

Peak Materials Site Evaluation Report

Kilgore Companies, LLC dba Peak Materials (Peak Materials) is a supplier of high-quality aggregate that has been operating in Summit County's Lower Blue Valley since 1965. Currently, Peak Materials operates the Maryland Creek Ranch (MCR) facility, which is located just north of Silverthorne. The MCR site is the only large-scale source of aggregate, ready-mix concrete, and asphalt in Summit County (the County). This aggregate resource will soon be fully extracted from the MCR site, which could leave the County without a local source of high-quality raw aggregates beyond 2025.

Peak Materials would like to continue to operate their processing facilities at MCR in order to supply the County with a local source of high-quality raw aggregates beyond 2025. However, to do so, they need to identify a new nearby source of gravel to feed the MCR facility. This report describes the site-selection criteria considered to identify the Peak Ranch Resource site and ultimately determine that it is the most appropriate site for mining in the Lower Blue Basin.

Site Evaluation Factors

There are no perfect sites when it comes to identifying sites for mining. Experience has shown that there are many contributing factors to select a site that provides the material needed and minimizes impacts on the community. By working with a team of professional consultants, Peak Materials found the Peak Ranch Resource site is the most appropriate site to mine in the Lower Blue Basin. Below is an explanation of the factors considered in the assessment process.

1. Quality and Quantity of Reserve

A site must have at least 10 years of a mining resource available to merit the investment and expenses to permit and prepare a mining site. Most of the aggregate mined in Colorado occurs in floodplains and low terraces along streams (see **Front Range Infrastructure Resources Project Aggregate Resources Activities** report published by the United States Geological Survey¹). These deposits are known as *alluvial* sand and gravel deposits. In these areas, the sand and gravel have been reworked or sorted by the rivers, which removes much of the fine-grained sediment or mud and results in a high-quality deposit that can be extracted and readily reclaimed. Sites with *alluvial* sand and gravel deposits are prime aggregate mining sites because of the quality of the resource.

Sand and gravel deposits also occur in what is called *glacial till* located topographically above stream valleys. While *glacial tills* contain substantial amounts of sand and gravel, they contain even more fine-grained material or mud that has no economic value. Mud is present because the deposits have not been sorted by a stream or river. Mining from *glacial till* deposits requires up to three times the land disturbance and processing compared to an *alluvial* reserve to produce the same amount of sand and gravel. Since the quality of the resource is inferior and more land needs to be mined, *glacial till* deposits are less desirable mine sites.

The Peak Ranch Resource site contains *alluvial* resources. Peak Materials will only need to disturb 54 acres of the Peak Ranch Resources site to access at least 10 years of the material. These *alluvial* sites are very rare in the Lower Blue Valley. The only other alluvial resource site in the Lower Blue Valley is a privately-owned property protected with a conservation easement.²

¹ <https://pubs.usgs.gov/fs/fs-0119-98/fs-0119-98po.pdf>

² Peak Materials used publicly available geologic maps from the U.S. Geological Survey to identify gravel resources in the Lower Blue Valley of Summit County along Highway 9. These maps can be accessed using Internet Explorer (other browsers will not work) at this website link: <https://ngmdb.usgs.gov/mapview/>

2. Duration and Cost of Reclamation

The time and cost to reclaim a site are affected by the type of reserve (*alluvial* or *glacial till*) at the site. *Alluvial* deposits occur in areas with a flatter slope, typically closer to the water table. *Glacial till* deposits are found in areas sitting higher above groundwater. *Glacial till* areas tend to result in a reclaimed surface with steeper slopes broken up by terrace areas. The surfaces, which don't have access to water, require dryland vegetation, which is challenging, time-consuming, and expensive to establish. With an *alluvial* deposit, mining involves digging a depression in the ground and reclaiming the surface with a pond or other vegetation on a surface that is usually not far above groundwater. Consequently, the amount of time, effort, and cost involved to establish good vegetative cover on an alluvial deposit site is significantly less than achieving a healthy vegetative cover on a glacial till deposit site. When it comes to the duration and cost of reclamation, the preference is to mine an *alluvial* deposit rather than a *glacial till*.

As stated, the Peak Ranch Resource site contains an *alluvial* deposit. Peak Materials plans to mine and concurrently reclaim the site to minimize the area of disturbance at any one time. A few years after all mining is complete, they expect to be able to fully establish vegetation and have the reclamation bond for the site released by the Division of Reclamation, Mining and Safety.

3. Proximity to Maryland Creek Ranch

Local communities require aggregate (stone, sand, and gravel) to meet their construction needs and benefit from the existence of a local resource. Peak Materials currently processes aggregates into construction materials at the MCR site. To maintain affordable local production of construction materials, Peak Materials plans to truck aggregate resources from the new site to MCR for processing.

The weight of these materials makes it neither economical nor practical to transport aggregate longer distances. The cost of the final material increases with the miles and time required to haul the material. This cost is ultimately paid by the end-users in the local community. Therefore, Vehicles Miles Traveled (VMT) is an important factor in the aggregate mining industry.

Truck routes that avoid travel through urbanized areas (such as Silverthorne) to get to Maryland Creek Ranch are also important. Gravel trucks in urban areas can impact traffic congestion, travel time, and safety. This can frustrate drivers in the community, increase emissions and environmental concerns, and ultimately increase the cost of the material to the local consumers.

Thus, sites closer to Maryland Creek Ranch are preferable. The Peak Ranch Resource site is within five miles of Maryland Creek Ranch, travel through urbanized areas is not necessary, and transport time and VMT are minimized.

4. Impacts on Roads and Communities

Sites located adjacent to highways are desirable because they minimize impacts on local roads and communities. Specifically, State Highway 9 is a major movement arterial designed and intended to handle high traffic volumes and goods movement, including heavy trucks. In comparison, local county and Forest Service roads in the area are typically gravel roads and/or are not designed to sustain regular truck traffic. Increased truck traffic on those roads would amplify dust and road damage and require extensive mitigation and repair efforts. Additionally, local roads often are located near residential neighborhoods and communities where traffic volumes are generally lower and regular truck traffic is atypical.

The Peak Ranch Resource site directly accesses Highway 9 and does not require the use of any local roads to travel to Maryland Creek Ranch. The Colorado Department of Transportation (CDOT) controls all access points onto Highway 9. They have determined that traffic from this site can access Highway 9 directly across from Elk Run Road. Therefore, all travel to and from Maryland Creek Ranch can be on the highway to avoid any impacts on local roads or residences along those roads.

5. Number of Residences Impacted by Mining

Aggregate mining is a necessary land use because all development, including residential, utilizes construction materials created from the raw materials produced by mining. It is always preferable to identify mining sites that

have as few existing residences around them as possible. It is very rare to find sites that have no existing residential neighbors. Therefore, when sites are next to properties containing residences, aggregate mining operators, like Peak Materials, take steps to design their facilities in ways that help minimize the impacts from the mining on the adjacent residences.

The Peak Ranch Resource site is located adjacent to large-lot, agricultural zoned properties, some of which contain residences. However, the residences are substantially set back from the shared property line, and the project will incorporate earthen berms and vegetated setbacks into its design to provide an added buffer. The Peak Ranch Resources site is not located near any residentially zoned neighborhoods.

6. Impacts on Wildlife

As part of the permitting process for any land use, the Colorado Parks and Wildlife (CPW) evaluates potential impacts on wildlife. Projects that can demonstrate no significant impacts or can make plans to mitigate impacts are generally considered acceptable. Applicants are required to hire professional biologists to understand what wildlife currently inhabits a site, identify potential impacts on the wildlife, and propose mitigation techniques. It is in the best interest of Peak Materials to find sites that will have few, if any, impacts on wildlife.

Ecological Resource Consultants evaluated the Peak Ranch Resource site and determined that impacts on wildlife would be minimal. The portion of the site that will be mined was previously fenced off and used for livestock; thus, the quality of the vegetation on the site is currently less than optimal for wildlife habitat. A portion of the site along the Blue River has some quality wildlife habitat, but it will not be impacted by the mining activity. Peak Materials has also agreed to implement CPW-recommended modified hours for trucking operations to help prevent trucks from encountering wildlife crossing the highway around dawn and dusk. Finally, once the site is mined and reclaimed, the resulting open water pond surrounded by natural rangeland vegetation will be much-improved habitat for wildlife. Therefore, impacts on wildlife from mining are anticipated to be minimal and, in the long term, will improve the overall habitat.

7. Impacts on Vegetation

When a site is mined, it impacts the ground surface and removes vegetation. Therefore, sites without sensitive vegetation areas, and with a minimal number of trees and shrubs are preferable from an aesthetic and environmental perspective.

The Peak Ranch Resource site will create minimal disturbance on sensitive vegetation, trees, and shrubs. The portion of the site proposed to be mined previously contained livestock in small fenced-in areas. As a result, the areas show signs of overgrazing. There are approximately five trees on the site that will need to be removed with mining; however, Peak Materials plans to offset this loss by planting new trees on-site.

The Peak Ranch Resources site contains a small wetland area located in the northeast corner. No portion of the wetland will be mined for aggregate and just a small area will be crossed with the access road into the site. (Original plans placed the access point farther south; however, CDOT controls the location of access points and for safety reasons, it must be aligned with Elk Run Road.) Peak Materials' consultant will work with the Army Corps of Engineers and Summit County to obtain the appropriate permits to allow this to happen. The overall impact on vegetation due to future mining activities on the Peak Ranch Resource site will be minimal.

8. Visibility from Off-Site (per Lower Blue Master Plan Visibility Map)

The Lower Blue Master Plan, published by Summit County on March 4, 2010, contains a Visibility Map which is intended to serve as a resource to objectively evaluate the visibility of each parcel of land in the Basin as viewed from major arterials. The map color codes areas throughout the Lower Blue Valley to indicate their visibility from off-site locations; the codes are based upon the number of observation points from which you can see an area. The least visible areas can be seen from 0-9 points; the most visible parcels can be seen from 228-300 points in the County.

Peak Materials reviewed this map to identify sites with limited observation points, as they generate less visual impact within the County. According to the Visibility Map, the Peak Ranch Resource site is visible from relatively few observation points; most of the site is visible from 0-9 points and a strip of the site adjacent to the highway is

visible from 10-82 points. Therefore, this site generally has low visibility from public vantage points. The incorporation of earthen berms and vegetation will further limit visibility of the site.

9. Minimize Long-Term Visual Impacts

The potential long-term visual impacts of mining are an important consideration for Peak Materials. When a site is mined by digging a hole in the ground to extract the resource (as with an *alluvial* resource), it is relatively simple to reclaim the mined area so that blends into the natural environment. The mined surface can be reclaimed as a lake or the depression can be partially filled with unmarketable material, covered with topsoil and revegetated with native plants and grasses to blend in with the land in the area. When a site is mined by cutting into the side of a mountain to extract the resource (as with a *glacial till* resource) the shape of the mountain is changed, and the impact of mining is more noticeable. It also takes longer to reestablish vegetation on the mountain due to challenges with slopes and water necessary to establish new vegetation.

Mining an *alluvial* resource results in less significant and shorter-term visual impacts than mining *glacial till* on a hillside. The Peak Ranch Resource site contains an *alluvial* resource and so it is the optimal resource for minimizing long-term visual impacts from mining.

10. Right to Mine Land

Legal access to a property is required before you can take any steps to permit it for mining. Legal access can be through ownership or a lease to mine agreement. Moreover, the process of obtaining the right to mine can be time-consuming as it requires negotiation with landowners for a land purchase or lease agreement.

Peak Materials acquired the Peak Ranch Resource site in 2018, a few years after the property owner made the property available. Thus, Peak Materials has the necessary rights to request permits from the DRMS and Summit County.

Conclusion

Peak Materials determined that the Peak Ranch Resource site is an appropriate site to pursue permitting for mining based on the site evaluation factors described above. Importantly, the site is the only *alluvial* resource site in the desired geographic area for Peak Materials to mine.