, a club house, interior roads, improving County Rd 114- Hwy 82 intersection, improving (4 lanes?) approximately 5 miles of

Exhibit 6-34a

County Rd 114, and all other costs necessary to just get the project to be (hopefully) saleable. Seems like an awful lot of money to spend prior to getting the first dollar of investment return.
- The ski area is problematic at best. It may be similar in altitude and aspect to Steamboat Springs, but Spring Valley gets nowhere near the snowfall of Steamboat. Also, a golf course at that elevation may have a 6-month season. It seems these two amenities are more of a marketing ploy than realistic assets to the development.
- This is a dry land ranch with no year-round stream, no lakes, no tall, majestic trees, but with lots of oak brush, service berry bushes, sage brush, some evergreens, and quite a bit of dead and dying aspen. The two great assets of the ranch are the world class view of the Elk Range and the open space with its wildlife, its quiet and solitude, and just its space. That open space goes away with 577 dwellings and the world class view is compromised. Is developing this particular ranch really a viable business plan for a high end second home development?
- I don't' believe proximity to Aspen or Snowmass can be considered an asset. The ranch is an hour and a half or more driving time from those ski areas and concert venues during morning and afternoon commutes on an increasingly busy 4 lane highway. And driving to Glenwood even now is a stop and go slog if you wish to have dinner there.
- I question Storied's claim that the water storage volume of the ranch is equivalent to Ruedi Reservoir storage area. Our total catchment area is approximately 15.8 sq miles. No one knows for sure the total aquifer capacity. Ruedi Reservoir holds a lot of measurable water. Spring Valley has more?
- "Recharge is greater than demand". The Spring Valley aquifer has as existing users Colorado Mountain College, Auburn Ridge Apartments, Pinyon Pine Apartments, Rivendell Sod Farm, Elk Springs' 100 (?) homes, Pinyon Mesa's 50 (?) homes, and another 50 or more scattered single-family dwellings within our catchment area. Given this existing usage and coupled with our region wide 20 plus year dryer and warmer than historical norm of rainfall and temps, how can anyone be certain that our use plus the addition of 577 more homes, golf courses, and ski area can be accommodated by our aquifer's recharge now much less in our children's or grandchildren's lifetime.
- Storied assures us that the existing agricultural uses will be maintained and that there will be no fences permitted within the development. Open range grazing and seasonal movement of cattle from valley floor winter range to summer range higher on the ranch and onto the grazing allotments beyond is a current use on the ranch. New residents will not tolerate cows and/or cow pies on their property or on their golf courses. I believe cattle on Spring Valley Ranch will soon be history. Storied should delete that particular "continued use" claim from their presentation.

I just don't think this plan makes sense either for Storied or for Garfield County.

Thank you,

Jim Austin
3726 CR 115
Glenwood Springs, CO 81601

Exhibit 6-34b

From: Glenn Hartmann
To: Philip Berry
Subject: FW: Garfield County website inquiry
Date: Monday, May 6, 2024 2:38:05 PM

From: Tom Jankovsky <tjankovsky@garfield-county.com>
Sent: Monday, May 6, 2024 2:25 PM
To: jaustin444@yahoo.com
Cc: Glenn Hartmann <ghartmann@garfield-county.com>
Subject: RE: Garfield County website inquiry

Jim
Thank you for your email. I will forward it on to Community Development.

From: noreply@formstack.com <noreply@formstack.com>
Sent: Monday, May 6, 2024 9:13 AM
To: Tom Jankovsky <tjankovsky@garfield-county.com>
Subject: Garfield County website inquiry

Subject: Spring Valley Ranch

Name: Jim Austin

Email: jaustin444@yahoo.com

Phone Number: (970) 945-7668

Message: Dear Commissioner Jankowski,
In 1978 I purchased a building site from the then owners of Spring Valley ranch, Lyle and Hal Beattie. In 1979 I built my home there, a home in which I still live. A few years later, 1984 I believe, the then Garfield County Commissioners approved the ranch's first PUD. It was an absurd proposal for over 2000 dwelling units, golf course, hotel, helicopter pad, etc. but it passed. That PUD has been amended and adjusted several times in the intervening 40 years. This latest proposal now in front of you is, I believe, the best plan yet. Regardless, however good it is, it is still not appropriate for our neighborhood. 577 dwelling units is just too much for our rural slice of Garfield County. Add in a problematic "ski area", a golf course, 26 miles of new residential roads, other amenities necessary for a high dollar gated second home development, accessed by 5 miles of two-lane twisty County Road 114 and it simply does not make sense for Garfield County. I'm actually not sure it even makes sense for the

Exhibit
6-34b

developer. I ask you to please deny this application.
Thank you,
Jim Austin
3726 CR 115, Glenwood Springs
CO 81601

Exhibit 6-35

From: Brooke Winschell
To: Philip Berry
Subject: FW: Garfield County website inquiry - Community Development
Date: Tuesday, May 7, 2024 8:22:41 AM
Attachments: image001.png

Another Spring Valley response.

Thanks,

Brooke A. Winschell

Garfield County

Community Development Administrative Specialist
Community Development Department
bwinschell@garfield-county.com
Direct 970-945-1377 Ext. 4212
T: 970-945-8212 | F: 970-384-3470
108 8th St, Suite 401 | Glenwood Springs, CO 81601

From: noreply@formstack.com <noreply@formstack.com>
Sent: Monday, May 6, 2024 4:44 PM
To: Glenn Hartmann <ghartmann@garfield-county.com>; Brooke Winschell <bwinschell@garfield-county.com>
Subject: Garfield County website inquiry - Community Development

Subject: Anti Spring Valley

Name: Sara Shainholtz

Email: shainholtz@gmail.com

Phone Number: (303) 888-2414

Message:

Garfield County Administration & Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

Exhibit
6-35

Dear Garfield County Commissioners,

My name is Sara I am a resident who resides in Carbondale. I am writing to the board of the Garfield County Commissioners office, with my strong opposition to the proposed development proposal of the Spring Valley Ranch, located in Glenwood Springs.
I believe that the proposed development will have detrimental effects on our community. Some of my concerns are summarized below:

WATER:
Water is one of my great concerns. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months that have affected not only homesteads in this area but also the livestock and wildlife.

Global climate change and the on-going drought has contributed to water quality and quantity issues for the entire Colorado River water system. Allowing them to utilize large quantities of this precious resource to irrigate and make snow is irresponsible.

Adding the additional 577 housing units, as well as a 200-acre golf course, a general store, a fire station, and a possible skiing and sledding hill that the developers are proposing, would significantly affect these precious water sources.

FIRE + SAFETY:
There is an alarming number of safety concerns if there were to be another fire in the area today. If there were to be an increase in traffic on the roads then this could cause a problem with roads becoming blocked making it difficult for residents to get out safely, not to mention the first responders being able to safely access the area. Having these additional structures so close to each other would create more fire fuel and make it more difficult to control or fight a fire, compared to the current landscaping that is there. Spring Valley already has only 2 accessible emergency routes, without any additional traffic.

TRAFFIC:
The significant amount of traffic increase that would be created in the area would affect the residents that currently live in the area, as well as residents and businesses around the area. The traffic would increase to become unmanageable, and would not only affect County Road 114 but County Road 115, County Road 119, County Road 110, and all of the different road routes that go through Cattle Creek, over towards Missouri Heights and Cottonwood Pass towards Eagle. The road usage increase would create more dust, pollution, wildlife collisions and noise, This is just not something this area can endure. There would be a significant increase in traffic that would also affect Highway 82, which is already having many problems with the volume of traffic. The developers are indicating that traffic would increase to 5,700 trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.

Exhibit
6-35

WILDLIFE:
The wildlife in the area has changed over the years but has been returning to the area for the last few years, including elk. Multiple herds of elk have re-established their migration routes that run through Spring Valley, Spring Valley Ranch, Lookout Mountain, Elk Springs, High Aspen Ranch and surrounding areas. Black bears have also been returning to the high mountains of the area, even after the Grizzly Creek Fire had pushed them out temporarily. There are a significant number of deer that have also created a home all throughout Spring Valley and the surrounding areas, as well as the white-tailed jackrabbits. Mountain lions still live within Spring Valley, Lookout Mountain, and surrounding areas as a part of their territory for feeding and breeding.
This development will have a major impact on wildlife and would make it extremely difficult for their migration routes to breeding to being hit by traffic. They would be forced to move to another area that will not be able to accommodate their needs to survive.

Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This development would not benefit the community or the county, it would be taking away from local businesses and the small town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan. We need to keep our rural mountain areas rural.

Thank you,
Sara

Exhibit 6-36

From: Brooke Winschell
To: Philip Berry
Subject: FW: Garfield County website inquiry - Community Development
Date: Tuesday, May 7, 2024 8:23:14 AM
Attachments: image001.png

Another Spring Valley response.

Thanks,

Brooke A. Winschell

Garfield County

Community Development Administrative Specialist
Community Development Department
bwinschell@garfield-county.com
Direct 970-945-1377 Ext. 4212
T: 970-945-8212 | F: 970-384-3470
108 8th St, Suite 401 | Glenwood Springs, CO 81601

From: noreply@formstack.com <noreply@formstack.com>
Sent: Monday, May 6, 2024 7:55 PM
To: Glenn Hartmann <ghartmann@garfield-county.com>; Brooke Winschell <bwinschell@garfield-county.com>
Subject: Garfield County website inquiry - Community Development

Subject: I do not support the Spring Valley Development

Name: Courtney Carr

Email: court.carr@gmail.com

Phone Number: (972) 904-2580

Message: My name is Courtney Carr. I am a business owner and resident who resides at 537 S 2nd Street, Carbondale CO 81623. I am writing to the board of the Garfield County Commissioners office, with my strong opposition to the proposed development proposal of the Spring Valley Ranch, located in Glenwood Springs. I believe that the proposed development will have detrimental effects on our community. Some of my concerns are summarized below:

Exhibit 6-36

1. WATER:
Water is one of my great concerns. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months that have affected not only homesteads in this area but also the livestock and wildlife.

Global climate change and the on-going drought has contributed to water quality and quantity issues for the entire Colorado River water system. Allowing them to utilize large quantities of this precious resource to irrigate and make snow is irresponsible.

Adding the additional 577 housing units, as well as a 200-acre golf course, a general store, a fire station, and a possible skiing and sledding hill that the developers are proposing, would significantly affect these precious water sources.

2. FIRE + SAFETY:
There is an alarming number of safety concerns if there were to be another fire in the area today. If there were to be an increase in traffic on the roads then this could cause a problem with roads becoming blocked making it difficult for residents to get out safely, not to mention the first responders being able to safely access the area. Having these additional structures so close to each other would create more fire fuel and make it more difficult to control or fight a fire, compared to the current landscaping that is there. Spring Valley already has only 2 accessible emergency routes, without any additional traffic.

3. TRAFFIC:
The significant amount of traffic increase that would be created in the area would affect the residents that currently live in the area, as well as residents and businesses around the area. The traffic would increase to become unmanageable, and would not only affect County Road 114 but County Road 115, County Road 119, County Road 110, and all of the different road routes that go through Cattle Creek, over towards Missouri Heights and Cottonwood Pass towards Eagle. The road usage increase would create more dust, pollution, wildlife collisions and noise, This is just not something this area can endure. There would be a significant increase in traffic that would also affect Highway 82, which is already having many problems with the volume of traffic. The developers are indicating that traffic would increase to 5,700 trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.

4. WILDLIFE:
The wildlife in the area has changed over the years but has been returning to the area for the last few years, including elk. Multiple herds of elk have re-established their migration routes that run through Spring Valley, Spring Valley Ranch, Lookout Mountain, Elk Springs, High Aspen Ranch and surrounding areas. Black bears have

Exhibit
6-36

also been returning to the high mountains of the area, even after the Grizzly Creek Fire had pushed them out temporarily. There are a significant number of deer that have also created a home all throughout Spring Valley and the surrounding areas, as well as the white-tailed jackrabbits. Mountain lions still live within Spring Valley, Lookout Mountain, and surrounding areas as a part of their territory for feeding and breeding.
This development will have a major impact on wildlife and would make it extremely difficult for their migration routes to breeding to being hit by traffic. They would be forced to move to another area that will not be able to accommodate their needs to survive.

Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This development would not benefit the community or the county, it would be taking away from local businesses and the small town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan. We need to keep our rural mountain areas rural.
I moved to this area and am a business owner because I value our sacred space, land, and environment. This development will go against everything that has made The Valley so special to me and our local residents. I strongly oppose the Spring Valley development that is being proposed

Thank you for your time,
Courtney Carr, DDS

Exhibit
6-37

From: noreply@formstack.com
To: Philip Berry
Subject: Garfield County website inquiry - Senior Planner
Date: Tuesday, May 14, 2024 10:18:29 PM

Subject: Spring Valley Ranch

Name: Michael Jelks

Email: m.jelks@comcast.net

Phone Number: 7203395250

Message: Hello,
I am writing to oppose the future Spring Valley Ranch Development by Storied Development. My family is building a permanent home in Elk Springs and relocating from Denver and fears this development will negatively impact all the reasons we selected this location and Garfield County.
There are numerous Negative impacts of this new development.
* Displacing wildlife and disrupting deer and elk migration and caving.
* The planned development intends to use 1,000,000 gallons of water per day during the summer and almost as much in winter for snowmaking on a private ski hill, where water wells already have reduced water production during dry summers.
* Another ski mountain is not needed when there are already 5 in the area. That is a total waste of resources for selfish needs.

Exhibit
6-37

* The golf course will create run off chemicals into the ground water and our water resources and create contamination to residents and nature.
* The development with its target market of exclusive second-home owners, may increase property values and TAXES in an area already facing a critical housing and labor shortage.
* The average daily traffic count is estimated to increase to up to 5703 new vehicle trips/weekday.
* This will exacerbate serious safety concerns on Highway 82 and the intersections at County Roads 110/113, 114, and 115, as well as cause wear and tear to roads.
* Country Road 114 is the primary evacuation route when another wildfire occurs in the Spring Valley area, and this development will create congestion and significant safety issues in the event of an evacuation.
* It will ruin the rural character of the county
* Light pollution will occur, destroying the serenity that we had hoped to enjoy by living in the area and living among low lighting regulations.

Take these negative impacts under consideration by concerned citizens and prohibit the planned Spring Valley Ranch Development by Storied Development.

Sincerely,
Michael Jelks
Elk Springs

Exhibit 6-38

From: Brooke Winschell
To: Philip Berry
Subject: FW: Garfield County website inquiry - Community Development
Date: Tuesday, May 28, 2024 12:32:23 PM
Attachments: image001.png

Hello Philip,

Here is another inquiry regarding Spring Ridge PUD.

Thanks,

Brooke A. Winschell

Community Development Administrative Specialist
Community Development Department
bwinschell@garfield-county.com
Direct 970-945-1377 Ext. 4212
T: 970-945-8212 | F: 970-384-3470
108 8th St, Suite 401 | Glenwood Springs, CO 81601

From: noreply@formstack.com <noreply@formstack.com>
Sent: Friday, May 24, 2024 9:46 AM
To: Glenn Hartmann <ghartmann@garfield-county.com>; Brooke Winschell <bwinschell@garfield-county.com>
Subject: Garfield County website inquiry - Community Development

Subject: Save Spring Valley

Name: Elizabeth Donovan

Email: bethfredell@hotmail.com

Phone Number: (760) 264-5263

Message: Hello,

As a Glenwood Springs local I am writing to you in opposition to the Spring Valley

Exhibit
6-38

Development. We don't have the infrastructure in this area to support any more growth. The traffic is already insane in Glenwood Springs and our cost of living is too inflated as it is now. The amount of water required to water ANOTHER grassy golf course should be illegal- especially when the people of Glenwood are only allowed to water every other day. Not only is Spring Valley a beautiful area that should be protected, but if it was developed it should be for affordable housing. Thank you for your time.

Sincerely,

Elizabeth Donovan
1116 Colorado Ave
Glenwood Springs, CO 81601

Exhibit 6-39

From: Brooke Winschell
To: Philip Berry
Subject: FW: Garfield County website inquiry - Community Development
Date: Tuesday, May 28, 2024 12:28:43 PM
Attachments: image001.png

Hello Philip,

Here is another inquiry regarding Spring Valley Ranch PUD.

Thanks,

Brooke A. Winschell

Community Development Administrative Specialist
Community Development Department
bwinschell@garfield-county.com
Direct 970-945-1377 Ext. 4212
T: 970-945-8212 | F: 970-384-3470
108 8th St, Suite 401 | Glenwood Springs, CO 81601

From: noreply@formstack.com <noreply@formstack.com>
Sent: Monday, May 27, 2024 2:21 PM
To: Glenn Hartmann <ghartmann@garfield-county.com>; Brooke Winschell <bwinschell@garfield-county.com>
Subject: Garfield County website inquiry - Community Development

Subject: Concern about Spring Valley Ranch Development

Name: Elise Osenga

Email: 1erudite.person@gmail.com

Phone Number:

Message: Dear Mr. Hartmann,

I have recently become aware of the proposed Spring Valley Ranch (SVR)

Exhibit 6-39

Development to be carried out by Storied Development. I am writing to express my concern as a Garfield County resident with a keen awareness of the limitations and pressures to our water supply in this region.

Circulating estimates of water use for the SVR development are 440,000 gallons/day during the winter and 1,000,000 gallons/day during the growing season, the time when growers and producers most need access to water. I am apprehensive that this immense level of water use will prove unsustainable over time and may be devastating for agricultural producers in the Spring Valley area who already face challenges of water availability during warm drought years.

Considering the scarcity of surface water in the Spring Valley area, most of this water presumably will be pumped from underground sources. Drops to water tables impact land areas far beyond the location at which pumping occurs, and the proposed development could potentially decrease yield for residential and agricultural wells beyond the geographic footprint of the development itself. Have any studies been conducted as to regional impacts of this large increase in pumping?

Additionally, the age of water in many aquifers is often very old, with recharge rates that can take decades or longer. If the aquifer is depleted at a rate faster than it replenishes (a likelihood considering the ongoing drought in Western Colorado), the aquifer will eventually run dry and cease to yield. In such a scenario, the residents and producers of Spring Valley would receive little comfort from any water right offsets purchased by the SVR development from Ruedi Reservoir. I am not aware of any infrastructure currently in existence that could transport water from the Roaring Fork up to Spring Valley, and it is unclear how the offset releases would be transported up to replace groundwater in the Spring Valley area if needed.

As far as water use and water rights are concerned, I would be curious to know if the Georgia developers are aware that owning a water right in Colorado does not guarantee the presence of physical water. You can own a right to stream that runs dry, and no amount of paper work will cause that water to appear. This is a common concept out here on the Western Slope, but in my experience, this idea is new to many of those who live in the Eastern United States.

I strongly urge Garfield County to reconsider approving this extensive development and potentially calamitous demand for water use in our already water-strapped county. I understand that some degree of development in the county is desirable and necessary, but I urge the County to:

(1) consider creating more cautious requirements around new developments of water use, and

(2) if it has not already been carried out, to require an extensive hydrologic survey for Spring Valley that calculates available groundwater, identifies groundwater recharge rates, and characterizes how water tables will change for the entire region surrounding the development if large-scale pumping occurs.

Exhibit
6-39

As it currently stands, I feel that the Spring Valley Development poses a threat to the viability of the already existing Spring Valley community.

The residents of Garfield county as a whole, especially the already hard-pressed agricultural community, deserve an approach to development that considers not just near-term economic benefits, but also long term impacts to the water supply on which we all depend.

Thank you for your time.

Sincerely,
Elise Osenga

Exhibit 6-40

From: Glenn Hartmann
To: Philip Berry
Subject: FW: Garfield County website inquiry
Date: Thursday, June 6, 2024 12:36:51 PM

From: David Hodgins <dmh@sustentogroup.com>
Sent: Thursday, June 6, 2024 8:11 AM
To: Tom Jankovsky <tjankovsky@garfield-county.com>
Cc: Glenn Hartmann <ghartmann@garfield-county.com>
Subject: Re: Garfield County website inquiry

> You don't often get email from dmh@sustentogroup.com. Learn why this is important

Thank you, Mr. Commissioner -

I appreciate your quick response here.

Dave

David Hodgins
Founder & CEO

+1 970 319 6611
david@sustentogroup.com

La Kretz Innovation Campus
Los Angeles, CA
sustentogroup.com

Sent from my iPhone

> On Jun 6, 2024, at 5:46 AM, Tom Jankovsky <tjankovsky@garfield-county.com> wrote:
>
> Hi David

Exhibit 6-40

Thank you for your email, I will forward it on to Community Development

---

From: noreply@formstack.com <noreply@formstack.com>
Sent: Wednesday, June 5, 2024 8:37 PM
To: Tom Jankovsky <tjankovsky@garfield-county.com>
Subject: Garfield County website inquiry

Subject: Opposition to Proposed Spring Valley Development

Name: david hodgins

Email: dmh@sustentogroup.com

Phone Number: 9703196611

Message: Hello - as a resident of the area, I am writing to express my deep concern about the proposed development at Spring Valley.

The traffic would adversely impact my community during and after construction, threaten public safety, and damage the character of the area.

The water use from a golf course would be irresponsible, and the scale of the development would place an unsustainable burden on community resources.

I urge you to require the developer to bring their environmental, traffic, water, and other studies current, and to re-envision their plan to be one that contributes positively to the community.

Exhibit
6-41

August 26, 2024

Garfield County Community Development Department
108 8th Street, Suite 401
Glenwood Springs, Colorado 81601

Attention: Glenn Hartmann, Director, and Philip Berry, Planner Ill
Re: PUAA-05-23-8967 Spring Valley Ranch PUD - Substantial Modification/ Amendment

Dear Mr. Hartmann and Mr. Berry,

I am a professional member of the Colorado Wildlife Conservation Project (CWCP), which is a collection of many of the leading conservation organizations in Colorado. During the Hickenlooper Administration I was a member of the Colorado Parks and Wildlife Commission and Chair for two terms of the Commission. The organizations of the CWCP signing below have authorized me to write to you on their behalf regarding the above-described PUD.

We, the undersigned organizations, acknowledge and respect the right of private property owners to develop their land within applicable law. In fact, the conservation community greatly values the important role of private property owners in the conservation of wildlife. Agricultural owners were the first conservationists and played a pivotal role in the preservation of elk, deer, moose, bear, lion, big game in general as well as waterfowl, small game, non-game, and threatened and endangered species.

There is a long tradition in Colorado of cooperation between Colorado Parks & Wildlife (CPW) and landowners to preserve important habitat for wildlife. CPW maintains many programs to improve habitat, manage game damage, and foster public and private partnerships to preserve wildlife while minimizing impacts on private landowners. Without the crucial role of private landowners, particularly around sensitive winter and calving habitat many species prevalent on the landscape would disappear as they have in other states.

I was able to attend one meeting with the Developer, Storied Living, and local homeowners. Unfortunately, I have not been invited to further meetings despite my request to provide input. We have been able to communicate with other impacted groups, such as nearby homeowners, and to review CPW's two letters and the Developer's proposed amendments to its plans submitted to you.

The Developer has an extensive record, although it does not include developments in the unique cultural and ecological environment present in Colorado. We note the Developers February 27, 2024 changes to adopt some of CPW's suggestions and appreciate that willingness to work with CPW. Nevertheless, we are concerned that most of CPW's suggestions have not made their way into the Developer's plans.

Exhibit
6-41

While many species exist on the property, we are concerned particularly about the elk herd. The property provides critical winter range and calving habitat. We would note that the Garfield County Commission has previously expressed interest in preserving the elk herd and asking CPW to manage toward that goal. The herd has already suffered some habitat fragmentation from prior development.

We would ask that the PUD application include *all of CPW's recommendations*. We believe that any development will stress the habitat and wildlife, but the best opportunity to preserve the wildlife is to incorporate CPW's scientific wildlife management suggestions.

Should the development not go forward, we stand ready to assist the property owner in pursuing a conservation easement through the organizations already active in the Roaring Fork and the working ranch community.

If I can answer any questions or provide additional information, please feel free to contact me at 303-717-6133. I would also appreciate the opportunity to address any public hearings on this matter and request you keep me posted as to the timing of such events.

Very truly yours,

John V. Howard, Jr.

John V. Howard, Jr.

Exhibit
6-42

From: Richard Rogers
To: Mike Samson; John Martin; Tom Jankovsky; Glenn Hartmann; Philip Berry
Subject: Spring Valley Ranch Development
Date: Sunday, September 8, 2024 8:20:21 AM

I am resident of Carbondale, so I don't have a direct dog in this fight. But I do want to weigh in to bring a different perspective than that of the organized opposition to the proposed new development.

Our valley is in a difficult economic condition. The affluence of Aspen continues to flow down valley, and even "sleepy" places like Carbondale have become unaffordable to the vast majority of people. What we need is smart economic development—development that brings in resources to help make the valley an economically diverse place to live. While I acknowledge that the proposed development will likely not contain more affordable housing, do the revenue streams that result from the development help fund affordable housing projects?

Next, the current residents of the directly affected area appear to have a case of NIMBY. They have their sanctuary, and don't seem to acknowledge that they messed with someone else's sanctuary to have their own. The county does not have an obligation to protect them at the expense of a project that would benefit the greater community.

To be clear, I'm neither in favor of nor against the project. My concern is that a relatively minor number of parties may be unduly influencing a project that might benefit a larger constituency.

Sincerely,

Richard Rogers

Exhibit 6-43

From: Liz Tierney
To: Glenn Hartmann; Philip Berry; Mike Samson; John Martin; Tom Jankovsky
Subject: Opposition to Spring Valley Ranch development
Date: Monday, September 9, 2024 3:36:21 PM

Dear Garfield County Board of Commissioners,

I am a resident who resides in Garfield County. I am writing to the board of the Garfield County Commissioners office, with my strong opposition to the proposed development proposal of the Spring Valley Ranch, located in Glenwood Springs.

I believe that the proposed development will have detrimental effects on our community. Some of concerns are summarized below:

WATER: Water is one of my great concerns. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months that have affected not only homesteads in this area but also the livestock and wildlife. The two years that Spring Valley Ranch was filling up their reservoir the spring I rely on was significantly affected.

Global climate change and the on-going drought has contributed to water quality and quantity issues for the entire Colorado River water system. Allowing them to utilize large quantities of this precious resource to irrigate and make snow is irresponsible. Adding the additional 577 housing units, as well as 2 golf courses, a general store, a fire station, and a South facing skiing and sledding hill that the developers are proposing, would significantly affect these precious water sources.

FIRE: There is an alarming number of safety concerns if there were to be another fire in the area today. If there were to be an increase in traffic on the roads then this could cause a problem with roads becoming blocked making it difficult for residents to get out safely, not to mention the first responders being able to safely access the area. Having these additional structures so close to each other would create more fire fuel and make it more difficult to control or fight a fire, compared to the current landscaping that is there. Spring Valley already has only 3 accessible emergency routes, without any additional traffic.

TRAFFIC: The significant amount of traffic increase that would be created in the area would affect the residents that currently live in the area, as well as residents and businesses around the area. The traffic would increase to become unmanageable, and would not only affect County Road 114 but County Road 115, County Road 119, County Road 110, and all of the different roadroutes that go through Cattle Creek, over towards Missouri Heights and Cottonwood Pass towards Eagle. The road usage increase would create more dust, pollution, wildlife collisions and noise, This is just not something this area can endure. There would be a significant increase in traffic that would also affect Highway 82, which is already having many

Exhibit 6-43

problems with the volume of traffic. The developers are indicating that traffic would increase to 5,700 trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.

WILDLIFE: The wildlife in the area has changed over the years but has been returning to the area for the last few years, including elk. Multiple herds of elk have re-established their migration routes that run through Spring Valley, Spring Valley Ranch, Lookout Mountain, Elk Springs, High Aspen Ranch and surrounding areas. Black bears have also been returning to the high mountains of the area, even after the Grizzly Creek Fire had pushed them out temporarily. There are a significant number of deer that have also created a home all throughout Spring Valley and the surrounding areas, as well as the white-tailed jackrabbits. Mountain lions still live within Spring Valley, Lookout Mountain, and surrounding areas as a part of their territory for feeding and breeding. This development will have a major impact on wildlife and would make it extremely difficult for their migration routes to breeding to being hit by traffic. They would be forced to move to another area that will not be able to accommodate their needs to survive.

Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This development would not benefit the community or the county, it would be taking away from local businesses and the small town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan. We need to keep our rural mountain areas rural.

Thank you for your time,

Elizabeth Tierney

Exhibit
6-44

9/10/2024

Garfield County Commissioners,

My husband and I, Gary and Kathy Morary are writing to you today with concerns of the Spring Valley Ranch Development. We have lived in Elk Springs for 17 years and bought our land and then built our dream home. The reason we built in this area was because of the peacefulness, views and enjoying the wildlife that lives here. In recent years the Roaring Fork Valley has experienced unprecedented growth & development. There are many reasons why this sale and development of the Storied Company project should NOT be allowed to be approved. I have outlined some of the points below.

TRAFFIC: The amount of traffic impacts that would occur due to this development is just not feasible with only one road (114) in and out of the area. Not to mention what would happen if a fire would arise, there would be no way for all the residents to get out safely and first responders to access the area with 1 road.

WATER: With the addition of 577 homes and golf courses, skiing, general store, etc.. our water would be significantly decreased.

WILDLIFE: This development would have major impacts on our precious wildlife that we moved here for. This is a big area for Elk calving and migration, not to mention deer, mountain lion, bear and birds.

We are asking you to please consider the negative impacts that this development for the Spring Valley Ranch would have on the neighboring residents and the county. This development would not benefits the community in any way or the county, it would be taking away from the local businesses and the small-town mountain plan.

Please keep our rural mountain areas rural and protect our waters, land and wildlife that needs to survive.

Thank you for your time.

Exhibit
6-45

COMMENTS AND CONCERNS FOR SPRING VALLEY RANCH PUD AMENDMENT

ELK SPRINGS HOA, INC.

September 2024

Prepared by

SGM

118 West Sixth Street, Suite 200
Glenwood Springs, CO 81601
970.945.1004
970.945.5948 fax

Exhibit 6-45

COMMENTS AND CONCERNS FOR SPRING VALLEY RANCH PUD AMENDMENT

ELK SPRINGS HOA, INC.

PREPARED BY

MEGAN ORLOFF, PE

BAILEY LEPPEK, PE

DAVID SCHIOWITZ, PG

SGM PROJECT # 01502C.046

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1) Introduction

Spring Valley Holdings, LLC as the property owner, Storied Development, LLC as the Applicant, and John Fredericks, LANDWEST as the Representative filed a Land Use Change Permit Application with Garfield County to request a substantial PUD Amendment with a new Planned Unit Development (PUD) Guide and PUD Plan Map for a proposed development called Spring Valley Ranch (SVR). Elk Springs Homeowners Association (HOA) Inc. hired SGM to review the submittal documents for concerns related to water supply adequacy. This report summarizes technical questions and concerns from SGM regarding the PUD Amendment on behalf of Elk Springs HOA.

The following documents provided as part of the PUD Application were reviewed in preparation of this report:

- **Narrative Report:** "Spring Valley Ranch PUD Amendment Narrative Report" dated March 2023 (revised December 2023 for completeness), prepared by LandWest.
- **PUD Guide:** "Spring Valley Ranch PUD Guide" dated December 2023, prepared by LandWest.
- **Water Supply and Distribution Plan:** "Water Supply and Distribution Plan for the Spring Valley Ranch PUD, Garfield County, CO" dated February 2, 2023, prepared by Roaring Fork Engineering.
- **Aquifer Sustainability Report:** "Spring Valley Aquifer Sustainability Study" dated April 11, 2024 prepared by Colorado River Engineering Inc.
- **Legal Water Supply Letter:** Letter from Scott Miller of Patrick Miller Noto, PC to Garfield County Community Development Department RE: "Water Supply for Spring Valley Ranch PUD –PUD Amendment Application" dated January 31, 2023.
- **Case No. 22CW3009:** In addition, Spring Valley Holdings, LLC has filed a Water Court Application (Case No. 22CW3009) to re-establish conditional groundwater, surface, and storage water rights from the Spring Valley Aquifer for the SVR development. SGM has also reviewed the Application and Proposed Rulings in Case No. 22CW3009.

In addition to those provided with the PUD Application, SGM reviewed the following documents:

- **2000 Gamba Report:** Jerome Gamba & Associates, Inc., March 10, 2000. "The Spring Valley Hydrologic System." Prepared for Bill Peacher.
- **1990 USGS Report:** Robson, S.G., and Stewart, Michael, 1990, "Geohydrologic evaluation of the upper part of the Mesaverde Group, northwestern Colorado: U.S. Geological Survey Water-Resources Investigations," Report 90-4020, 125 p.
- **Udall Report:** Udall, Bradly, and Overpeck, Jonathan, dated March 24, 2017, "The twenty-first century Colorado River hot drought and implications for the future", published in Water Resources Research, Volume 53, Issue 3.
- **2020 Missouri Heights Report:** Resource Engineering, May 28, 2020, ""Missouri Heights Groundwater Monitoring Program" Prepared for the Basalt Water Conservancy District and the Colorado Water Conservation Board.

Attachment A to this report is an overview map of the Spring Valley Watershed, the SVR development, SVR wells as described in the Case No. 22CW3009 Application, other nearby developments, and Elk Springs HOA's wells, overlaid on geologic mapping from the Colorado Geological Survey (CGS). The corresponding CGS reports are included as **Attachment B**.

118 W. 6th St, Ste 200 Glenwood Springs, CO 81601 Phone: 970-945-1004 Fax: 970-945-5948

2) Executive Summary

SGM has the following main critiques on the water supply availability analysis for the SVR development:

Hydrogeology Review

1. Recharge Rate Among Aquifers and Subsurface Geology Not Adequately Considered

   The Aquifer Sustainability Report assumes SVR can rely on storage throughout the basin, overlooking the complex interconnected subsurface geology of isolated interconnected perched aquifers. SVR has not verified whether the transmission rate between aquifers is adequate to support the proposed demands. Applicant should provide an analysis of the rate of groundwater flow through aquifer to verify that recharge rate from the upper perched aquifers to the lower aquifers is sufficient to meet the demands of wells drilled into the lower valley aquifer.

2. Direction of Groundwater Flow Not Described

   Applicant does not provide information on direction of groundwater flow, and ignores the substantial portion of water that leaks out of the aquifer and likely enters the Roaring Fork alluvial aquifer, according to the 2000 Gamba Report.

   Applicant should provide a map of the potentiometric surface throughout the aquifer based on static water levels and indicate the direction of groundwater flow.

3. Overestimated Aquifer Storage Volume

   The Aquifer Sustainability Report appears to rely on all storage throughout the basin (including the upper perched aquifers) as a resource for balancing dry year depletions. Applicant should not rely on storage throughout the basin (including the upper perched aquifers).

   The Aquifer Sustainability Report assumed specific yield associated with an unconfined aquifer, however, well logs, and information from the 2000 Gamba Report indicate the aquifer may be semi-confined to confined. The applicant should reevaluate their analysis based on storage coefficient values for these conditions. SGM believes applicant has significantly overestimated the storage available in the various interconnected aquifers, by using this incorrect assumption. Reduced aquifer storage may reduce the reliability of the aquifer during prolonged dry period.

4. Calculated Recharge Based on Published USGS Rates Shows Significant Risk of Aquifer Mining

   Using established recharge rates from the USGS, SGM estimated the aquifer recharge volume to be 1,432 AF/year, which is 43 AF less than the anticipated 1,475 AF/year of demands from the SVR development, and 448 AF less than the anticipated 1,920.3 AF/year of demands for all Spring Valley developments. Based on this analysis, SGM believes that there is a significant risk of aquifer mining to occur by the proposed development of SVR.

5. Physical Water Supply Based on Aquifer Tests Not Demonstrated

   Consistent with Garfield County LUDC Section 4-203.M.1.c, the applicant should expand on the Physical Water Supply Report to include calculations of aquifer transmissivity and specific yield, and draw conclusions about the aquifer's recharge rate, and the ability of the aquifer to sustain the identified pumping rates in the long-term. The Physical Water Supply Report only included data from 24-hour pump tests, did not provide any long-term data or multiple day tests, and did not provide any data for monitoring wells to make conclusions about distance vs. drawdown to show how pumping from SVR wells will impact other nearby wells. Analysis of the pumping data overestimated

118 W. 6th St, Ste 200 Glenwood Springs, CO 81601 Phone: 970-945-1004 Fax: 970-945-5948

the potential aquifer yield because the analysis relied upon a simple specific yield calculation for each well and did not consider hydrologic conductivity of the aquifer, recovery, and well efficiency.

Water Supply Adequacy and Aquifer Sustainability

6. Aquifer Balance Assumptions Not Adequately Justified

   SVR has not justified all elements of the water balance equation in the Aquifer Sustainability Report. SVR should validate the data and assumptions used for conclusions of aquifer sustainability to be legitimate.

   - The Aquifer Sustainability Report does not address how the aquifer's ability to recharge would be impacted by prolonged dry periods (such as 2000 through 2020) or back-to-back dry years.
   - Landis Creek flow assumptions are not backed by data.
   - The aquifer balance neglects discharge through springs, seeps, and leakage to Roaring Fork River via the half graben fault described in the 2000 Gamba Report.

7. High Amount of Proposed Use

   SVR's proposed demands are high compared with existing developments, with diversions and depletions *over three times the amount of diversions/depletions for all other developments in the basin combined.* SVR should scale back its irrigation uses supplied by the aquifer (such as removing the requested golf courses).

8. Aquifer Sustainability Report Findings Not Consistent with Nearby More Comprehensive Studies

   The findings from the Aquifer Sustainability Report are not consistent with nearby more comprehensive studies. The 2020 Missouri Heights Report, a much more thorough and data-backed study, found the Missouri Heights Aquifer (a nearby watershed with a similar aspect, similar precipitation trends, and similar elevation, located just several miles south) shows negative recharge without import water over a ten-year period.

   In contrast, the Spring Valley has no imported water. Given the proximity and similarities between the two basins, SGM questions the findings that the Spring Valley Aquifer has a positive recharge balance in all conditions, given the Missouri Heights Aquifer shows negative recharge without import water over a ten-year period, based on a much more thorough and data-backed study.

9. Lack of Information About Landis Creek Senior Water Rights

   Consistent with Garfield County LUDC Section 4-203.M.1.d, the applicant should document the "historic use and estimated yield of claimed water rights" for the Landis Creek senior irrigation rights.

10. Potential for Aquifer Mining in Dry Years

    SVR has not proven the development's demands will not cause aquifer mining during extended dry-year periods. SVR appears to be relying on groundwater storage to sustain demands, which could lead to drawdown and eventually aquifer mining, impacting other wells. To protect the aquifer from a mining scenario:

    - SVR should commit to measures to be taken during dry years, such as decreased irrigation.
    - SVR should commit to a comprehensive groundwater monitoring plan that includes specific actions triggered by pre-established groundwater levels or drawdown thresholds. SGM recommends an executed agreement with Elk Springs HOA (and other aquifer users) for a comprehensive groundwater monitoring plan be a condition of approval of this PUD application.

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Water Demand Calculations

11. SGM has identified several issues with the demand calculations for the SVR PUD:
    a. Density calculations should not include the 200-acre Pasture District lot for the existing ranch, as including this skews the remaining proposed density to be lower.
    b. Agricultural uses and nursery/greenhouse and gardens, non-commercial are allowed in all Zone Districts except for Open Space Limited, but demands for these uses are not accounted for.
    c. Retail/Wholesale zones allow for Brewery, Winery, Cidery, Distillery use type, but demands are not accounted for. The Use Type of Brewery, Winery, Cidery, Distillery should not be allowed in this PUD as this would allow for water produced from groundwater to be exported outside of the aquifer area.
    d. Snowmaking is listed as a use type, but demands are not accounted for. SVR has also not demonstrated a plan for obtaining a legal or physical supply for snowmaking. The Use Type of Snowmaking should not be allowed in this PUD. Snowmaking would introduce a high water use which has not been quantified, and for which SVR has also not demonstrated a plan for obtaining a legal or physical supply. SGM recommends the applicant would need to return for a PUD amendment to allow for snowmaking once they can show demand and depletion calculations and can demonstrate legal and physical water supply for snowmaking.
    e. Car Wash is listed as a use type, but demands are not accounted for. Car washes have high demands. The car wash use type either needs to be removed from the Land Use Schedule or it needs to be specifically quantified and EQRs set aside for a car wash within the PUD.
    f. Golf Courses are contemplated, which is a high water use type. More information is needed to justify the golf course demands and show that SVR has adequate legal and physical supply to support this high level of water demand.

12. Golf Course Irrigation

    A major component of the SVR development's high demand is golf courses. Applicant's proposed demands for golf courses alone (329 AF annually per the Water Supply and Distribution Plan) are greater than the buildout demands of Elk Springs, Elk Mesa, Pinion Mesa, Colorado Mountain College, and Lookout Mountain Ranch combined.

    SGM recommends as conditions of approval of this PUD that applicant A) reduce the proposed irrigated acreage for golf courses to what applicant can demonstrate can be supplied by surface water supplies and B) irrigate golf courses with surface water supplies only (not groundwater).

13. Limitations on Equivalent Residential Units (EQRs)

    The SVR PUD should be held to a strict limit on the commercial EQRs *and depletions* that can be eventually developed within the PUD, to ensure that no use types cause SVR to exceed its planned demand and depletions for commercial uses.

14. Irrigated Area Limits

    Numbers from SVR differ regarding the maximum residential irrigation area planned. Additional information is needed on residential irrigation, including the planned large lots in Mountain District (5+ acres). Irrigation is a high consumptive use demand, and if irrigation expands beyond what is contemplated this could have serious consequences. The SVR PUD should be held to strict limits on allowable irrigated area, both total and for individual residential lots.

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15. Clarifying Demands

The Aquifer Sustainability Report needs to show the potable demands split between residential and commercial, between upper and lower areas of the PUD, and split into Planning Areas.

16. Discrepancies in EQR Count

Applicant should clarify discrepancies between the Aquifer Sustainability Report and Water Supply and Distribution Plan documents, including the total EQR count and domestic irrigation acreage.

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3) Hydrogeology Review

Recharge Rate Among Aquifers and Subsurface Geology Not Adequately Considered

The Aquifer Sustainability Report refers to the Spring Valley Aquifer as though it is one single interconnected aquifer. However, the report also acknowledges that the Spring Valley Aquifer is "a composite of a series of confined aquifers within the sediments overlaying bedrock which produce artesian wells" described as "hanging aquifers," or perched aquifers. The report also states: "These areas are interconnected by subsurface fractures that **slowly transmit** water from higher elevations to lower elevations. The upland areas are the primary area of recharge." The 2000 Gamba Report also describes this process: "Surface water is channeled into these detention basins or "hanging aquifers" via the fractured and rubblized surface basalt. Subsurface fractures interconnect the detention basins and act as **restricted conduits** that facilitate the **slow**, but continuous, **transmission of water from those at higher elevations to the ones below**." The Aquifer Sustainability Report does not address the rate of infiltration between the upland areas (which are the primary areas of recharge), and the lower aquifers (from which the water for the development will be pumped). The Aquifer Sustainability Report and 2000 Gamba Report describe the rate of infiltration between the higher aquifers and lower aquifers as slow, but does not provide calculations of the rate or an analysis of whether this slow transmission rate will be adequate to replace the high rate of diversions contemplated by SVR**.** Additional information should be provided in the form of correlation of well logs and piezometric surface maps to support the unfounded assumption that the Spring Valley Aquifer acts as a one single interconnect aquifer. The basis of the recharge calculations relies on this assumption and the large surface area (9,875 acres) tributary to the SVR. **Applicant should provide an analysis of the rate of groundwater flow through aquifers to verify that recharge rate from the perched upper aquifers to the lower aquifers is sufficient to meet the demands of wells drilled into the lower aquifer.**

Direction of Groundwater Flow Not Described

In addition, no data was provided on water table levels throughout the aquifer and groundwater flow direction. **Applicant should provide a map of the potentiometric surface throughout the aquifer based on static water levels and indicate the direction of groundwater flow.**

Aquifer Storage Volume Appears to be Overestimated

The Aquifer Sustainability Report appears to rely on all storage throughout the basin as a resource for balancing dry year depletions. The report's summary states: "In addition to the annual recharge, it has been estimated by Gamba that there is 68,000 to 105,000 acre-feet of water in storage in the SVA and upland areas which essentially serve as an underground reservoir to balance extreme dry year and extended drought-year recharge with water demands." Upon closer review of the 2000 Gamba Report, see **Figure 1,** not all 68,000 to 105,000 acre-feet in storage within the basin is located within the aquifers from which the SVR wells will be pumping. Approximately half of that storage is estimated within the upland volcanic areas, and the Aquifer Sustainability Report does not address the rate of transmission from the upland aquifers. The Aquifer Sustainability Report does acknowledge in the Aquifer Characteristics section that of the 68,000 to 105,000 acre-feet, much of it is in the upland aquifers and

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"38,000 to 46,000 acre-feet is stored in the SVA," or Spring Valley Aquifer. This does not consider the fact that the water within the Spring Valley Aquifer is within a series "ash and cinder lenses" which are "interconnected by subsurface fractures that slowly transmit water from higher elevations to lower elevations."

In summary, the Aquifer Sustainability Report assumes that SVR can rely on storage throughout the basin, overlooking the complex interconnected subsurface geology of isolated interconnected perched aquifers. The overview map in **Attachment A** shows the complexity of the geology. SVR has not verified whether the transmission rate between aquifers is adequate to support the proposed demands. Without verifying the transmission rate from the upper perched aquifers to the lower aquifers, **applicant should not rely on storage throughout the basin (including the upper perched aquifers).**

Furthermore, this storage volume assumed unconfined conditions with a specific yield (storage coefficient, S) ranging from 3% to 25%. However, based on review of the 2000 Gamba Report and wells logs, parts of the aquifer exhibit are confined to semi-confined conditions. This would decrease the specific capacity by *1 to 3 orders of magnitude (i.e. a factor of 10 to 1,000)* and would therefore reduce the assumed aquifer storage significantly. **The Aquifer Sustainability Report should address confined vs unconfined conditions reported throughout the SVR. SGM finds applicant is overestimating the storage available in the various interconnected aquifers.**

Upland volcanic areas 5,975 acres x 50 feet thick x 0.10 or 0.20 specific yield =	29, 875 to 59,750 acre feet
Spring valley aquifer gravel beds 1,500 acres x 10 feet thick x 0.25 specific yield =	3,750 acre feet
Spring valley aquifer silty clay sediments 1,500 acres x 140 feet thick x 0.03 specific yield =	6,300 acre feet
Spring valley aquifer very fine sand bed 1,500 acres x 70 feet thick x 0.20 specific yield =	21,000 acre feet
Volcanics at base of Spring Valley aquifer 1,500 acres x 50 feet thick x 0.10 or 0.20 specific yield =	7,500 to 15,000 acre feet
ESTIMATED TOTAL SPECIFIC YIELD OF AQUIFERS IN SPRING VALLEY HYDROLOGIC SYSTEM =	**68,425 to 105,800 AF**

Figure 1: Excerpt from 2000 Gamba Report

Calculated Recharge Based on Published USGS Rates Shows Significant Risk of Aquifer Mining

The Aquifer Sustainability Report estimated that the average annual recharge is 3,942 AF/year (which is three times the SVR diversion amount) and concludes this is sufficient to keep the aquifer from being depleted. As discussed in a following section this was estimated using a simple water budget for the tributary area of 9,875 acres. Using applicant's estimated 3,942 AF/year, SGM calculated that the corresponding recharge rate would be 4.79 inches annually. SGM compared this to published

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groundwater recharge rates developed by the USGS[1] for varying mean annual precipitation (see **Figure 2**). Using the values provided by SVR for geologic areas and mean precipitation, and the relationship developed by the USGS between mean annual precipitation and groundwater recharge, SGM estimated the average annual recharge rate for the tributary area to equal approximately 1.74 inches or 1,432 acre-feet per year (see **Table 1**). The estimated recharge rate based on published USGS data is substantially lower than applicant's estimated recharge rate (4.79 inches from applicant vs 1.74 inches from USGS, and 3,942 AF/year from applicant vs 1,432 AF/year from USGS).

This SGM analysis (showing an annual recharge rate 1,432 AF/year based on published USGS data) concludes that there is shortfall of 43 AF per year if the proposed development's demands of 1,475 AF/year (**Table 2**) were to come to fruition. Applicant provided a table of total diversions from the Spring Valley Aquifer (provided **Table 2** in this report), showing diversions of 1,920.3 AF/year for all Spring Valley Developments, which is 488.3 AF less than SGM's estimated recharge rate. Applicant calculated total annual depletions for the Spring Valley Aquifer at 1,262.8 AF for all Spring Valley Developments (**Table 2**), which is approximately 170 AF greater than the recharge rate estimated by SGM. Note that this assumes that all return flows from the developments return directly to the Spring Valley Aquifer, for which sufficient evidence has not been provided. **Based on this analysis, SGM believes that there is a significant risk of aquifer mining to occur by the proposed development of SVR.**

Table 1: Estimated Recharge Rate to Spring Valley Aquifer

Geologic Unit	Area (acres)	Mean Precip (in)	Estimated Recharge Rate (inches/year)	Recharge Volume (AF/year)
SGM Estimates Based on USGS Report*				
PPm	2,132	24	2.5	444
Tb	6,290	22	1.7	891
Ql	1,453	19	0.8	97
Total	**9,875**		**1.74**	**1,432**
Applicant's Estimated Reacharge Rate **			**4.79**	**3,942**

Notes: *Estimated recharge rate (inches) estimated from USGS Report[1], based on mean annual precipitation for each geologic unit, see **Figure 2**.

**Compared with estimates of recharge rate provided in Aquifer Sustainability Report.

[1] Robson, S.G., and Stewart, Michael, 1990, Geohydrologic evaluation of the upper part of the Mesaverde Group, northwestern Colorado: U.S. Geological Survey Water-Resources Investigations, Report 90-4020, 125 p.

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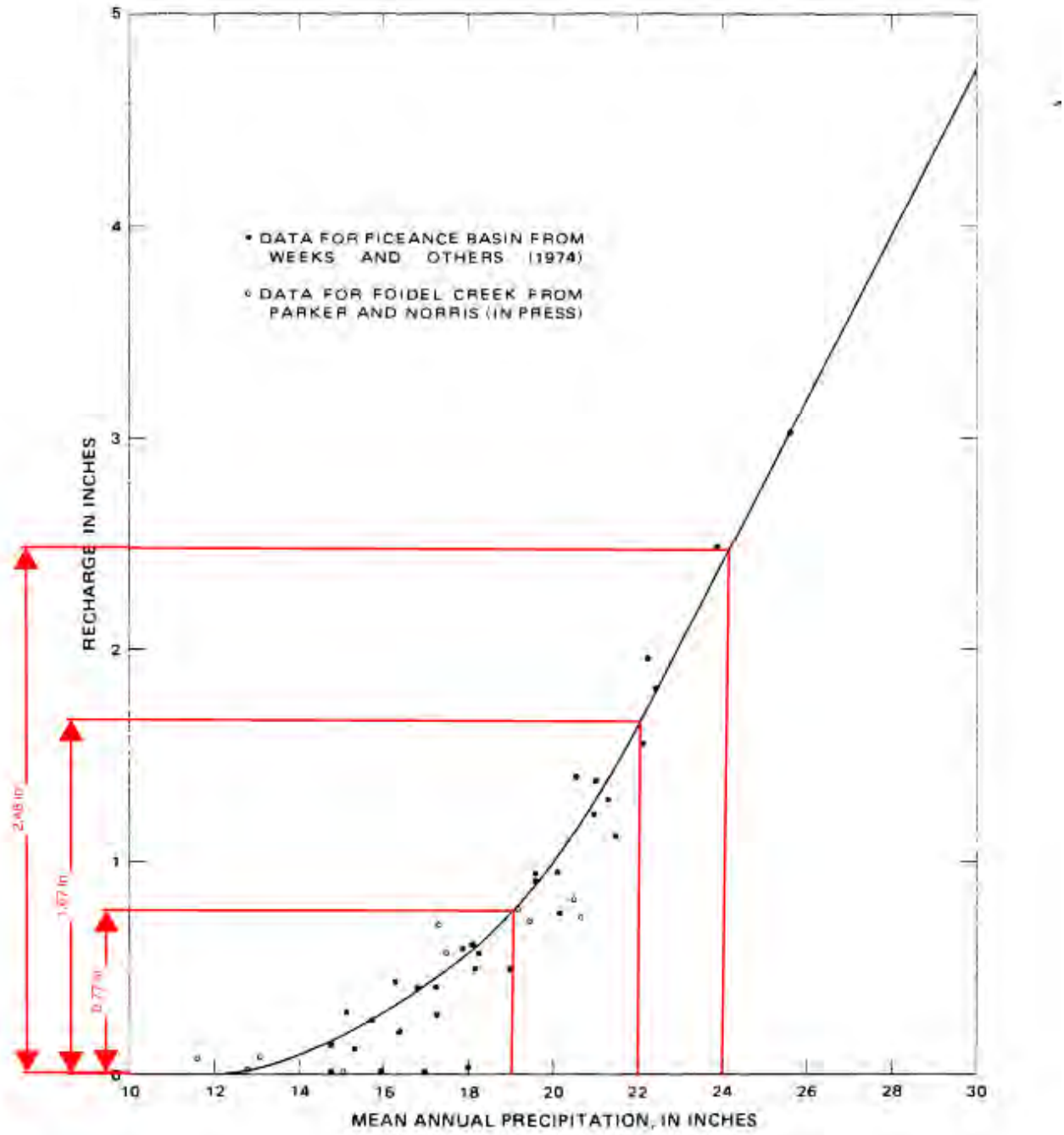

Figure 32.--Relation between mean annual precipitation and ground-water recharge.

Figure 2: Modified from USGS Water-Resources Investigations Report 90-4020 [1]

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Physical Water Supply Based on Aquifer Tests Not Demonstrated

SVR has not adequately demonstrated adequate physical supply for the proposed development. SGM reviewed the report titled "Spring Valley Ranch Physical Water Supply Report" dated 3/8/2023, prepared by LRE Water (Physical Water Supply Report), which was included as an appendix to the Water Supply and Distribution Plan report by Roaring Fork Engineering. The Physical Water Supply Report showed results from pumping tests and drew conclusions about the possible pumping rate of each well. However, the report did not provide calculations of aquifer transmissivity and specific yield, and did not draw conclusions about the aquifer's ability to sustain the identified pumping rates in the long-term. Each test was only conducted for a 24-hour period and no long-term water table data or multiple day tests were conducted. Further, the applicant did not provide any data for monitoring wells so distance-drawdown calculations could not be performed. Distance-drawdown calculations show for a given pumping rate at a well, how much drawdown would be caused in a neighboring well at a given distance. In other words, the Physical Water Supply Report does not provide enough information to show how pumping from SVR wells will impact other nearby wells. Analysis of the pumping data overestimated the potential aquifer yield because the analysis relied upon a simple specific yield calculation for each well and did not consider hydrologic conductivity of the aquifer, recovery, and well efficiency.

Per Garfield County LUDC Section 4-203.M.1.c, "the results of the pump test shall be analyzed and summarized in a report, including basic well data…, pumping rate, draw down, **recharge, and estimated long-term yield**." Consistent with Garfield County LUDC Section 4-203.M.1.c, the applicant should expand on the Physical Water Supply Report to include calculations of aquifer transmissivity and specific yield, and draw conclusions about the aquifer's recharge rate, and the ability of the aquifer to sustain the identified pumping rates in the long-term.

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4) Water Supply Adequacy and Aquifer Sustainability

This section documents SGM's comments on water supply adequacy for the SVR development, based on our review of the April 11, 2024 Spring Valley Aquifer Sustainability Study prepared by Colorado River Engineering Inc. (Aquifer Sustainability Report), and water rights documents provided in Case No. 22CW3009, a Water Court Application filed by Spring Valley Holdings, LLC to re-establish conditional groundwater, surface, and storage water rights from the Spring Valley Aquifer for the SVR development.

At the core of all issues is the potential for unsustainable aquifer use. SVR will obtain its water supply from the Spring Valley Aquifer, the same source of water used by existing users (including the Elk Springs HOA).

Following is a summary of questions and concerns SGM has raised on behalf of Elk Springs HOA about the claims made about water supply adequacy for SVR in the Aquifer Sustainability Report.

Injury Possible from Unsustainable Aquifer Use

If SVR's proposed uses on the Spring Valley Aquifer are unsustainable, this could reduce water levels and cause injury to existing water users. When aquifer storage is depleted, it is similar to dropping water level in a surface reservoir, like Lake Powell or Lake Mead. When an aquifer water table drops, existing users may need to re-drill deeper wells or rely on hauled water. If a trend of dropping aquifer water level continues in the long-term, it can eventually result in draining or mining of the aquifer.

High Amount of Proposed Use

The SVR PUD has a very high proposed use compared with existing developments in the area. The development includes a large amount of irrigated area (including two golf courses), a large amount of planned pond acreage which will use water by evaporation, and plans for a ski area (SVR has so far not provided a plan for providing legal or physical supply for the ski area).

The development proposes high diversions and depletions. Assuming all calculations and assumptions in the Aquifer Sustainability Report are correct, SVR is proposing to divert ***over one-third*** of the annual average recharge available to the entire aquifer, with consumptive use of ***one-fourth*** of that estimated recharge.

The April 2024 Aquifer Sustainability Report included a comparison of demands and depletions for SVR and other developments in Spring Valley based on decreed plans for augmentation. That table of diversions and depletions in acre-feet (AF) is shown in **Table 2** below, with added percentages for comparison.

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Table 2: Modified Table 7 from April 2024 Aquifer Sustainability Report - Total Diversions and Depletions for Spring Valley Developments Based on Decreed Plans for Augmentation

Development	Case No.	Annual Diversion		Annual Depletion	
		(AF)	(%)	(AF)	(%)
Spring Valley Ranch	98CW256	1,457.0	76%	974.0	77%
Los Amigos (Elk Springs, Pinyon Mesa, Elk Mesa)	98CW312	159.8	8%	117.0	9%
Colorado Mountain College	99CW99	132.3	7%	53.1	4%
Lake Springs Ranch/Berkeley	W-3571	105.2	5%	97.6	8%
Individual Lot Owners	N/A	30.0	2%	10.0	1%
Lookout Mountain Ranch	84CW100	36.0	2%	11.0	1%
Sum of All Other Developments		463.3	24%	288.7	23%
Grand Total		1,920.3	100%	1,262.7	100%

As shown in **Table 2**, SVR's planned 1,457 AF annually of diversions are *over three times the amount of diversions for all other developments combined.* SVR's planned 974 AF annually of depletions are *3.4 times the amount of depletions for all other developments combined.* **As planned, the SVR development will more than quadruple the annual diversions and depletions in the basin.**

A major component of this high demand is golf courses. Applicant's proposed demands for golf courses alone (329 AF annually per the Water Supply and Distribution Plan) are greater than the buildout demands of Elk Springs, Elk Mesa, Pinion Mesa, Colorado Mountain College, and Lookout Mountain Ranch developments combined (see **Table 2**).

SGM finds this level of demand to be excessive for the Spring Valley Aquifer, given our other concerns about long-term supply reliability documented throughout this report.

Climate Data Assumptions Are Questionable

The Aquifer Sustainability Report uses a simple water balance equation to calculate the possible recharge/depletive impacts to the aquifer. The basic concept of the water balance is that water is stored in the aquifer (recharge) when the water coming into the basin (from precipitation) exceeds water going out (flowing out through Landis Creek, springs, or evapotranspiration from water used by crops and native plants). If recharge is greater than the total demands from all the various developments, the demands are considered sustainable.

This water balance equation is as follows:

$$Recharge = Precipitation - Evapotranspiration - Landis\ Creek\ surface\ flows$$

The Aquifer Sustainability Report concludes the aquifer recharge is sufficient, and the proposed uses of the aquifer are sustainable. If any part of the water balance equation is incorrect (either from incorrect assumptions or data that is not representative), the conclusions are not valid.

SGM has significant concerns regarding the assumptions and data used by SVR in the Aquifer Sustainability Report and therefore questions the finding that the proposed uses are sustainable.

- Period of Study Not Representative

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When analyzing the impacts from different water uses over time, engineers must select a period of record to consider the climatological impacts on the water demands. This is usually a long period which includes wet, dry, and average years to insure consideration of a range of conditions. The period of record the engineer for SVR originally considered was from a 2000 report which considered the years 1951 through 1980. The engineers have since updated this to 1991 to 2020. The thirty-year period of 1991-2020 contains eight dry years (defined as the lowest 25th percentile of precipitation), eight wet years (defined as the highest 75th percentile of precipitation), and fourteen normal years. Since 2000, there has been a long-term drought in place and a general trend toward drier conditions. The period of 1991 through 1999 contains six of those eight wet years, and no dry years. **The period of 2000 through 2020 contains all eight dry years and only two wet years**. Generally, this selection of thirty years skews the climate data due to the wetter conditions in the 1990s compared to conditions of the last two decades. This study period of 1991 – 2020 does not fully capture the impacts of the last two decades of drought to the aquifer recharge. The applicant should also show how the prolonged dry period of 2000 through 2020 would impact the water balance.

- Precipitation and Temperature Assumptions Not Explained

  In order to estimate precipitation over the Spring Valley drainage, CRE used the PRISM Climate Group 30-year normal (1991-2020) dataset. This dataset comes out of Oregon State based Northwest Alliance for Computation Science and Engineering. It is also supported by the USDA Risk Management Agency. Extensive research and modeling has gone into the creation of this dataset. The dataset gives a mean annual precipitation value for every 800 square meters across the entire country.

  SGM questions how this dataset was overlaid on the Spring Valley watershed as it appears to be offset slightly. This offset would cause a slight increase in the mean precipitation.

- Landis Creek Flow Assumptions Not Backed by Data

  The Aquifer Sustainability Report uses 600 acre-feet as the mean annual outflow from the Spring Valley watershed. This number comes from the 2000 Gamba Report, which states “Observations made by Wright Water Engineers, indicate that the surface flow down Red Canyon will vary from 400 to 600 acre feet per year.” SGM is not aware of any current or historical stream gages on Landis Creek. Based on our conversations with CRE, this is based on a few observations made by individuals from Wright Water in the 1990s. It is our understanding SVR has no actual data to support this number. The Aquifer Sustainability Report points to the 2000 Gamba report which states Wright Water Engineers estimated this number in the 1990s by unknown methods. The 2000 Gamba report gives no information about how Wright Water Engineers estimated this number (whether it was measured or “guesstimated” by looking at the stream), what flow was measured (if any measurements were taken), how many observations were made, and when the observations were made (what time of year and did the observations include wet, normal, and dry years). Without actual data, this number is unreliable. As the runoff value is critical to the recharge calculation, a value backed by data is critical to any conclusion about aquifer recharge.

- Aquifer Balance Neglects Discharge through Springs, Seeps, and Leakage to Roaring Fork River

  The water balance did not consider discharge from the aquifer through springs, seeps and groundwater flow to the Roaring Fork River, which may further reduce the storage assumptions and change the conclusions reached in the Aquifer Sustainability Report. Gamba’s conclusions noted this in their report saying that “a substantial portion of the water that enters the system does not

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again surface in the system, but, leaks out through fracture systems associated with the half graben fault on the south side of the Spring Valley aquifer and probably enters the Roaring Fork River valley gravel aquifer." Applicant should consider in the water balance these other means for water to leave the system.

Findings Are Not Consistent with Nearby More Comprehensive Studies

The 2020 Missouri Heights Report is a detailed and peer-reviewed study of groundwater conditions based on recent data of local precipitation and groundwater level performed by Resource Engineering for the Basalt Water Conservancy District and the Colorado Water Conservation Board. The Missouri Heights aquifer and watershed is located several miles south of the Spring Valley Aquifer, with a similar aspect, similar precipitation trends, and similar elevation. Given the proximity and similarities between the two basins, SGM finds that the 2020 Missouri Heights Report is a useful benchmark for comparison.

One finding in that report is the groundwater in the area is highly dependent on imported water, especially during dry years. The report concludes "the ditch import water is of significant importance. Without it, the recharge rate would be negative in most years as the evapotranspiration would exceed the precipitation (less runoff)." In contrast, the Spring Valley watershed has no imported ditch water to support the aquifer in dry years.

Given the proximity and similarities between the two basins, SGM questions the findings that the Spring Valley Aquifer has a positive recharge balance in all conditions, given the Missouri Heights Aquifer shows negative recharge without import water over a ten-year period, based on a much more thorough and data-backed study.

Lack of Information About Landis Creek Senior Water Rights

The Aquifer Sustainability Report states some of SVR's demands (for irrigation and pond evaporation) will be "satisfied by senior surface water rights" but does not give information regarding these water rights. Without information about these water rights, it is difficult to understand how often these water demands would be satisfied by surface water rights and how often pumping from the aquifer would be needed to cover these demands.

The Aquifer Sustainability Report does not provide an analysis of the availability of these rights in dry years. Nor does the report provide information about the historical use of these water rights on the property compared to the future irrigated lands. An availability analysis is provided; however, no timeframe is given for this analysis.

The Legal Water Supply Letter provides some additional information about these senior water rights, including the name of these rights. It specifies these include storage rights in the Hopkins Reservoir, irrigation diversions from Landis Creek (the Kendall and Stricklett Ditch, Landis Ditch Nos. 1 and 2, O.K. Ditch, Forker and Gibson Ditch, and Frank Chapman Ditch and springs), and three spring water rights (Hopkins Spring No. 1, Hopkins Spring No. 2, B-R Hopkins Spring). However, neither the Legal Water Supply Letter nor the Aquifer Sustainability Report provides an analysis of the availability of these rights in dry years. Nor does SVR provide information about the historical use of these water rights on the property compared to the future irrigated lands. An availability analysis is provided; however, no

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timeframe is given for this analysis. **Consistent with Garfield County Land Use and Development Code (LUDC) Section 4-203.M.1.d, the applicant should document the "historic use and estimated yield of claimed water rights."**

The Aquifer Sustainability Report shows over 20% of the non-potable irrigation diversion coming from wells in an average year. Without understanding the timeframe of the diversion records used for this analysis, it is difficult to understand if there would be sufficient water for irrigation in dry years or if SVR would need to rely more heavily on well pumping in dry years. Heavy reliance on the aquifer in dry years could lead to aquifer mining (withdrawing groundwater faster than it can recharge) and impact other water users.

Impacts of a Dry Period on the Aquifer

- Recharge During Dry Years

  SVR does not consider dry-year impact in its Aquifer Sustainability Report. In water supply analyses, it is typical to consider impacts of wet, average, *and dry* years. The Aquifer Sustainability Report *only* considers the impact to the aquifer in an average year over the study period of 1990-2020. SGM has questioned what the impact to the reservoir would be in consecutive dry years, such as conditions from 2012 and 2013. The absence of a dry-year impact analysis calls into question whether the aquifer will be sustainable during back-to-back dry years.

  Peer reviewed studies show the trend in the Colorado River Basin points toward "significant risk of decadal and multidecadal drought in the coming century" (2017 Udall Report[2]). With a future expected to have prolonged drought conditions at times, it is reasonable and appropriate to consider impacts to the aquifer in wet, average, *and* dry conditions and especially to understand if anticipated future dry conditions will negatively affect the aquifer.

- Increased Irrigation Demand in Dry Years

  Due to lack of information about the Landis Creek surface rights, there is no indication if the well pumping may increase in a dry year. As there would likely be lower diversions from surface water, the SVR may need to pump more water from the aquifer for irrigation in dry years. This could put further demand on the aquifer in a time of decreased recharge. This could lead to aquifer mining. The applicant should include dry year demands based on surface water availability analysis of their senior water rights and should include these demands in their aquifer sustainability analysis.

- Potential for Groundwater Mining

  Aquifer mining refers to the practice of withdrawing groundwater faster than it can recharge. Aquifer mining is an unsustainable practice. SVR appears to be relying on aquifer storage as a part of the solution. The Aquifer Sustainability Report relies on an estimated existing storage of 68,000 to 105,000 acre-feet within the aquifer as water that can be used in years when recharge does not meet Spring Valley Ranch's diversions. This storage volume assumed unconfined conditions with a specific yield (storage coefficient, S) ranging from 3% to 25%. However, based on review of the 2000 Gamba Report and wells logs, parts of the aquifer exhibit confined to semi-confined conditions. The 2000 Gamba Report describes "the Spring Valley Aquifer is in fact a composite of a series of

[2] "The twenty-first century Colorado River hot drought and implications for the future", dated March 24, 2017, written by Bradly Udall and Jonathan Overpeck, published in Water Resources Research, Volume 53, Issue 3.

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confined aquifers in the sediments overlaying the bedrock, and the upper portion of the bedrock, underlying these sediments, which is itself, a confined aquifer capable of, and demonstrated to produce artesian wells."

If Applicant were to consider the confined to semi-confined aquifer conditions, this would decrease the specific capacity of the aquifer by 1 to 3 orders of magnitude and would therefore reduce the assumed aquifer storage significantly. Drawdown in a confined aquifer also tends to show a much larger cone of depression, impacting wells further away than in an unconfined aquifer. The Aquifer Sustainability Report should address confined vs unconfined conditions reported throughout the SVR and reduced aquifer storage may reduce the reliability of the aquifer during prolonged dry period. Over time, reliance on water stored in the aquifer can cause long-term drop in the aquifer water level and harm others with wells in the area.

- Measures Taken During Dry Years

  SGM also questions what measures, if any, SVR would take during a dry year to attempt to decrease negative impacts. So far, no measures have been suggested. Measures could include:

  – decreased irrigation during dry years,
  – limitations to irrigated areas,
  – modifications to operations during dry years,
  – thresholds for operations (like pumping limitations) based on real-time data of aquifer levels.

  The plan does not currently include such limitations or measures.

- Groundwater Monitoring Plan with Triggers and Actions

  SGM has been advocating for SVR to commit to a groundwater monitoring plan with required actions based on triggers. The April 2024 Aquifer Sustainability Report does contemplate a groundwater monitoring plan but does not commit to such a plan. To protect the aquifer from a mining scenario, SVR should commit to a comprehensive groundwater monitoring plan that includes specific actions triggered by pre-established groundwater levels or drawdown thresholds. Given SVR's confidence in the aquifer's recharge capacity to support the development, SGM believes committing to these measures should be a feasible and straightforward step.

  SVR has initiated discussions toward a joint groundwater monitoring plan, with other parties who rely on the Spring Valley Aquifer, including Elk Springs HOA. However, based on initial discussions it is clear the parties disagree about the approach, and the plan is not complete.

  SGM recommends that an executed agreement with Elk Springs HOA (and likely other aquifer users) for a comprehensive groundwater monitoring plan (including trigger-based actions) be a condition of approval of this PUD application.

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5) Water Demand Calculations

This section provides SGM's review of calculations of demands and density for the SVR PUD.

Review of Land Use and Water Use in the Narrative Report

The gross density for the overall development is listed at one density unit (DU) per 10.2 acres, but it should be calculated without the single 200-acre Pasture District lot, as that includes an existing ranch house and is not characteristic of the remainder of the development. Inclusion of the 200-acre lot skews the calculation. The remainder of the development is of a higher density (0.2 to 5 units per acre). The applicant should provide this updated gross density calculation, as it may not conform with the Future Land Use Map designation of Residential Low (RL) at one (1) DU per 10 acres. If that is the case, the applicant should revise the PUD for a lower number of overall dwelling units. A lower number of dwelling units would alter the overall water demand calculations.

Review of land use, water use, and proposed demand calculations in the PUD Guide

The PUD Guide provides a broad brush look at the Planning Areas, PUD Zone Districts, and Land Uses.

Table 6.2 Land Use Schedule includes an overview of how each Land Use Category fits within each Zone District.

- In Table 6.2, agricultural uses and nursery/greenhouse and gardens, non-commercial are allowed in all Zone Districts except for Open Space Limited. The documentation doesn't appear to account for or calculate agricultural uses and greenhouse uses. Given the large lot size of the single lot in the Pasture District (200 acres) and large lots in Mountain District (5+ acres) along with intended uses of agricultural use, how will outdoor water irrigation be managed for the large acreages? Will these outdoor water uses be covered by surface water rights? If so, how will the surface water rights be managed and distributed on a property-wide and individual property owner level basis? Will groundwater be used for these outdoor uses? **Water use for agricultural purposes and greenhouses needs to be quantified**.

- Under Retail/Wholesale, one of the use types is Brewery, Winery, Cidery, Distillery. This Use Type is a high water use type and it should be assumed that water produced from groundwater and used by breweries, wineries, cideries, and distilleries will be exported outside of the aquifer area. Exporting this water means it will not return to the aquifer and could be exported outside of the state. Other commercial water uses can fit into the assumption that a certain percentage of the water used will be returned as wastewater, but this Use Type does not fit into that assumption. **The Use Type of Brewery, Winery, Cidery, Distillery should not be allowed in this PUD as this would allow for water produced from groundwater to be exported outside of the aquifer area.**

- Snowmaking is listed as a Use Type. Snowmaking is a water intensive activity that is not quantified in any of the PUD demand calculations. Snowmaking would be operated exclusively during winter months when surface irrigation rights would not be running. Therefore, snowmaking would either rely on pumped groundwater or surface rights stored in a reservoir.

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The applicant has not demonstrated whether they will have enough raw water stored in the reservoir at the beginning of the winter season to support snowmaking water demands. Additionally, snowmaking is not covered under the proposed water rights applications or any decreed water right appropriation. If the applicant purchases augmentation water, such water would enter the stream system downstream but would not replenish the aquifer. As a rule of thumb, snowmaking water demands are approximately 200,000 gallons (0.61 acre-feet) per acre of ski run area, for a 15-inch layer of snow, which is a typical industry standard snow depth needed to open a green ski run. Blue or black rated ski runs would require a 24-inch depth of snow or more, depending on the terrain. The 200,000 gallon per acre value is based on a snow-water ratio of 2.5, and 20% loss during snowmaking. Additional applications would be needed periodically to replace snow lost to snowmelt, especially on south-facing slopes (and it appears much of the possible locations for a ski area would be south-facing slopes). The applicant should provide information about the acreage of ski run proposed for snowmaking so the County and reviewers can understand the magnitude of the potential water demand associated. What is proposed acreage of trails for snowmaking? If this information cannot be provided, snowmaking operations should be removed from the PUD application. Snowmaking is potentially a very large additional water demand.

Furthermore, snowmaking has not been listed as a use for the water rights requested in Case No. 22CW3009. The Legal Water Supply Letter even states that SVR does not currently have a legal supply for snowmaking, "the existing decreed legal and physical water supply is adequate to meet the water requirements for the amended PUD plan, *except for snowmaking*." For all the above reasons, **SGM recommends removing snowmaking as a Use Type for this PUD Application. SGM recommends the applicant would need to return for a PUD amendment to allow for snowmaking once they can show demand and depletion calculations and can demonstrate legal and physical water supply for snowmaking**.

- Car Wash is listed as a Use Type. Car washes have very high water use, as compared to other commercial land uses. SGM analyzed water use for a local car wash and found the average monthly use is 223,000 gal/month and up to 465,000 gal/month in peak summer months. This water use equates to approximately 8 to 11 acre-feet annually, for one car wash alone. If 1 EQR equals 350 gallons per day per EQR according to the Spring Valley Sanitation District's EQR schedule, then one car wash could equal 28 EQR, which is one third of the EQRs for commercial development. **The car wash use type either needs to be removed from Table 6.2 Land Use Schedule or it needs to be specifically quantified and EQRs set aside for a car wash within the PUD.**

Water Demand Calculations in the Water Supply and Distribution Plan

Commercial Demands

The number of EQRs listed for commercial development is 80, with 35 in the upper portion and 45 in the lower portion of the PUD. Is this number of EQRs enough to support all mixed use, community buildings, restaurants, fitness centers, overnight accommodations, etc. proposed in the PUD? The applicant should demonstrate that 80 EQRs is enough to support all commercial uses listed and needs to list the breakdown of EQRs for commercial development by Planning Area and by Upper/Lower

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systems. Water demands for the Golf Course Family Barn, clubhouse/lodge, restaurants, dining facilities, fitness center/spa, overnight accommodations, mixed-use area, and other similar Land Uses proposed in the PUD Guide have much higher water use than other commercial land use types such as retail.

In addition, the consumptive use or depletions of the commercial EQRs needs to be taken into account. Depending on the eventual mix of different types of commercial use, the same demand could have a drastically different amount of depletions.

Many of the commercial uses anticipated could have high water demands and high consumptive use. SVR has not calculated the demands and consumptive use for all planned use types. **In addition to the limit on commercial EQRs, the SVR PUD should be held to a budget of *depletions* for the commercial EQRs to be developed within the PUD, to ensure that no use types cause SVR to exceed its planned depletions for commercial uses. Applicant should also propose ways to communicate the depletion budget for commercial EQRs, how they will comply with that budget, and how they will use water saving technologies to meet that budget.**

Potable Irrigation Demands

Table 1 Potable Water Demand Summary lists Maximum Irrigation (sq.ft) by Dwelling Unit Type, and also lists a number of Dwelling Units. Multiplying these produces a total max residential irrigation area of 1,451,500 square feet or 33.32 acres. A total irrigated area is not given for commercial sites, but a total water demand for commercial site is listed as 33,925 gpd. SGM is unsure how this number was calculated and would like clarification. The Aquifer Sustainability Study lists 90 acres of bluegrass to be irrigated with potable water. It is not clear what the total acreage of potable water irrigated bluegrass is from the information given in the Water Supply and Distribution Plan. The applicant needs to provide expanded and clear calculations for all potable water demands.

Table 1 does not include the number of dwelling units and corresponding irrigated areas associated with the Zone District Pasture District. What is the maximum irrigation (sq.ft), Daily Demand per Unit Type (gpd), and number of Dwelling Units for Pasture District residences? Since Pasture District residence will have 200+ acre lots, the applicant needs to provide additional information on total water demand for these properties.

For the maximum irrigation (sq.ft) listed in Table 1, how will this irrigated area assumption be enforced? Will there be covenants or other restrictions to enforce a maximum irrigation area per residence? EQRs don't include agriculture or greenhouse water use. The applicant needs to account for those separately and show how they fit into the water use assumptions in Table 1. Irrigation is a high consumptive use demand, and if irrigation expands beyond what is contemplated this could have serious consequences. **The SVR PUD should be held to strict limits on allowable irrigated area, both total and for individual residential lots.**

In addition, the PUD Guide describes a use for greenhouses, but the Water Supply and Distribution Plan does not provide specifically calculated demands. Greenhouses can extend the irrigation season beyond the physical and legal availability of surface water rights. As such, these demands would need

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to be met by groundwater diversions. SVR should calculate demands for greenhouses and explain how they will be met.

Raw Water Demands for Golf Courses

Section 1.7.1 Raw Water Demands includes information regarding raw water for irrigation of the golf course and snowmaking operations. Please refer to comments above regarding snowmaking. The applicant doesn't include calculations for the golf course water demand. These calculations should be provided. The assumption that water will only be used during the months of April to October is inadequate, as it does not cover scenarios of dry and/or windy shoulder season or winter months when the turf will still need to be watered. The report states the golf course irrigation demand data is based on local golf course data from the last 5-6 years. This information should be provided. The report lists a maximum daily irrigation demand of 1,000,000 gallons per day. The applicant needs to provide calculations and documentation showing the demand of 329 acre-feet per year includes such high demands, and needs to show that they have adequate legal and physical supply to support this high level of water demand.

The Aquifer Sustainability Report states that Landis Creek surface water rights "have historically been used to irrigate the property," and that "a portion [of the non-potable diversion] will be satisfied by senior surface water rights." It appears the intent is to supply the bulk of non-potable demands from surface supplies, and it is clear that golf courses are a major component of the non-potable demands. However, Applicant has not provided sufficient information to justify their non-potable golf course demands. Applicant needs to justify these demands further, and should clarify to what extent these demands can be satisfied by surface water supplies versus what will need to come from groundwater supplies.

Golf courses have high unit demands, and the proposed irrigated acreage for golf courses is high. Together, the golf course demands are large compared with demands of other developments in Spring Valley. Applicant estimates demands of 329 acre-feet per year just for golf courses (per the Water Supply and Distribution Plan). Applicant's proposed demands for golf courses alone are greater than the buildout demands of Elk Springs, Elk Mesa, Pinion Mesa, Colorado Mountain College, and Lookout Mountain Ranch developments combined (see **Table 2**).

Applicant must better justify these high demands. **SGM recommends the applicant reduce the proposed irrigated acreage for golf courses to what applicant can demonstrate can be supplied by surface water supplies. SGM also recommends Applicant commit to only irrigating its golf courses with surface water supplies (not groundwater). SGM further recommends these two limitations be conditions of approval of this PUD.** This would prevent the high golf course demands from requiring groundwater pumping when surface water supplies are unavailable.

Water Demand Calculations in the Aquifer Sustainability Report

Table 3: Potable Demands does not include enough information to evaluate breakdown of demand calculations. This table needs to be expanded to include a split between residential and commercial uses, similar to how the demands are listed in the Water Supply and Distribution Plan document. The demand calculations need to be split between upper and lower areas of the PUD, as well as split into

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Planning Areas. Columns need to be added to show the conversion between gallons per day and acre-feet.

In the Water Supply and Distribution Plan document, the EQR is listed as 577 residential and 80 commercial, for a total of 657 EQR. Table 3 lists 695 EQR, which doesn't match. Applicant should clarify the total EQR for the entire PUD, as well as the breakdown number of EQR for each Planning Area.

The Domestic Irrigation acreage is listed as 90 acres, which doesn't match the irrigated acres listed in the Water Supply and Distribution Plan.

Water Demand from Surface Water Rights and from Groundwater

SVR has not adequately explained what portion of its total demands and depletions will be met by senior surface water rights and what portion will be met by groundwater. This should be clarified.

6) Conclusion

SGM's analysis of the SVR development's water supply availability reveals significant concerns regarding aquifer sustainability, recharge rates, groundwater storage volume, and demand calculations. The Aquifer Sustainability Report's assumptions about aquifer storage, recharge, and water balance lack sufficient justification and fail to account for critical factors such as prolonged dry periods and inter-aquifer dynamics. There is a serious risk of aquifer mining due to overestimated recharge rates and proposed high water use. To ensure sustainable water management, SVR should provide more comprehensive analyses, validate its assumptions, and limit its high-water-use activities. Strict monitoring and mitigation measures must be put in place to protect the aquifer and ensure a reliable water supply for the proposed development and for all users of the Spring Valley Aquifer.

Attachments

Attachment A: Spring Valley Overview Map

Attachment B: Colorado Geological Survey Reports for Quad Maps in Attachment A (Spring Valley Overview Map)

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Exhibit
6-45

SPRING VALLEY RANCH
GARFIELD COUNTY, COLORADO

THE SPRING VALLEY HYDROLOGIC SYSTEM

March 10, 2000

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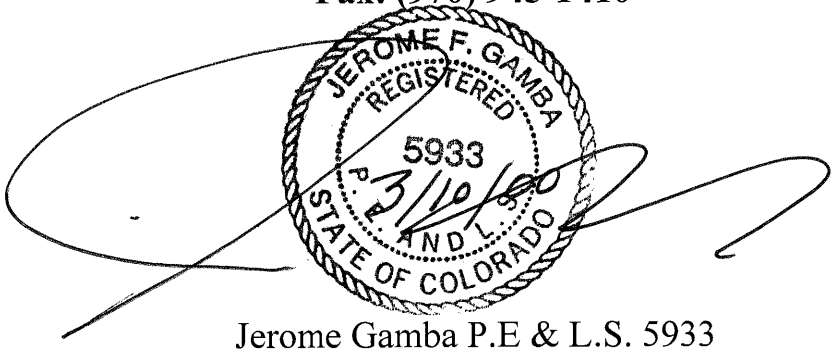

Jerome Gamba P.E & L.S. 5933

GENERAL

The purpose of this report is to examine geologic and hydrologic data related to the geographic area known as Spring Valley and, there from, prepare estimates of the potential specific yield of the water bearing horizons (aquifers) and estimates of amount of annual recharge to those water bearing horizons.

A segment of the natural phenomenon that will be discussed in this dissertation is often referred to as the "Spring Valley Aquifer". This is the approximate 1,500-acre area basin, flanked on the east by County Road 114 and on the north by County Road 115. It has been penetrated by a number of wells that serve Colorado Mountain College, the sod farm and most of the single-family homes along 114 road and 115 road. The small stream that drains the surface of the basin, discharges in Red Canyon.

This basin, as noted above, represents only a segment of a dynamic hydrologic system comprised of highly favorable geologic conditions situated in a meteorological environment conducive to precipitation levels substantially greater than the adjacent lower valley areas.

GEOLOGIC CONDITIONS

The recharge area of the Spring Valley Hydrologic System is comprised of approximately 15.4 square miles. This area, illustrated on the attached map, varies in elevation from 6,870 to 9,400 feet. The surficial geology of this recharge area may be divided, for purposes of hydrologic consideration, into three petrographic types:

- Siltstones, sandstones, clay stones and conglomerates of the Pennsylvanian/ Permian Maroon Formation;
- Basalt flows, basalt talus, colluvium comprised predominantly of basaltic material, all of Tertiary and early Quaternary age; and
- Quaternary lacustrine materials comprised predominantly of fine-grained products of the chemical and mechanical weathering of the older rock materials that were deposited in a lake. Samples from recent well drilling have been examined which indicate deposits of volcanic ash in the lower portions of the lake basin.

Stratigraphically, the Maroon Formation under lays the basalt and alluvial materials. It overlays the Eagle Valley Evaporate Formation, sometimes referred to as the Paradox Formation. The Maroon formation, along with underlying sediments, was elevated and exposed by erosion in the course of the orogeny that created the White River uplift to the north.

The Eagle Valley Evaporite formation contains beds of soluble salts such as Gypsum and Halite. The introduction of ground water into these salt beds resulted in the slow, but steady solution and removal of several thousand feet of this formation over a large section of a portion of the Roaring Fork River drainage area. The area of the Spring Valley Hydrologic System straddles the northern edge of this affected area. As the salts were removed, the overlaying rocks settled. This activity was, likely, very similar to the current mining of soluble minerals by hydrothermal water as demonstrated by the Glenwood Hot Springs and the other hot springs along the Colorado River. The solution and removal of salts was not uniform over the effected area and the collapse of the

overlaying rocks resulted in deformation, shear fracturing and faulting of the Maroon formation as well as the overlaying rock of volcanic origin. The intensity of this fracturing may be better understood by observing the Maroon Formation outcrops exposed along Highway 82 from Carbondale to Red Canyon. The sandstone beds which are interbedded with siltstones and shales are well-cemented, relatively hard rock. When they were originally deposited and lithified, they formed straight, flat, continuous unbroken layers of stone. Now they have the character of blocks of stone laid up in a dry stack wall constructed on an uneven surface. While a minor amount of this fracturing may be attributed to the White River Uplift activity, the vast majority is the result of irregular collapse due to the solution mining of the underlying Eagle Valley Evaporites. The volcanic materials were similarly fractured by this removal of the evaporite basement rock. The fracturing of relatively continuous lava flows may be observed in the cliffs along the lower reaches of Landis Creek and on the slopes northerly of county road 115.

The high infiltration rate and water bearing capacity of the volcanic rock material is the product of the above noted, intense fracturing of the very brittle basalt coupled with the high porosity of the subsurface beds and lenses of volcanic ash, cinders and breccias. The strongest fault/fracture systems are indicated by geomorphologic evidence and are illustrated on the map. It appears that most of the fracturing of the volcanic materials is the result of bending and slumping of the rock layers which caused very little displacement from one side of the fault/fracture zone to the other. Some of the volcanic material outcrops and sub-outcrops are virtually rubblized while other outcrop sections appear to be rafted basalt blocks with horizontal dimensions of several hundred feet. Much of the land surface which slopes at 20% or greater has a very thin to virtually non-existent soil cover. Vegetation, in these areas, is sparse and small indicating that it survives with a minimal moisture supply, even though the area receives 25 to 30 inches of precipitation per year. Excavation in the course of constructing pioneer roads reveals areas of the subsoil rock, to be comprised primarily of medium sized to massive boulders wherein the “porosity” may be visualized as that which would result from the stacking of poorly sorted particles that range in size from basketballs to Volkswagens. The percolation rate in these areas is obviously, very rapid.

In some areas of the surface, where the land slope is less than 15 percent, soil has accumulated to depths of as much as 20 feet over the rock. Percolation tests were conducted on soils of this type at 11 locations in the upland aquifer recharge area. The average of the percolation rates measured was 25.5 minutes per inch (2.35 inches per hour) with the range being from 3 to 64 minutes per inch. Of the 11 tests, 8 measured at 34 minutes per inch or less.

The volcanic activity events of 3 to 4 +/- million years ago deposited 100 to 200 feet or more of interlayered basalt, cinders, ash, and breccias on a substantially more horizontal surface than is present in the area today. The intervening 3 million +/- years of erosion on that surface, which was slowly tilting southerly, has removed the softer, unconsolidated cinders and ash from the surface, exposing, hard, weather resistant basalt. The remaining, highly porous ash and cinder lenses below the hard basalt surface provide pockets or constricted basins of high porosity where ground water is detained. Surface

water is channeled into these detention basins or "hanging aquifers" via the fractured and rubblized surface basalt. Subsurface fractures interconnect the detention basins and act as restricted conduits that facilitate the slow, but continuous, transmission of water from those at higher elevations to the ones below.

The segment of the system, which is referred to, as the Spring Valley Aquifer is in fact a composite of a series of confined aquifers in the sediments overlaying the bedrock, and the upper portion of the bedrock, underlying these sediments, which is itself, a confined aquifer capable of, and demonstrated to produce artesian wells.

The confined aquifers within the lakebed sediments are comprised of sand and sandy gravel horizons confined between layers of clay or sandy, gravely clay. From previous drilling and data from Spring Valley Ranch well #6 drilled in February and March 2000, it appears that the lower 70 to 110 feet of the sediment section in the northwestern end of the basin is very fine-grained sand. Samples taken from this well drilling were tested and it was determined that the specific porosity of this material is approximately 30%. Microscopic examination of this material reveals that it is highly angular, with the appearance of shattered glass. The particles do not exhibit the characteristics of sand grains that have been subjected to significant transportation and attrition by either water or wind action. It is suspected that this sand is vitric volcanic ash, which was deposited in and adjacent, upslope of the lake basin during the creation of the basin by subsidence, as discussed below.

The bedrock form of the lake basin is a "half graben" with the fault on the southerly side along County Road 119. The bedrock is comprised of Maroon Formation sediments, capped with 100 feet or more of volcanic material similar to that which may be observed on the north side of 115 road and in the cap rock on the south side of the valley. This bedrock block tilts, or more accurately "slumps" southerly From the divide between the Colorado and Roaring Fork river drainages, down the south facing slopes of Spring Valley and under the basin, to its termination at a fault that extends along the southern side of the valley.

An additional feature has been observed in the aquifer basin. In many of the deep drill holes, the volcanic rock section below is separated from the overlaying lake sediments by a layer of blue gray clay as much as 40 feet thick. This is probably montmorillonite clay of the bentonite variety that is formed by the alteration of volcanic ash and tuff. Where present, this clay layer acts as a seal between the lake sediments and the underlying volcanic rock material.

HYDROLOGIC CONDITIONS

The conditions and events noted above created the geologic setting for the Spring Valley Hydrologic System. The other component of the system is the precipitation provided by the meteorological environment.

Average annual precipitation in the Colorado Mountains increases substantially with elevation. This is illustrated on the Colorado Average Precipitation Map, 1951 to1980, prepared by Colorado State University in conjunction with Climatology Report 84-5,

published by the U.S. Geological Survey. This map indicates that the uppermost part of the recharge area of this hydrologic system receives an average of 30 inches of precipitation per year while the lowest portion of the recharge area receives 16 inches to 20 inches per year.

PRECIPITATION INFILTRATION

The effective introduction of this precipitation into the underground hydrologic system is largely dependent upon the character of the surface geology. Fractured basalt flows, basalt talus and colluvium comprised predominantly of granular soil and rock are highly permeable, wherein it is estimated that, at least 60% of the precipitation will enter the aquifer after evaporation, transpiration and surface run-off. This high rate of infiltration is graphically demonstrated by the drainage along County Road 115 within the Spring Valley Ranch. The Basalt hillside northerly of the road ranges in slope from 10 to 40 percent. The average annual precipitation received by this area is 20 to 25 inches per year. Drainage sub-basins above, discharge to these slopes, yet many of the natural drainage swales crossed by the road do not have culverts and do not have the appearance of areas that transport or pond water. It is reported, by longtime residents of the area, that only on occasions of extremely high snow melt or cloud burst, does flooding of the road occur.

This condition has also been observed on the pioneer roads constructed on the higher portions of the Spring Valley Ranch that are underlain by fractured basalt or thin granular soils over basalt. The inability of the thin soils to retain moisture is demonstrated by the light vegetation cover.

The topographic characteristics of the highly basaltic surfaces are further evidence of its high infiltration rate. This is an area that sustains an average precipitation of 20 to 30 inches per year on slopes of 10 to 50 percent. If the rate of infiltration of precipitation was not exceptionally high, the large volume of high velocity run-off would have eroded major drainage swales and gulches down the slopes, nearly perpendicular to the contours. The precipitation **does** occur, but the run-off **does not**. Instead, this precipitation enters the fractured and otherwise highly porous basaltic materials and is detained there in a series of cascading aquifers that are interconnected by shear fracture zones. These fracture zones function as control orifices and slowly release the gravity flow of water to springs and the aquifers below.

Conversely, fractured Maroon formation overlain with silty, loam soils supporting moderate to heavy vegetation will result in the infiltration of approximately 20% of the precipitation with the balance being lost to evapotranspiration and surface runoff. Where this surface runoff must cross the basaltic areas noted above, much of it will enter the groundwater system.

The conditions described above were applied to the map of the recharge area, prepared on the basis of published geologic mapping and personal observations. The following table was prepared which estimates the average precipitation amount in the recharge area and the potential infiltration amount entering the underground hydrologic system.

Exhibit 6-45

PERCIPITATION ZONE AND ESTIMATED INFILTRATION RATE	AREA (ACRES)	AVERAGE ANNUAL PRECIPITATION (A/F)	ESTIMATED INFILTRATION TO AQUIFER (A/F)
16' – 20" (18") 20%	592	888.0	177.6
16" – 20" (18") 60%	1,497	2,245.5	1,347.3
20" – 25" (22.5") 20%	1,050	1,968.8	393.8
20" – 25" (22.5") 60%	2,180	4,087.5	2,452.5
25" – 30" (27.5") 20%	450	1,331.3	206.3
25" – 30" (27.5") 60%	3,794.6	8,694.6	5,216.8
30" 75%	277	692.5	519.4
TOTAL	**9,840.6**	**19,908.2**	**10,313.7**
WET/DRY YEAR			**11,345.07/8,250.96**

As may be observed, the above calculations indicate that more than 50% of the system recharge occurs in the higher elevations. The possible amount of recharge to the aquifer may also be estimated by the following formula:
recharge = precipitation – evapotranspiration – surface flow down red canyon.

Observations made by Wright Water Engineers, indicate that the surface flow down Red Canyon will vary from 400 to 600 acre feet per year. As noted above, the estimated average precipitation for the total system recharge area is computed to be 19, 908.2 acre feet per year.

The following table illustrates an estimate of the probable losses to evapotranspiration in the various precipitation zones and vegetation types. The evapotranspiration rate factors used in the calculations were taken from Handbook of Applied Hydrology by Chow, McGraw-Hill.

PRECIPITATION ZONE	WATERSHED AREA (ACRES)	VEGETATION TYPE & EVAPOTRANSPIRATION FACTOR (INCHES/YEAR)	POTENTIAL LOSS TO EVAPOTRANSPIRATION
16" –20"	2,089	GRASS, BRUSH & SHRUBS 5-10 (USE 7.5)	1,305.6
20" –25"	3,230	GRASS, BRUSH & SHRUBS 5-10 (USE 7.5)	2,018.8
25" – 30"	2,122,3 2,122.3	50%GRASS, BRUSH & SHRUBS 7.5 50% ASPEN/FIR 23	1,326.4 4,067.7
30'	277	ASPEN/FIR 23	530.9
TOTAL	9,840.6		**9,249.4**

Appling the equation noted above:

recharge = precipitation – evapotranspiration – surface flow down red canyon.

Probable Recharge = 19,908.2 - 9,249.4 – 600 = 10,058.8 acre feet per year

The section underlain by basaltic materials located easterly of Landis Creek accounts for the majority of the recharge and is believed to support the greatest detention volume in the system, which, in turn recharges the Spring Valley Aquifer.

This belief is supported by the presence of consistently flowing springs which surface in the upland area and the characteristics of the seven wells which have been drilled there and pump tested . One well was drilled in the Maroon formation and six in the volcanics. All of the wells were test pumped for 24 hours immediately following drilling and 3 were selected for extended pump tests. The extended pump tests are described in the Wright Water Engineers, Inc., report "Spring Valley Upland Aquifer Pumping Tests – 2000".

Peter Cabrinha has been closely associated with the Spring Valley Ranch for 37 years and has observed the performance of springs on the property. In a recent interview with Mr. Cabrinha, the following observations were related:

- All of the springs appear to flow year around at relatively consistent rates with the exception of periods following extremely low winter and spring precipitation.
- In his 37 years of observation, there were two occasions when the upper Landis Creek springs, at 9,100 ft elevation, stopped flowing. These stoppages occurred in the late summer or early fall of the year following the low winter and spring precipitation. The springs resumed flow the following spring.
- The flows of the lower elevation springs do not appear to diminish following dry winter/spring seasons.

ESTIMATE OF SPECIFIC YIELD OF SYSTEM AQUIFIRS

In order to accommodate to the performance described above, the hydrologic system must receive a substantial portion of the precipitation, as indicated in the table above, and have a sufficient volume of specific yield to detain the infiltrated precipitation of several years.

Information is available to compute a conservative estimate of the potential specific yield of the aquifers in the system. The following assumptions and parameters will be used in computing the estimated specific yield.

1. The upland area in the 20-inch to 30+-inch precipitation zone covered by volcanic materials contains approximately 5,975 acres.
2. The thickness of the volcanic materials intercepted by the six wells, drilled in volcanics, in the upland area ranged from 112 feet to 200 feet with an average of 168 feet. The depth of water in the wells (static level to bottom) ranged from 46 feet to 310 feet with an average of 135 feet. For conservative estimating purposes, a saturated thickness of only 50 feet will be used.
3. The porous volcanic materials will perform similarly to sand, gravel and cobbles for which the specific yield will range from 34% to 20% (from Figure 5-4 Bear Jacob. 1979 Hydraulics of Groundwater. McGraw-Hill). For conservative estimating purposes, a range of 10 to 20% will be used.
4. The surface area of the Spring Valley aquifer is approximately 1,500 acres.
5. Well log information indicates that the thickness of lake sediments may average from 250 to 300 feet. in thickness, comprised of 10 to 20 feet of gravel bed, 140 to 180 feet of sandy, clayey silt with some gravel and 70 to 110 feet of very fine sand (vitric volcanic ash). For conservative estimating purposes, the following will be used for the lake sediments:

Sandy, clayey silt = 140 feet; gravel = 10 feet; very fine sand = 70 feet.

6. The specific yield of gravel beds in the lake sediments will range from 25% to 34%; the silty clay may range from 3% to 25%; the sand from 25% to 35% (from Figure 5-4 Bear Jacob. 1979 Hydraulics of Groundwater.) McGraw-Hill). For conservative estimating purposes, 25% will be used for the gravel beds and 3% will be used for the clayey sediments and 20% for the very fine sand.

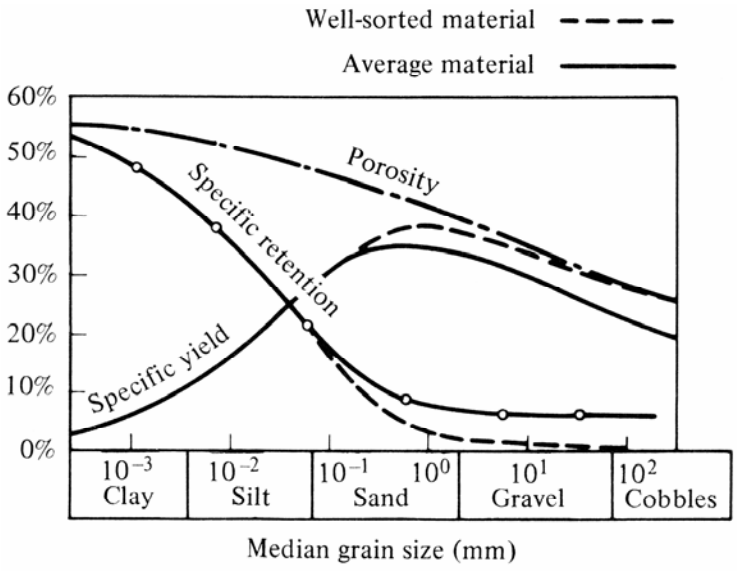

Figure 5-4 Relationship between specific yield and grain size *(from Conkling et. al., 1934, as modified by Davis and DeWiest, 1966).*

Bear Jacob. 1979. Hydraulics of groundwater. McGraw-Hill.

The following calculations of the specific yield of the aquifers in the hydrologic system are based on the assumptions and parameters stated above.

Upland volcanic areas
5,975 acres x 50 feet thick x 0.10 or 0.20 specific yield = 29, 875 to 59,750 acre feet

Spring valley aquifer gravel beds
1,500 acres x 10 feet thick x 0.25 specific yield = 3,750 acre feet

Spring valley aquifer silty clay sediments
1,500 acres x 140 feet thick x 0.03 specific yield = 6,300 acre feet

Spring valley aquifer very fine sand bed
1,500 acres x 70 feet thick x 0.20 specific yield = 21,000 acre feet

Volcanics at base of Spring Valley aquifer
1,500 acres x 50 feet thick x 0.10 or 0.20 specific yield = 7,500 to 15,000 acre feet

ESTIMATED TOTAL SPECIFIC YIELD OF AQUIFERS IN SPRING VALLEY HYDROLOGIC SYSTEM = **68,425 to 105,800 AF**

Note: the above calculations do not include the volcanic areas in the 16" to 20" precipitation zone nor any of the Maroon formation area.

ADDITIONAL AQUIFER CHARACTERISTICS

Examination of the records of the State Engineer indicates that the majority of the domestic (single family home) wells in the Spring Valley are drawing water from the upper to middle, silty, clayey lakebed sediments. Although the specific yield of these materials is estimated to be only 3%, it is believed to be a viable segment of the aquifer because it can provide adequate supplies of water to small domestic wells in the valley bottom and probably not be effected by the pumping of large volume wells which draw from the higher yield sands and volcanics in the lower section of the aquifer.

The large volume wells of CMC, Los Amigos and the sod farm are drawing water from the volcanic material horizon at the base of the Spring Valley aquifer. Intermediate test pumping of Spring Valley Ranch well #6 from the fine sand zone above the clay indicates that sustained production of at least 250 gpm is available from this material. The static head elevations of the CMC and Los Amigos wells, on the southeast end of the valley, is approximately 100 feet lower than the Spring Valley Ranch wells on the northwest end indicating a general flow of northwest to southeast. This would support the theory that the aquifer outflow generally follows the half graben fault fracture system to the roaring fork valley.

SUMMARY AND CONCLUSIONS

1. The source of recharge for the Spring Valley Aquifer is predominantly from the volcanic material in the upland aquifers.
2. This writer believes the average annual precipitation entering the system as recharge and flowing through the series of aquifers, to be approximately 10,000 acre-feet. Peer review of this information by others who have not had the benefit of on-site observations, assign substantially higher volume to loss by evapotranspiration and therefore estimate the average annual recharge volume more conservatively at 4,700 acre-feet. Considering that the potential total annual depletion of the aquifer by existing and future land development is in the vicinity of 1,300 to 1,500 acre feet, the lower figure still assures viability of the aquifer.
3. The estimated specific yield volume of the aquifers in the hydrologic system is in the range of 68,000 to 105,000 acre feet, of which approximately 38,000 to 46,000 acre feet are contained in the Spring Valley aquifer and approximately 30,000 to 60,000 acre feet are available in the upland volcanic material aquifers to recharge the Spring Valley aquifer. These large volumes of stored water provide a leveling effect to the variations in annual precipitation over a period of 6 to 10 years, or more.
4. A substantial portion of the water that enters the system does not again surface in the system, but, leaks out through fracture systems associated with the half graben

fault on the south side of the Spring Valley aquifer and probably enters the Roaring Fork River valley gravel aquifer.

5. The most promising target zones for a large production well appears to be the volcanic ash layer in the lower sediments and the volcanic material horizon below the sediments in the Spring Valley Aquifer.
6. It is highly probable that water production from the lower volcanic ash layer in the sediments and the volcanic material horizon below the sediments in the Spring Valley Aquifer will reduce the leakage to the Roaring Fork River area, but will have little or no effect on the small domestic wells in the upper sediments or the surface discharge down Red Canyon.

Respectfully,

Jerome F. Gamba, P.E. & L.S. 5933

Enclosures: Exhibit 1, Map of Spring Valley Hydrologic System
Exhibit 2, Generalized Geologic Section of Spring Valley and Upland Aquifers

Exhibit
6-45

REFERENCES

Bass, N.W., and Northrup, S. A., 1963, Geology of Glenwood Spring Quadrangle and Vicinity, Northwestern Colorado: U.S. Geological Survey Bulletin 1142-J 74p.

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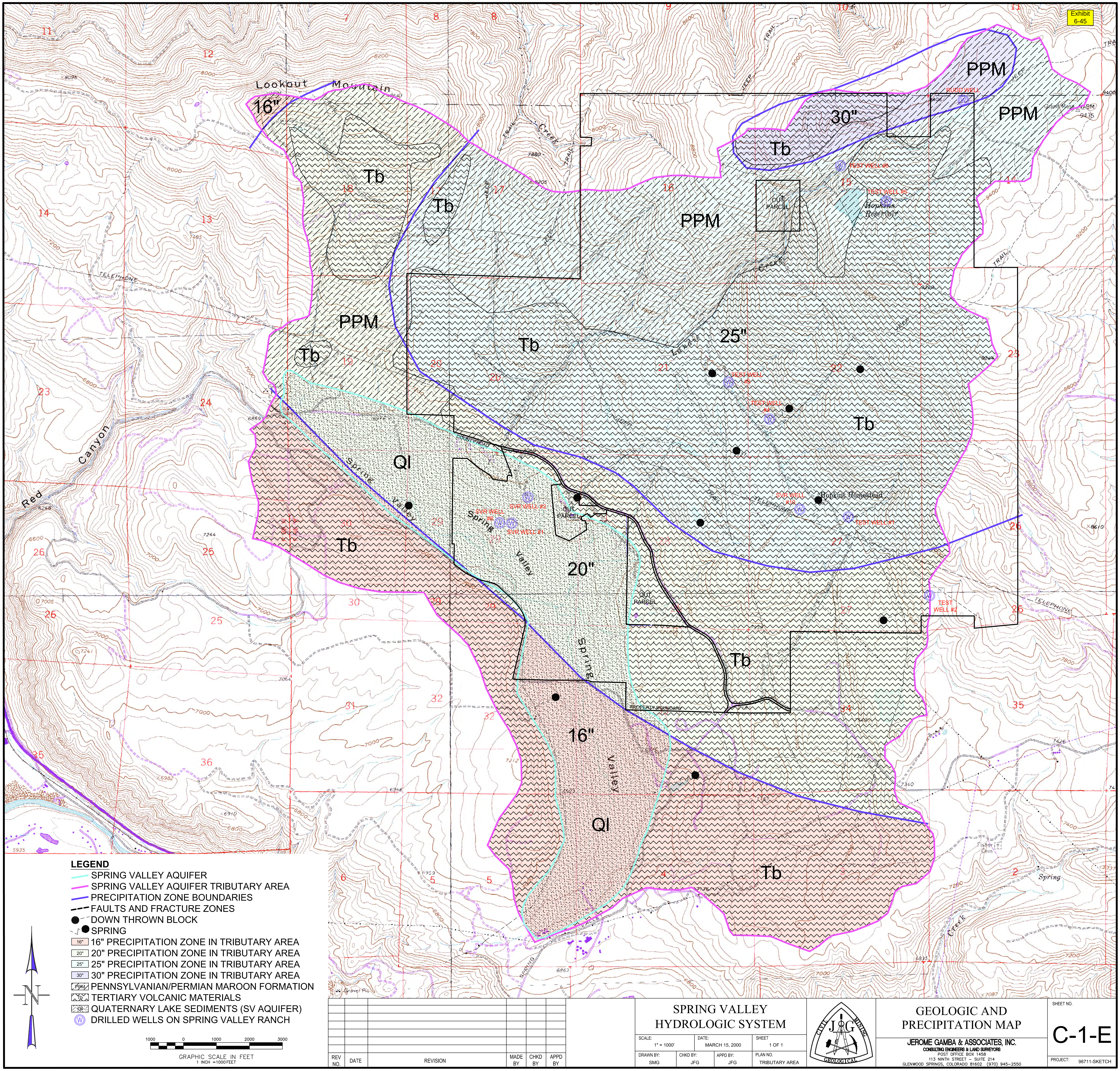
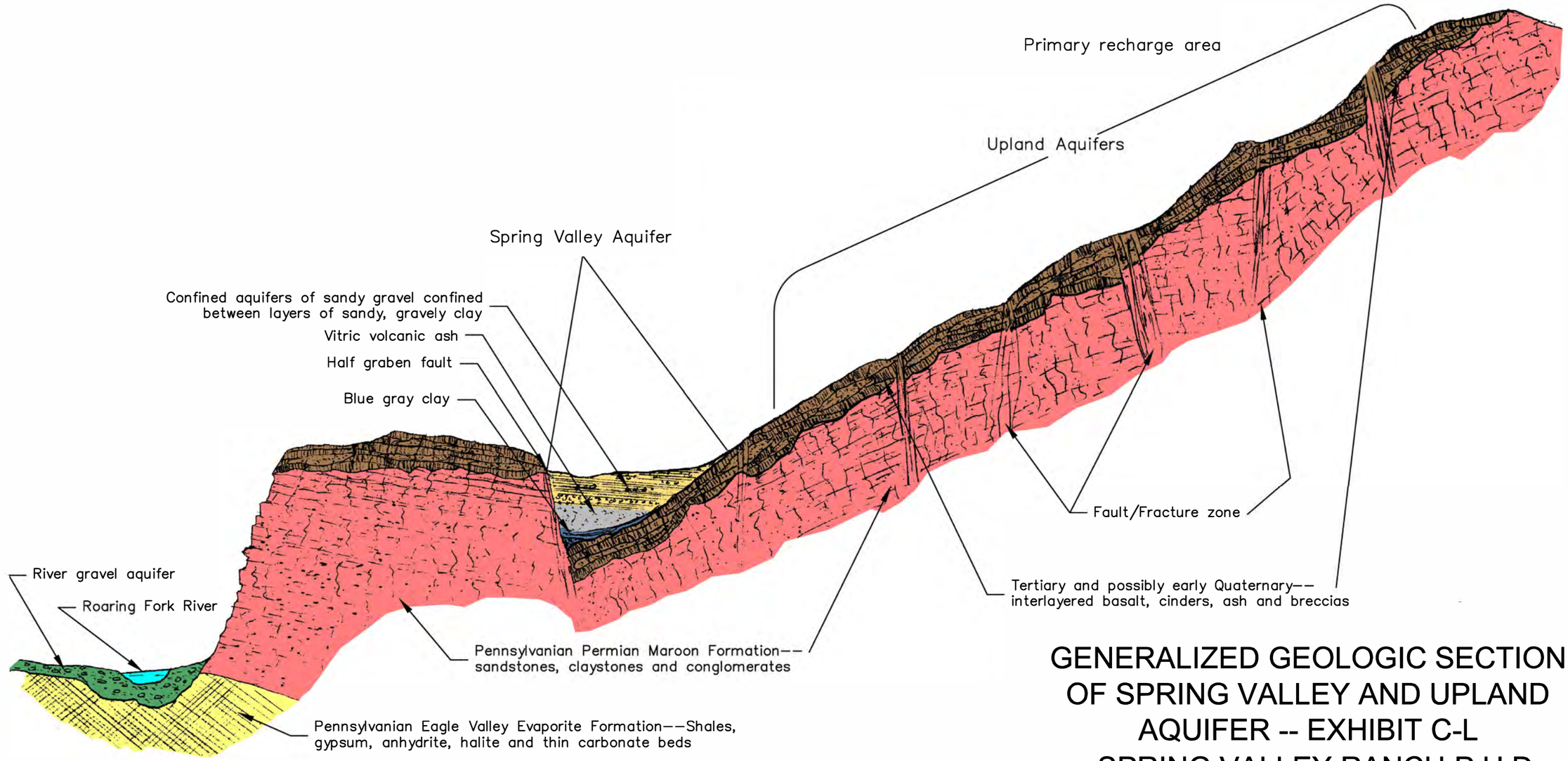


Exhibit 6-45
Lookout Mountain
16"
20"
25"
30"
PPM
Tb
Ql
Spring Valley
Red Canyon
Hopkins Homestead
OUT PARCEL
TEST WELL #2
LEGEND
SPRING VALLEY AQUIFER
SPRING VALLEY AQUIFER TRIBUTARY AREA
PRECIPITATION ZONE BOUNDARIES
FAULTS AND FRACTURE ZONES
DOWN THROWN BLOCK
SPRING
16" PRECIPITATION ZONE IN TRIBUTARY AREA
20" PRECIPITATION ZONE IN TRIBUTARY AREA
25" PRECIPITATION ZONE IN TRIBUTARY AREA
30" PRECIPITATION ZONE IN TRIBUTARY AREA
PENNSYLVANIAN/PERMIAN MAROON FORMATION
TERTIARY VOLCANIC MATERIALS
QUATERNARY LAKE SEDIMENTS (SV AQUIFER)
DRILLED WELLS ON SPRING VALLEY RANCH
1000 0 1000 2000 3000
GRAPHIC SCALE IN FEET
1 INCH =1000 FEET
REV NO.
DATE
REVISION
MADE BY
CHKD BY
APPD BY
SPRING VALLEY HYDROLOGIC SYSTEM
SCALE: 1" = 1000'
DATE: MARCH 15, 2000
SHEET 1 OF 1
DRAWN BY: SMG
CHKD BY: JFG
APPD BY: JFG
PLAN NO. TRIBUTARY AREA
GEOLOGIC AND PRECIPITATION MAP
JEROME GAMBA & ASSOCIATES, INC.
CONSULTING ENGINEERS & LAND SURVEYORS
POST OFFICE BOX 1458
113 NINTH STREET – SUITE 214
GLENWOOD SPRINGS, COLORADO 81602 (970) 945–2550
SHEET NO.
C-1-E
PROJECT: 98711-SKETCH

Exhibit 6-45



GENERALIZED GEOLOGIC SECTION OF SPRING VALLEY AND UPLAND AQUIFER -- EXHIBIT C-L
SPRING VALLEY RANCH P.U.D.

NOT TO SCALE
VERTICAL SCALE GREATLY EXAGGERATED

PLANNER:
DESIGN WORKSHOP, INC.
120 EAST MAIN STREET
ASPEN, CO 81611
(970) 925-8354

CIVIL ENGINEERING:

JEROME GAMBA & ASSOCIATES, INC.
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GLENWOOD SPRINGS, COLORADO 81602 (970) 945-2550

DATE: MARCH 15, 2000

Exhibit
6-45

HRS WATER CONSULTANTS, INC.

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Lakewood, Colorado 80215
(303) 462-1111
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CONSULTANTS IN
HYDROGEOLOGY AND
WATER RESOURCES

MARK R. PALUMBO

March 10, 2000

Mr. Cam Kicklighter
Spring Valley Development
411 East Main Street #205
Aspen, Colorado 81611

99016-01

Re: Spring Valley Ranch – Review of Jerome Gamba & Associates, Inc. Report, *The Spring Valley Hydrologic System*

Dear Cam,

Following the request of Spring Valley Ranch Development (SVR) HRS Water Consultants, Inc. (HRS) has reviewed the above referenced report prepared by Jerome Gamba & Associates (JGA). The report includes six sections that are entitled: General, Geologic Conditions, Hydrologic Conditions, Precipitation Infiltration, Estimate of Specific Yield of System Aquifers, and Summary and Conclusions. After an initial report review HRS concentrated its efforts on the Precipitation Infiltration and Estimate of Specific Yield of System Aquifers sections of the report.

The purpose of the HRS review was to comment on the report's analyses and conclusions. Our overall impression to the report was very favorable. Based on our critical review, our comments are intended to provide additional data and analyses to evaluate the report's primary assumptions and conclusions. For example, as part of this review a literature search was performed to assemble published information and data relating to the report topics. Additional data and relevant article references are included with this letter.

GEOLOGIC CONDITIONS

The geologic discussion is very good. JGA's analysis is supported by the geologic literature. We suggest that the following references be added to the report.

Colorado Geological Survey, 1974, Roaring Fork and Crystal Valleys An-Environmental and Engineering Geology Study, Environmental Geology No. 8.

Kirkham, Robert, M., 1999, Guide to the Geology of the Glenwood Springs Area, Garfield County, Colorado, Earth Science Week Field Trip, October 16, 1999, Colorado Geological Survey p. 41.

Exhibit 6-45

Kirkham, Robert, M. and others, 1997, Geologic Map of the Glenwood Springs Quadrangle, Garfield County, Colorado, Colorado Geological Survey Map Series 31.

Kirkham, Robert, M. and others, 1996, Geologic Map of the Cattle Creek Quadrangle, Garfield County, Colorado, Colorado Geological Survey Open File Report 96-1.

The percolation test results discussed on page 2 represent useful on-site information. The average percolation rate is 2.35 inches/hour. This equals 4.7 feet/day.

Aquifer Recharge Analysis

As part of the evaluation of the hydrogeology of the Spring Valley area, HRS performed an analysis of groundwater recharge utilizing estimates of precipitation and evapotranspiration and a soil moisture budget for the Landis Creek watershed upstream of the point where the creek exits the western end of Spring Valley. This is the same watershed area as delineated by the JGA report.

Inputs to the HRS soil water budget analysis included: annual precipitation and shallow lake evaporation from statewide maps, detailed soils and vegetation information from the local soil survey; and calculated evapotranspiration rates for various vegetation types derived from evaporation data. These inputs and calculated values were used to create a monthly soil moisture budget for each soil type and precipitation band, with excess water assumed to recharge underlying aquifers either directly, or indirectly through stream losses. Following are more detailed descriptions of the various analysis components and methodology.

Precipitation

The Landis Creek watershed was divided into bands based on precipitation. Approximate average annual precipitation was determined from a large-scale state precipitation map developed by the Colorado Climate Center. On this state map 20-inch, 25-inch and 30-inch precipitation contours intersect the Landis Creek watershed along lines approximately parallel to elevation contours. These state map precipitation contours, along with a review of the topography of the area, were used to create a set of five precipitation bands which were assigned average annual precipitation values of 20 inches, 23 inches, 26 inches, 29 inches and 30 inches. Table 1 summarizes information for each of these precipitation bands. The annual precipitation amounts were then distributed monthly based upon monthly precipitation at the Aspen weather station.

Evaporation

Estimates of evaporation data were obtained from a statewide map of annual shallow lake evaporation produced by NOAA (1982). This map indicates a 45-inch evaporation contour extending up the Roaring Fork River Valley to near Basalt, and a 40-

Exhibit 6-45

inch contour located a few miles east of the high point of the Landis Creek watershed. Based on these evaporation contours, annual evaporation estimates were assigned ranging from 40.5 inches for the 30-inch precipitation band to 44 inches for the lower-elevation 20-inch precipitation band. These evaporation values are included in Table 1 for each precipitation band. Evaporation was then distributed monthly using percentage estimates used by the Colorado Division of Water Resources (1996) in the administration of evaporation losses for lakes and reservoirs above 6,500 feet in elevation.

Soils Information

For each precipitation band, soil types were identified and acreages measured from the Aspen-Gypsum Area Soil Survey maps. For each soil type, the associated vegetation type was identified and the available moisture-storage capacity within the root zone was determined. Table 2 includes a listing of the various soils, soil moisture storage and vegetation types identified within the Landis Creek watershed. *(Note: a few soil types which occupied very small areas were lumped in with similar soils, and are not listed in Table 2.)*

Potential Evapotranspiration Calculations

Evapotranspiration estimates for the vegetation types identified within the watershed were made using a method outlined in a USGS water budget study for the upper Rio Grande Basin (Hearne & Dewey, 1988). This report, in turn, relied upon an earlier water budget study (Wymore, 1974) of the Piceance Creek and Yellow Creek watersheds. The methodology utilizes shallow lake evaporation rates and monthly vegetation coefficients to estimate potential evapotranspiration for several natural vegetation types during months when there is no snowpack. We applied this methodology to each of the vegetation types within the separate precipitation bands for the Landis Creek watershed.

For some soil types and areas within the watershed, rock outcrop and loose surface rock comprises a significant portion of the surface area. Based on soils descriptions in the soil survey, and mapping and descriptions of soils and vegetation provided by JGA, we reduced the potential evapotranspiration (ET) by a factor representative of the amount of rock cover. For example, for a soil type with 40-percent rock coverage, the potential ET rate was adjusted by a factor of 0.6. In addition, ET was also reduced for steep slopes and some soil types for which the soil survey data indicated a lower than average range vegetation production or timber production value.

For months with a snowpack, a set rate of 0.011 inches per day of evaporation (sublimation) loss was used based on the methodology in Hearne and Dewey (1988). The assumed snowpack period ranged from December through February for the lower elevations, up to a period of November through April for the higher elevations within the

Exhibit 6-45

Landis Creek watershed. Outside of these periods, snowmelt was assumed to exceed snow accumulation, and the ET rate for the various vegetation types was used.

Soil Moisture Budget Calculations

A soil moisture budget was used to combine the precipitation and potential evapotranspiration components to estimate recharge to the ground water system. Under this method, soil moisture could be increased up to the maximum soil moisture storage capacity when monthly precipitation exceeded evapotranspiration. Once the upper limit of soil moisture was attained, all remaining water in a given month was counted as recharge. For months when evapotranspiration exceeded precipitation, the soil moisture could be depleted down to 70 percent of maximum soil moisture capacity. Below this soil moisture level, it was assumed that evapotranspiration rates would decline to near zero as plants were stressed.

The soil moisture budget accounting was performed for each soil type within each precipitation band. The resulting estimates of recharge were then summed for each band based upon the proportionate acreage of each soil type. Table 1 provides a summary of estimated recharge for each precipitation band based on average annual precipitation. The total estimated recharge was approximately 4,700 acre-feet per year, or about 5.8 inches averaged over the watershed area. As expected, the highest recharge rates were in the higher elevation and precipitation bands.

In addition to the average year analysis, recharge estimates were made for a wet year and a dry year based upon the 20 percent and 80 percent exceedence probabilities for precipitation at the Aspen climate station. For a dry year, estimated recharge was about 1,900 acre-feet, or 2.4 inches averaged over the watershed. For a wet year, estimated recharge was about 7,100 acre-feet, or an average of 8.8 inches. Tables 3 and 4 summarize the wet year and dry year analyses.

Recharge Summary and Conclusions

The use of the soil moisture budget method of estimating recharge provides a detailed estimate based upon the differing soils, vegetation and elevation conditions within the Landis Creek watershed. There are certain limitations to the methodology, however, which may affect the recharge estimates. The method relies on fairly generalized data for precipitation and evaporation, both of which were derived from large-scale maps. This data, however, was the best available for the watershed area. For the higher elevation portions of the watershed, the method may underestimate recharge during the spring snow melt period, because it calculates moisture storage occurring in the soil profile, instead of accumulating in the snow pack over the winter months. In addition, the use of monthly water budget inputs may not account for timing of some large precipitation events, which can exceed soil moisture storage capacities and evapotranspiration over short time periods, which can result in additional recharge. Overall, we believe that this methodology provides

Exhibit 6-45

a good estimate of recharge within the Landis Creek watershed. The method also provides a very detailed determination of the aerial distribution of recharge within the watershed.

Soil - Vertical Recharge Potential

The next phase of the analysis was to determine if the vertical permeability of the soils were capable of accepting approximately 7,100 af/yr of recharge. In order to make this determination for soils on the property vertical permeability data was obtained from the United States Department of Agriculture (USDA) Soil Conservation Service (1992) "Soil Survey of Aspen-Gypsum Area, Colorado, Parts of Eagle, Garfield, and Pitkin Counties". The soil survey information includes: a map showing soil locations, soil descriptions, vertical permeability, depth, clay percentage, water table location, and depth to bedrock. Data for soils on the SVR are on Table 5. The soil report presents data for individual soil layers. Data on Table 5 presents data ranges and not data for individual layers within each soil.

Table 5

Soil Properties

Soil No.	Vertical Permeability (in/hr)	Clay Percentage	High Water Table (feet)	Available Water Capacity (in/in)
10	0.06 to 6.0	10 to 35	> 6.0 ft.	0.07 to 0.20
11	0.06 to 6.0	10 to 35	> 6.0 ft.	0.07 to 0.20
12	0.6 to 2.0	10 to 25	> 6.0 ft.	0.06 to 0.14
18	0.06 to 2.0	15 to 55	> 6.0 ft.	0.05 to 0.18
19	0.06 to 2.0	15 to 55	> 6.0 ft.	0.05 to 0.18
34	0.6 to 6.0	15 to 35	> 6.0 ft.	0.11 to 0.21
35	0.6 to 6.0	15 to 35	> 6.0 ft.	0.11 to 0.21
48	0.06 to 2.0	20 to 50	> 6.0 ft.	0.13 to 0.19
49	2.0 to 6.0	8 to 18	> 6.0 ft.	0.11 to 0.15
64	0.6 to 2.0	15 to 40	> 6.0 ft.	0.10 to 0.18
69	0.2 to > 20	2 to 35	1.0 to 3.0 ft.	0.03 to 0.21
95	0.06 to 2.0	15 to 45	> 6.0 ft.	0.08 to 0.21

The soil permeability range and terms describing vertical permeability are:

0.06 to 0.2 in/hr (0.12 to 0.4 ft/day) – Slow
0.6 to 2.0 in/hr (1.2 to 2.0 ft/day) – Moderate
2.0 to 6.0 in/hr (4.0 to 12.0 ft/day) - Moderately Rapid

Some infiltration occurs during each month of the year with the majority of the infiltration occurring in the spring. Infiltration rates in feet per day are calculated on Table 6 for each precipitation area. The results of these calculations show that the calculated infiltration rates are all less than the smallest SVR soil infiltration rates which are converted

Exhibit 6-45

from inches per hour above. This demonstrates that the soils on the SVR are physically capable of accepting the wet year value of 7,100 af/yr of recharge.

Table 6

Wet Year Infiltration Rates

Precipitation Zone inches	Area acres	Infiltration acre feet	Infiltration Rate One Year feet/day	Infiltration Rate Six Months feet/day
30	299	423	3.88E-03	7.75E-03
29	1,567	2,184	3.82E-03	7.64E-03
26	2,468	2,415	2.68E-03	5.36E-03
23	1,985	1,224	1.69E-03	3.38E-03
20	3,409	884	7.10E-04	1.42E-03
Totals	**9,728**	**7,130**		

Additional data shown on Table 5 also supports large recharge rates. The depth to water in all soil types except No. 69 is greater than six feet. This indicates a recharge area. The percentage of clay in the soil is not large. In only three of the soils does the clay range include a value in the fifties. This indicates good recharge potential. The "Available Water Capacity" values are low. This means that the soils are not capable of retaining large amounts of water. Again this indicates that infiltration is occurring. Finally, the soil descriptions include the following terms: seepage, piping, large stones, thin layer, slope, and percs slowly.

From the soils report "seepage" means that water is moving through the soil. "Piping" means formation of subsurface tunnels or pipelike cavities by water moving through the soil. "Large stones" means rock fragments three inches or more across. "Thin layer" means otherwise suitable soil material too thin for specified use. These three descriptions support large recharge rates. "Percs slowly" means the slow water movement through soil adversely affecting the specified use. The percs slowly description is applied to soils with an infiltration rate which includes the 0.06 to 0.2 in/hr rate. "Percs slowly" is a description relative to other infiltration rates. The analysis presented above shows that the infiltration rate of 0.06 in/hr (0.12 ft/day) is at least two orders of magnitude greater than the infiltration rate required for large recharge volumes.

Aquifer - Vertical Recharge Potential

The next issue analyzed was whether or not the aquifer materials beneath the SVR have sufficient vertical infiltration potential to accept approximately 7,100 af/yr. The annual and six-month infiltration rates calculated on Table 6 also apply to this analysis. Recharge occurs to three different material types that are described on page 1 of the JGA report. They are:

Exhibit 6-45

- Siltstones, sandstones, clay stones, and conglomerates of the Maroon Formation;
- Basalt flow, basalt talus, colluvium comprised predominately of basaltic material; and
- Lacustrine materials comprised predominately of fine-grained older rocks that were deposited in a lake.

Information in the literature on the vertical permeability of basalt does not account for fractures. This is because field-scale recharge tests would be very difficult and fractured rocks samples are not amenable to soil laboratory testing. Morris (1967) measured vertical permeability on 93 basalt samples. The range of values were 5.35×10^{-6} to 1.2×10^{-1} ft/day with an average value of 2.67×10^{-2} ft/day. These values represent the vertical permeability of the solid rock matrix and do not account for permeability related to fractures that are known to exist beneath the SVR. Despite this fact the 2.67×10^{-2} ft/day value is greater than the smallest six-month value on Table 6 indicating that the fractured basalt formations accept their portion of the anticipated annual recharge. Morris (1967) states:

> "Although the data indicate a low permeability and porosity of the basalt analyzed, basalt ranks as one of the major water bearing rocks in the United States. The water occurs in large tubelike cavities and in other cavities in the basalt and in the interflow zone between successive lava sheets."

The occurrences of fractures in the basalt beneath the SVR are documented in the geologic literature.

Morris (1967) presents vertical permeability data for fine-grained sandstone, medium-grained sandstone, siltstone, and claystone. The range of vertical permeability values and mean values are shown on Table 7. The low value in the siltstone range is smaller than the six-month infiltration rate values but the average value is within the same magnitude of the three-month infiltration rate values shown on Table 6. The claystone values are developed from two samples. The claystone values should be less than the siltstone values.

Table 7

Sedimentary Rock Vertical Permeability Values

Material	Vertical Permeability Range (ft/day)	Vertical Permeability Mean (ft/day)	Number of Analyses
Fine Grained Sandstone	0.001 to 4.9	0.67	20
Medium Grained Sandstone	0.007 to 29.4	10.3	13
Siltstone	0.0000027 to 0.004	0.0005	8
Claystone	0.00027	0.00027	2

The results of the sedimentary aquifer materials analysis indicated that some siltstones and claystones may have a vertical permeability less than the calculated six-

Exhibit 6-45

month infiltration rates. However, this conclusion does not mean that large volumes of recharge cannot pass through the SVR aquifers. The conclusion is that proportionally less water may pass through the siltstone and claystone and more water will pass through the basalts and coarser grained sedimentary materials.

Estimate of Specific Yield of System Aquifers

The JGA report calculates the amount of groundwater available for withdrawal from beneath the SVR property. Based on the HRS review of the JGA report, Table 8 shows the approximate amount of groundwater available for withdrawal beneath the SVR.

Table 8

Proposed Groundwater Availability Values

Aquifer	Area (acres)	Saturated Thickness (feet)	Specific Yield	Available Groundwater (af)
Upland Volcanics	5,975	50	0.20	59,750
SVA Sand & Gravel Beds	1,500	20	0.25	7,500
SVA Base Volcanics	1,500	50	0.20	15,000
Total	**8,975**			**82,250**

The HRS values do not include a groundwater availability value for the silty and clay sediments that have a much lower specific yield value. In discussions with Garfield County personnel JGA has correctly pointed out that several domestic wells obtain some groundwater from the silty-clay sediments. However, we anticipate that the majority of the project's groundwater will come from aquifer materials with a higher specific yield value.

Morris (1967) provides porosity values from 94 analyses of basalt. The analyses are on the rock matrix and do not include fractures. The range of porosity is 3 to 35 percent. The average value is 17 percent. Based on the available data HRS considers the 20 percent specific yield for the fractured basalt to be an appropriate value.

The JGA report uses a 25 percent specific yield value for the SVA gravel beds. Morris (1967) presents the results of specific yield tests on gravel materials. The mean specific yield values for fine, medium and coarse gravel are 28, 24, and 21 percent, respectively. Fetter (1988) on Table 4.3, page 74, reports specific yield data for sedimentary materials. The specific yield values for sand and gravel range from 10 to 35 percent. Average values range from 21 to 27 percent. The 25 percent specific yield value used by JGA is within this range of values and can be supported by the literature and testing results.

All of the saturated thickness values used in the groundwater availability analysis are supported by the SVR drilling data.

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HRS SUMMARY AND CONCLUSIONS

1. An average year annual infiltration of approximately 4,700 af/yr to the aquifers beneath the SVR is supported by a water budget analysis that includes precipitation, evapotranspiration, soil moisture, and the surface and subsurface materials.

2. The wet year estimate of precipitation recharge is approximately 7,100 af/yr and the dry year estimate is approximately 1,900 af/yr.

3. The vertical permeability of the soils on the SVR are sufficiently high to support an annual infiltration rate in excess of 7,100 af.

4. The vertical permeability of the aquifer materials beneath the soils on the SVR are sufficiently high to support an annual infiltration rate in excess of 7,100 af.

5. The volume of SVA groundwater available for withdrawal to the project's wells is approximately 82,000 af.

Please call if you have any comments or questions concerning this letter.

Sincerely,

HRS WATER CONSULTANTS, INC.

Mark R. Palumbo
Vice President

Cc: Jerry Gamba
Anne Castle
William Lorah

Exhibit 6-45

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Exhibit 6-45

Table 1
Spring Valley Ranch

Landis Creek Watershed
Recharge Analysis Summary
Average Year Scenario

Precipitation Band	Area (acres)	Precip. (inches)	Pond Evap. (inches)	Estimated ET (inches)	Estimated Recharge (inches)	Estimated Recharge (acre-ft)
30-inch precipitation	299	30	40.5	19.0	11.0	273
29-inch precipitation	1567	29	41	17.5	11.5	1,508
26-inch precipitation	2468	26	42	17.9	8.1	1,656
23-inch precipitation	1985	23	43	18.2	4.8	802
20-inch precipitation	3409	20	44	18.3	1.7	493
Average		**23.9**	**42.7**	**18.1**	**5.8**	
Total	**9,728**					**4,732**

Exhibit 6-45

Table 2
Spring Valley Ranch

Spring Creek Watershed
Soils and Vegetation Properties Summary

Soil Survey Number	Soil Name	Distribution Factor	Vegetation Type	Available Moisture Specific (inches)	Available Moisture Combined (inches)	Allowable Depletion	Acreage	% Area
7	Almy Loam	1	grasses & sage		6.44	0.7	98	1%
10	Anvik-Skylick-Sligting				6.62	0.7	1045	11%
11	Anvik	0.33	aspen forest	7.53				
	Skylick	0.33	aspen forest	7.71				
	Slighting	0.34	aspen forest	4.68				
12	Arle-Ansari-Rock Outcrop				1.45	0.7	566	6%
	Arle	0.4	grasses & mtn shrubs	2.40				
	Ansari	0.3	grasses & mtn shrubs	1.64				
12	Rock Outcrop	0.3	none	0.00			243	2%
18	Cochetopa-Antropbus				3.38	0.7	2100	22%
19	Cochetopa	0.55	grasses	3.96				
	Antrobus	0.45	grasses & mtn shrubs	2.68				
34		1	grasses & mtn shrubs					
35	Empedrado Loam	1	grasses & mtn shrubs		7.85	0.7	1516	16%
36		1	grasses & mtn shrubs					
48	Fughes Stoney Loam	1	grasses		5.94	0.7	213	2%
64	Jerry Loam	1	oak brush		4.76	0.7	1371	14%
67	Jerry-Millerlake loams				5.60	0.7	137	1%
	Jerry	0.55	oak brush	4.76				
	Millerlake	0.45	grass & sage	6.63				
69	Kilgore Silt Loam	1	grasses		4.95	0.7	189	2%
87	Morval loam	1	grasses		5.52	0.7	488	5%
94	Showalter-Morval				4.36	0.7	1699	17%
95	Showalter	0.55	grass & mtn shrub	3.41				
	Morval	0.45	grasses	5.52				
106	Tridell-Brownsto				3.23	0.7	63	1%
	Tridell	0.55	pinyon-juniper	3.00				
	Brownsto	0.45	pinyon-juniper	3.50				
						Total	9728	100%

Exhibit 6-45

Table 3
Spring Valley Ranch

Landis Creek Watershed
Recharge Analysis Summary
Wet Year Scenario

Precipitation Band	Area (acres)	Precip. (inches)	Pond Evap. (inches)	Estimated ET (inches)	Estimated Recharge (inches)	Estimated Recharge (acre-ft)
30-inch precipitation	299	36.9	40.5	19.9	17.0	423
29-inch precipitation	1,567	35.6	41	18.9	16.7	2,184
26-inch precipitation	2,468	32.0	42	20.2	11.7	2,415
23-inch precipitation	1,985	28.3	43	20.5	7.4	1,224
20-inch precipitation	3,409	24.6	44	20.5	3.1	884
Average		**29.4**	**42.7**	**20.2**	**8.8**	
Total	**9,728**					**7,131**

Exhibit 6-45

Table 4
Spring Valley Ranch

Landis Creek Watershed
Recharge Analysis Summary
Dry Year Scenario

Precipitation Band	Area (acres)	Precip. (inches)	Pond Evap. (inches)	Estimated ET (inches)	Estimated Recharge (inches)	Estimated Recharge (acre-ft)
30-inch precipitation	299	17.7	40.5	14.5	5.0	125
29-inch precipitation	1,567	17.2	41	13.1	5.2	678
26-inch precipitation	2,468	15.4	42	12.7	3.5	729
23-inch precipitation	1,985	13.6	43	13.2	1.7	278
20-inch precipitation	3,409	11.8	44	12.9	0.3	97
Average		**14.1**	**42.7**	**13.0**	**2.4**	
Total	**9,728**					**1,908**

Exhibit 6-46

From: Brooke Winschell
To: Philip Berry
Cc: Glenn Hartmann
Subject: FW: Garfield County website inquiry - Community Development
Date: Thursday, September 12, 2024 10:35:59 AM
Attachments: image001.png

Here is another SVR comment.

Thanks,

Brooke A. Winschell

Community Development Administrative Specialist
Community Development Department
bwinschell@garfield-county.com
Direct 970-945-1377 Ext. 4212
T: 970-945-8212 | F: 970-384-3470
108 8th St, Suite 401 | Glenwood Springs, CO 81601

From: noreply@formstack.com <noreply@formstack.com>
Sent: Thursday, September 12, 2024 8:58 AM
To: Glenn Hartmann <ghartmann@garfield-county.com>; Brooke Winschell <bwinschell@garfield-county.com>
Subject: Garfield County website inquiry - Community Development

Subject: Spring Valley Ranch Development

Name: Ryan Hygon

Email: rhygon@gmail.com

Phone Number: (828) 713-9762

Message: Please consider the negative impacts this development would have on our valley. In rural areas with few job opportunities, this might be a harder decision due to the potential economic benefits. However, in our valley, we already have more jobs available than people, particularly for the type of employment this development would offer.

Exhibit
6-46

We face significant issues with water shortages, traffic congestion, wildlife habitat destruction, and fire risks. This development would exacerbate these well-documented problems, primarily benefiting out-of-state developers and affluent homeowners.

I urge you to do everything in your power to reject this project and help preserve the quality of life for those of us who call the Roaring Fork Valley home.

Exhibit
6-47

From: Robert Shettel
To: Glenn Hartmann; Philip Berry; Mike Samson; John Martin; Tom Jankovsky
Subject: Spring Valley Ranch Development
Date: Thursday, September 12, 2024 11:41:53 AM

To Garfield County Planners and Commissioners,
I'm writing you to express my desire that the approval of this development strictly follows the recommendations of our local Colorado Parks and Wildlife managers, with particular regard to the local elk herd. In a way, I'm writing on behalf of that elk herd. Officially, this is the Fryingpan River Elk Herd, for Data Analysis Unit 16. DAU 16 covers a huge area, extending all the way to Independence Pass and Hagerman Pass on the East, and up to Minturn and Red Cliff. The Spring Valley Ranch is located at the extreme western edge of the DAU 16, and is where a large portion of that herd over winters.
I initially started hunting this herd back in the early Nineties and continued to hunt them up through the Lake Christine fire in 2018, after which I more or less aged out. When I first started hunting them, it was a robust herd, numbering over 10,000 head, providing me and the other groups of hunters with abundant opportunities to fill our freezers. We first ran into a noticeable decline in numbers in the early to mid 2000's, brought on by several factors. We hunters felt it was primarily due to the explosion of mountain bikes, which were starting to run rampant through critical calving habitat both in our valley and the Eagle River Valley. CPW may be able to add additional factors. CPW's own calf:cow ratios corroborated this with the ratio dropping to 32:100 in 2003. Generally speaking, a ratio of 50:100 is required just to maintain herd size. That ratio continues to be under 40:100 to this day.
Around 2015 that 10,000 number elk herd was down to 5,000. CPW instituted some draconian measures to rescue the herd. I believe we had 4 solid years with NO cow tags and limited draw tags. The measures worked, bringing the herd back up to the population objective. That said, the calf:cow ratio is *still* below 40:100. Anything we can do to eliminate the stressors on the cows during calving season will help this herd. The recommendations that our CPW Wildlife managers have made cover this. I can only emphasize that you in the planning department follow to the letter their recommendations.

Sincerely,

Bob Shettel
local hunter

Exhibit 6-48

From: Brooke Winschell
To: Philip Berry
Subject: FW: Garfield County website inquiry - Community Development
Date: Friday, September 13, 2024 11:12:49 AM
Attachments: image001.png

Here is another one for SVR.

Thanks,

Brooke A. Winschell

Community Development Administrative Specialist
Community Development Department
bwinschell@garfield-county.com
Direct 970-945-1377 Ext. 4212
T: 970-945-8212 | F: 970-384-3470
108 8th St, Suite 401 | Glenwood Springs, CO 81601

From: noreply@formstack.com <noreply@formstack.com>
Sent: Friday, September 13, 2024 10:48 AM
To: Glenn Hartmann <ghartmann@garfield-county.com>; Brooke Winschell <bwinschell@garfield-county.com>
Subject: Garfield County website inquiry - Community Development

Subject: AGAINST SPRING VALLEY DEVELOPMENT

Name: Jennifer Duffy

Email: jpatti7@me.com

Phone Number: (651) 260-0180

Message: September 13, 2024

Dear Mr. Hartmann,

My name is Jennifer Duffy and I am a resident and live in Elk Springs. I am writing to the board of the Garfield County Commissioners office, with my concerns for the

Exhibit 6-48

proposed sale and development proposal of the Spring Valley Ranch, located in Glenwood Springs.
There are many reasons why this sale/development should not be allowed to be approved. Some of the main key points of concern are summarized below:

WATER- Water levels have been inconsistent since Colorado has been in a drought for over 15 years. Adding the additional 577 housing units, as well as a 200-acre golf course, a general store, a fire station, and a possible skiing and sledding hill that the developers are proposing, would significantly affect the water sources.

FIRE- There would be an alarming number of safety concerns if there were to be another fire in the area, for residents to get out safely as well as first responders to safely access the areas. If there were to be an increase in traffic on the roads (due to construction or daily commuting or random traffic), this could cause a problem with roads becoming blocked.

TRAFFIC- The significant amount of traffic increase that would be created in the area would affect many of the residents that currently live in the area, as well as residents and businesses around the area. The road usage increase would create more dust, pollution and noise, that this rural area is not meant to have or endure.

WILDLIFE- This development will have a major impact on wildlife and would make it extremely difficult for the wildlife's migration routes to breeding to being hit by traffic. They would be forced to move to another area that will not be able to accommodate their needs to survive.

Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This development would not benefit the community or the county, it would be taking away from local businesses and the small-town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan.

We need to keep our rural mountain areas rural. We need to help protect our waters. We need to help protect the lands that the wildlife needs to survive. This proposed development will kill what makes this place a desirable place to be. I ask that you do the right thing and vote NO to the Spring Valley development.

Thank you for your time,
Jennifer Duffy, 284 Wood Nymph Lane

Exhibit
6-49

From: Jerome Dayton
To: Glenn Hartmann; Philip Berry
Subject: Spring Valley Ranch Development
Date: Friday, September 13, 2024 3:55:48 PM

Dear Mr Hartman and Mr Berry-

Not only does the Spring Valley Ranch adversely affect water supply, wildlife, and wildfire risks, it also has a perverse effect on the cost of living in this valley. I say perverse because the very addition of non-affordable housing to the county, particularly luxury housing, drives up the cost of living for the rest of us through:

- Increasing costs for construction and repairs as the housing development competes for the trades with all the existing residents.
- These new luxury residents will want their services, adding more demand for the limited supply of labor, driving up labor costs and therefore the cost of living for the rest of us.
- The addition of more luxury houses has the perverse effect of raising the property values of all the surrounding areas, increasing their property taxes.
- This increase in property taxes results in higher rents making service people relocate to cheaper areas, driving up rents there, and increasing the labor costs for service jobs across the valley.
- Even people that already own their own homes feel the effects of this increase in the cost of living.

We simply do NOT need any more luxury developments in the valley. It's time we seriously start addressing the lack of affordable housing in the valley before we all get priced out of the market.

Jerome Dayton-
315 Oar Run Rd
Carbondale, CO 81623

Exhibit
6-50

Petitions Signed by Local Residents to Halt/Oppose the Proposed Spring Valley Ranch Substantial PUD Amendment.

Total Signatures Collected: 1,033

Physical Signatures: **717**

Online Signatures: **316**

Exhibit
6-51

From: noreply@formstack.com
To: Philip Berry
Subject: Garfield County website inquiry - Senior Planner
Date: Saturday, September 14, 2024 7:28:12 AM

Subject: Spring Valley Ranch Development PUD

Name: Lorna Marchand

Email: lornamarchand@gmail.com

Phone Number: (970) 406-2423

Message: September 14, 2024

Mr. Philip Berry
Garfield County Planning Commission
108 8th Street
Glenwood Springs, CO 81601

Re: Spring Valley Ranch Development PUD

Dear Commissioners:

My husband David Miller and I are residents of the Elk Springs neighborhood. When we built our home in 2020, we selected our lot based on the natural beauty of the area, the quiet, semi-rural character of Elk Springs, and the presence of abundant

Exhibit 6-51

wildlife. We are absolutely dismayed at the prospect of a luxury “lifestyle" development with nearly 600 homes, two golf courses, and a private ski hill abutting our neighborhood. Elk Springs is NOT Aspen, and that’s exactly why we chose to live here.

We have many concerns about the Spring Valley Ranch development. This development will destroy the unique natural character of our community and interfere with critical wildlife habitat. In a valley that already has numerous, underutilized golf courses, the idea of constructing two more golf courses in the desert is ludicrous. The golf courses and surrounding homes will negatively impact the elk and mule deer herds by removing their migration corridor. In addition, the development will cause the existing water shortage in Spring Valley to worsen as drought conditions increase. The existing aquifer cannot sustain the additional burden of 1,000,000 gallons of water per day being used for 577 homes and two golf courses. The absurdity of building a private ski hill in a high desert environment that already has a water shortage cannot be overstated. We already have four mountains at Aspen Snowmass as well as Sunlight ski area.

We are also deeply concerned about the adverse impact this development will have on our overburdened road infrastructure. Traffic safety is already a very serious problem in the Roaring Fork Valley, and that issue should be prioritized by the Garfield County Commission over the construction of an unnecessary luxury development. The intersections at County Roads 114 and 110 and Highway 82 are extremely dangerous, and accidents occur regularly. Just yesterday, another major accident occurred on Highway 82 at the intersection with County Road 110, shutting down the highway for nearly four hours and resulting in serious injuries. The access roads into Spring Valley cannot support the hundreds of additional vehicles that would be added to our roads with this new development, and evacuating in the very likely event of a fire will be a public safety disaster.

We urge you to vote “no” on the Spring Valley Development. Please include this letter in the packet that will be provided to the Planning Commission. Thank you.

Sincerely,

Lorna Marchand and David Miller
75 Monarch Road
Glenwood Springs, CO 81601
970-406-2423

Exhibit
6-52

From: Katie Dyal
To: Glenn Hartmann; Philip Berry
Subject: Spring Valley Ranch Development
Date: Saturday, September 14, 2024 8:30:56 AM

Hello Glen and Philip,

I am a resident who resides in Garfield County. I am writing to the board of the Garfield County Commissioners office, with my strong opposition to the proposed development proposal of the Spring Valley Ranch, located in Glenwood Springs.

Water is one of my greatest concerns. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months that have affected not only homesteads in this area but also the livestock and wildlife. Adding to additional golf courses will only add to the already over taxed water table in Colorado.

We need to preserve the nearly 6,000 acres of Spring Valley Ranch from being OVER developed into a gated, luxury lifestyle subdivision of 577 multi million dollar homes, that will destroy rural land, decimate wildlife, deplete our precious local water supply, create more traffic problems for the Roaring Fork Valley.

Garfield County does not need more residential development that only support the wealthy and that which is set up to support very few people per acre.

When new developments must come in, they need to serve better serve the housing issues we currently have.

Thank you for you time and attention taking into consideration the concerns.

Katie

Katie Dyal
951-961-1939
katie.dyal@gmail.com
Pronouns: she/her/hers

"No man ever steps in the same river twice, for it's not the same river and he's not the same man."

Exhibit
6-52

- Heraclitus

Exhibit 6-53

From: Rick Carlson (via Google Docs)
To: Philip Berry
Cc: Glenn Hartmann; Mike Samson; John Martin; Tom Jankovsky; ecottagebarclay@gmail.com
Subject: Spring Valley Ranch
Date: Saturday, September 14, 2024 11:08:30 AM

Rick Carlson attached a document

Rick Carlson (riccarlson@gmail.com) has attached the following document: Learn more

Spring Valley Ranch Letter

Snapshot of the item below:

September 14, 2024

Garfield County Administration & Commissioners
108 8th Street, Suite 101
Glenwood Springs, CO 81601

Dear Garfield County Board of Commissioners,

I am a resident who resides in Garfield County. I am writing to the board of the Garfield County Commissioners office, with my strong opposition to the proposed development proposal of the Spring Valley Ranch, located in Glenwood Springs. I believe that the proposed development will have detrimental effects on our community. Some of concerns are summarized below:

WATER: Water is one of my great concerns. This proposed development would have a catastrophic effect on the water source that is currently established. One of the main factors is that we, as a state, have been in a drought for more than 15 years, with inconsistent winter months to help with the water levels. There have already been water shortage experiences during the summer months that have affected not only homesteads in this area but also the livestock and wildlife. The two years that Spring Valley Ranch was filling up their reservoir the spring I rely on was significantly affected.

Global climate change and the on-going drought has contributed to water

Exhibit 6-53

quality and quantity issues for the entire Colorado River water system. Allowing them to utilize large quantities of this precious resource to irrigate and make snow is irresponsible. Adding the additional 577 housing units, as well as 2 golf courses, a general store, a fire station, and a South facing skiing and sledding hill that the developers are proposing, would significantly affect these precious water sources.

FIRE: There is an alarming number of safety concerns if there were to be another fire in the area today. If there were to be an increase in traffic on the roads then this could cause a problem with roads becoming blocked making it difficult for residents to get out safely, not to mention the first responders being able to safely access the area. Having these additional structures so close to each other would create more fire fuel and make it more difficult to control or fight a fire, compared to the current landscaping that is there. Spring Valley already has only 3 accessible emergency routes, without any additional traffic.

TRAFFIC: The significant amount of traffic increase that would be created in the area would affect the residents that currently live in the area, as well as residents and businesses around the area. The traffic would increase to become unmanageable, and would not only affect County Road 114 but County Road 115, County Road 119, County Road 110, and all of the different road routes that go through Cattle Creek, over towards Missouri Heights and Cottonwood Pass towards Eagle. The road usage increase would create more dust, pollution, wildlife collisions and noise, This is just not something this area can endure. There would be a significant increase in traffic that would also affect Highway 82, which is already having many problems with the volume of traffic. The developers are indicating that traffic would increase to 5,700 trips a day on County Road 114 alone, not including the construction traffic that will take place for the proposed 10-12 years.

WILDLIFE: The wildlife in the area has changed over the years but has been returning to the area for the last few years, including elk. Multiple herds of elk have re-established their migration routes that run through Spring Valley, Spring Valley Ranch, Lookout Mountain, Elk Springs, High Aspen Ranch and surrounding areas. Black bears have also been returning to the high mountains of the area, even after the Grizzly Creek Fire had pushed them out temporarily. There are a significant number of deer that have also created a home all throughout Spring Valley and the surrounding areas, as well as the white-tailed jackrabbits. Mountain lions still live within Spring Valley, Lookout Mountain, and surrounding areas as a part of their territory for feeding and breeding. This development will have a major impact on wildlife and would make it extremely difficult for their migration routes to breeding to being hit by traffic. They would be forced to move to another area that will not be able to accommodate their needs to survive.

Please consider the negative impacts that this proposed development for the Spring Valley Ranch would have on the neighboring residents and the county as well. This development would not benefit the community or the county, it would be taking away from local businesses and the small town mountain charm we have. It would also not be consistent with many sections of the Garfield County 2030 Comprehensive Plan. We need to

Exhibit 6-53

keep our rural mountain areas rural.

Thank you for your time.

Rick Carlson
1752 County Road 109
Glenwood Springs, CO 81601

970-948-9650