Residential Subdivision #1 at the Quarry
Big Sky, MT

Montana Department of Environmental Quality

Draft Environmental Assessment
EQ# 22-2120 and 22-2092

December 8, 2022

Residential Subdivision #1 at the Quarry
Big Sky, MT

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Introduction:

In 2021, Big Sky Rock, LLC, ("the Applicant") received Platting and Planning approval for the Quarry Planned Unit Development (PUD) Site Plan from Gallatin County. The Applicant now proposes to construct the first development within the approved Quarry PUD: The Residential Subdivision #1 at the Quarry ("the Project"), which would consist of eight (8) condominium lots. The Applicant has applied to the Department of Environmental Quality (Department) for a Certificate of Subdivision Approval (COSA) for the Project.

The facilities under review by the Department consist of the water, wastewater, and stormwater facilities associated with the development. Water services would be provided by connection to the existing Lazy J Utility Association facilities. Each of the proposed eight lots would have their own wastewater treatment provided by a Level II wastewater treatment facility and drainfield. A Level II subsurface facility is a standard septic system with an added treatment for additional nitrogen removal. The units are capable of discharging at or below the nonsignificance criteria of 7.5 mg/l nitrogen in 75-5-301 (5)(d), Montana Code Annotated. The wastewater treatment would be constructed and operated similar to other residential septic systems.

Lots 1, 2, 3,4, and 8 would each have 12 condominium units with a maximum wastewater flow of 3,000 gallons per day (gpd) per lot. Lots 5, 6, and 7 would each have 10 condominium units with a maximum wastewater flow of 2,500 gpd per lot. Stormwater retention and treatment would be provided by a combination of five (5) on-site retention ponds, swales, roadside gutters, storm sewers and manholes.

In conformance with the approved Quarry PUD Site Plan, Lot A may be used for open space, residential and commercial development, and Lot B may be used for a combination of commercial and residential (multi-family, on second and subsequent stories). Under this COSA application, the Applicant proposes to construct drainfields and retention ponds on both Lot A and Lot B, but no commercial structures or living units. Lot A and open space lot OS-1 are exempt from review under the Sanitation Act pursuant to 76-4-103, Montana Code Annotated, (MCA) as both are greater than 20-acres.

Name of Project: Residential Subdivision #1 at the Quarry

Applicant: Big Sky Rock, LLC

Location of Project: Section 5, Township 07S, Range 04E, Tract 2 of COS

City/Town: Big Sky, MT **County**: Gallatin **Project Number**: EQ#19-1768

Purpose and Need:

The need for Department approval, prior to construction, is prescribed by the Certificate of Subdivision Approval (COSA) review process under the Sanitation in Subdivisions laws in Title 76, chapter 4 of MCA. The Applicant is seeking a COSA from the Department for Residential Subdivision #1 at the Quarry. This Environmental Assessment (EA) has been prepared as

required by the Montana Environmental Policy Act (MEPA) to disclose potential impacts from a state action granting the COSA approval for the Project.

Description of Proposed Project:

The proposed Residential Subdivision #1 at The Quarry, PUD ("the Project") is a proposed residential subdivision located near Big Sky, Montana, consisting of eight (8) condominium lots. The Applicant has applied to the Department of Environmental Quality (Department) for a Certificate of Subdivision Approval (COSA) for the Project. The facilities under review by the Department consist of the water, wastewater, and stormwater facilities associated with the development as depicted on Figure 1.

Water services would be provided by connection to the existing Lazy J Utility Association facilities. Each of the proposed eight lots would have their own wastewater treatment provided by a Level II wastewater treatment facility and drainfield. -. A Level II subsurface facility is a standard septic system with an added treatment for additional nitrogen removal. The units are capable of discharging at or below the nonsignificance criteria of 7.5 mg/l nitrogen in 75-5-301 (5)(d), Montana Code Annotated.

Lots 1, 2, 3,4, and 8 would each have 12 condominium units with a maximum wastewater flow of 3,000 gallons per day (gpd) per lot. Lots 5, 6, and 7 would each have 10 condominium units with a maximum wastewater flow of 2,500 gpd per lot. Stormwater retention and treatment would be provided by a combination of five (5) on-site retention ponds, swales, roadside gutters, storm sewers and manholes.

In conformance with the approved Quarry PUD Site Plan, Lot A may be used for open space, residential and commercial development, and Lot B may be used for a combination of commercial and residential (multi-family, on second and subsequent stories). Under this COSA application, it is proposed to have drainfields and retention ponds located on both Lot A and Lot B, but no commercial structures or living units. Lot A and open space lot OS-1 are exempt from review under the Sanitation Act pursuant to 76-4-103, Montana Code Annotated, (MCA) as both are greater than 20-acres.

The project is located in Section 5, Township 07S, Range 04E, Tract 2 of COS 2450 in Big Sky, Montana (Property) within the Quarry Planned Unit Development at Big Sky (PUD). The Property lies approximately 2800 feet south of the intersection of Lone Mountain Trail (MT-64) and Highway 191, and approximately 1200 feet west of the Gallatin River.

The Property currently contains an active DEQ-permitted gravel pit (Opencut Permit #3023) within the area of the Property zoned Commercial-Industrial. The permit requires reclamation of the site by 2026, though gravel operations can be reclaimed at any time, according to DEQ regulations.

The Applicant explains that the Gallatin County conditional use permit for the gravel pit expired in 2022 and the pit may now be reclaimed and developed through development of the commercial zone of the PUD. The applicant proposes that access to the pit would be secured through gates and development activities would be contained within the residential zone to the west and south of the pit.

Agency Action and Applicable Regulations Related to This Design Application:

- Montana Code Annotated (MCA)
- DEQ Design Circulars:
    - DEQ-1, 2018 Edition, Standards for Small Water Systems
    - DEQ-4, 2013 Edition, Montana Standards for Subsurface Wastewater Treatment Systems
    - DEQ-8, 2017 Edition, Montana Standards for Subdivision Strom Water Drainage
- DEQ General Permit for Storm Water Discharges Associated with Construction Activity (SWC) and associated Stormwater Pollution Prevention Plan (SWPPP)
- County-approved Quarry PUD

Affected Environment & Impacts of the Proposed Action:

[Y] = Impacts may occur.

[N] = Not present or No significant impact expected.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	[N] No significant impacts to geology and soil quality, stability or moisture are expected. The soil type potentially impacted by the Project is Philipsburg-Libeg complex which is loam, gravelly clay loam, loamy alluvium and gravelly sandy clay loam. (NRCS, Nov 2022) The Project would not impact geology resources as the depth of construction and installation would not impact geology. No fragile, erosive, unstable, or soils susceptible to compaction are present. The applicant engaged Rawhide Engineering, Inc. (Rawhide) to conduct the preliminary geotechnical investigation for the property and conducted onsite investigations in August of 2018. Rawhide evaluated the subsurface conditions of the property for the proposed residential and commercial development contained within the PUD Site Plan. Rawhide performed 11 exploratory test pits based on proposed development locations and reviewed additional information from test pits that were previously done on the property. Samples were taken from bulk samples from the test pits, and moisture content and soil classification tests were performed.

2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	[N] No significant impacts to water quality, quantity or distribution are expected. Area data indicates groundwater levels are around 50 to 60 feet below existing ground. The Project is located within an area that has a FEMA FIRM Map, and a recognized completed flood study for the Gallatin River. In addition, no part of the Project would be located within the Michener Creek Drainage. Therefore, a flood hazard evaluation is not warranted. The Project is not proposed to be located in any wetlands (Montana Wetland and Riparian Framework Layer) and the Storm Water Pollution Prevention Plan (SWPPP) mitigations would minimize any sediment and erosion related impacts to surface water during construction. The Project meets all water quality standards, including the nondegradation requirements. A Wetland and Waterway Delineation Report was completed for the property by Power Engineers, Inc. on September 13, 2018, in accordance with the US Army Corps of Engineers (USACE) Wetlands Delineation Manual. The focus of the study was the approximate 126-acre development area for the property. A routine wetland survey was also completed for this same area. A total of two wetlands (1.32 acres) and one stream (0.39 acre, 2,978 linear feet) were identified and delineated within the development area. To buffer the impacts from the Project, the wetland and the riparian area of Michener Creek are contained within the 29.7 acre dedicated open space (O-S 1) and all infrastructure and improvements for the Project are located outside of the 150-foot setback as required by Section 6(A)(5)(a) of the USACE Regulations. The Applicant proposes a wastewater disposal system using SepticNet treatment systems as required in the Gallatin County Platting and Planning PUD approval. As a requirement of the Platting and Planning PUD approval, the Applicant will monitor the effluent at the end of pipe of each individual septic system for flow rate, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Nitrate and Nitrite as N, Total Kjehdahl Nitrogen (TKN) as N, total Phosphorus, and Ammonia. The Applicant will also monitor the groundwater discharge at the east property line for Chlorine, E Coli, Nitrate and Nitrate as N, TKN as N, total Nitrogen as N, specific conductivity, and static water level annually.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	As part of the Platting and Planning PUD approval, the Applicant must submit a complete design to MDEQ for review and approval. In addition to the effluent monitoring requirements of the Platting and Planning PUD approval, the Department's COSA would require annual sampling in accordance with the Administrative Rules of Montana (ARM) 17.30.718(8)(b) for the life of the system for the following parameters: nitrate; nitrite, ammonia, TKN, BOD, TSS, fecal coliform, specific conductance and temperature.
3. AIR QUALITY: Will pollutants or particulates be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?	[N] No significant adverse impacts to air quality are expected as a result of the Subdivision. During construction, the SWPPP and associated best management practices would minimize dust and soils tracking outside the proposed development area.
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	[N] No significant adverse impacts to vegetative communities are expected as a result of the Project. Vegetation across the site includes forest land (a mix of conifers), rangeland (sagebrush), and grassland. The Applicant intends to preserve steeper slopes and natural vegetation as a critical part of development. The Applicant states that new landscaping introduced as part of condominium development would include only native plant materials.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	[N] No significant impacts to terrestrial, avian and aquatic habitats are expected. A Wildlife Study was completed by Power Engineers, Inc. and listed the wildlife species that may occupy the project area as, “generalist species that are habituated to human disturbance … chipmunks ... northern racoon, striped skunk and red fox.” The Wildlife Study also identified certain migratory birds that may frequent developed areas such as northern chickadee, yellow warbler, and western meadowlark. Ungulate species that may occupy the project area include elk, bighorn sheep, moose and mule deer. The existing wildlife habitat has diminished value due to the existing use of the property as a gravel pit. By keeping developed lots closer to U.S. Hwy 191 and within existing developed areas, maintaining 105.44 acres of open space (protecting Michener Creek, its riparian corridor, and the ponded impoundment), and implementing additional avoidance and minimization measures, impacts to wildlife from the Project are anticipated to be minimal.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	[N] No significant impacts to unique, endangered, fragile or limited environmental resources are expected. A review of the United States Fish and Wildlife Service Information for Planning Consultation report for the project area which included a one-mile buffer, identified Canada lynx, grizzly bear, and the North American wolverine as having potential to occur on and in the general vicinity of the property. The Wildlife Study found that the project area does not include critical habitat for the Canada lynx and that documented occurrences of species within the project area were not identified through the Montana Natural Heritage Program data search. A Wetland and Waterway Delineation Report was completed for the property by Power Engineers, Inc. on September 13, 2018, in accordance with the USACE Wetlands Delineation Manual. The focus of the study was the approximate 126-acre development area for the Property (Project Area). A routine wetland survey was completed for the Project Area. A total of two wetlands (1.32 acres) and one stream (0.39 acre, 2,978 linear feet) were identified and delineated within the Project Area. To buffer the impacts from the Project, the wetland and the riparian area of Michener Creek are contained within the 29.7 acre dedicated open space (O-S 1) and all infrastructure and improvements for the Project are located outside of the 150-foot setback as required by Section 6(A)(5)(a) of the USACE Regulations. The Applicant also worked closely with the Montana Fish, Wildlife & Parks during the PUD process and adopted covenants to address the protection of wildlife. The Project is in an area that has already undergone disturbance and development. No new adverse impacts are expected.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
7. SAGE GROUSE EXECUTIVE ORDER: Is the project proposed in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: http://dnrc.mt.gov/divisions/cardd/sage-grouse? If yes, did the applicant attach documentation from the Program showing compliance with Executive Order 12-2015 and the Program's recommendations? If so, attach the documentation to the EA and address the Program's recommendations in the permit. If project is in core, general or connectivity habitat and the applicant did not document consultation with the Program, refer the applicant to the Sage Grouse Habitat Conservation Program.	[N] No significant impacts to sage grouse habitat are expected. The Department has verified that the Project is not within core, general, or connectivity sage grouse habitat.
8. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological, or paleontological resources present?	[N] No significant impacts to historical and archaeological sites are expected. The Applicant engaged Metcalf Archaeological Consultants, Inc. to complete the cultural resources inventory for the entirety of the property. In summary, the inventory resulted in documentation of three cultural resources, including a historic prospect pit, a historic earthen ditch, and a historic log cabin. However, none are recommended for eligibility for listing on the National Register of Historic Places, and no further archaeological work is recommended for the Project as defined at the time of the survey (and the defined project scope has not changed since the time of the survey).

IMPACTS ON THE PHYSICAL ENVIRONMENT	
9. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[N] No significant impacts to aesthetics are expected. The Project is proposed to be located on a prominent bluff above US 191. During construction, the visual impacts would be minimal and occur only during one construction season. During operation, the Project would not be visible as the majority of the Proposed Action is underground except for the stormwater ponds. The stormwater ponds could have visual impacts, but impacts should be minimal to viewers. The Project visual impacts were determined using the Hillside and Ridgeline development regulations of the Gallatin Canyon/Big Sky Zoning Regulation. Local approval of the Quarry PUD required certain conditions be met to minimize any such impacts. The Quarry PUD application addressed compliance with the Hillside and Ridgeline development regulations through Design Standards, Covenants and Landscape requirements. Compliance with the zoning and PUD documents would be assured by the Land Use Permit process.
10. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project? Will new or upgraded powerline or other energy source be needed)	[N] No significant impacts to environmental resources are expected. All utilities would be located underground. None of these resources are limited in the area, no other nearby activities would affect the Project, and no new or upgraded energy source would be needed.
11. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	[N] No significant impacts to other environmental resources are expected. At present, there are no other nearby activities that would affect the Project.

IMPACTS ON THE HUMAN ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
12. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[N] No significant impacts to human heal and safety are expected. Water for the Project is supplied from the Lazy J Utility Association. Per the Platting and Planning PUD approval, the Applicant must monitor the effluent at the end of pipe of each individual septic system line for flow rate, BOD, TSS, Nitrate and Nitrate as N, TKN as N, total Phosphorus, Ammonia, and monitor the groundwater discharge at the east property line for Chlorine, E Coli, Nitrate and Nitrate as N, TKN as N, total Nitrogen as N, specific conductivity, and static water level annually. In addition to the effluent monitoring requirements of the Platting and Planning PUD approval, the Department's COSA would require annual sampling in accordance with ARM 17.30.718(8)(b) for the life of the system for the following parameters: nitrate; nitrite, ammonia, TKN, BOD, TSS, fecal coliform, specific conductance and temperature. In accordance with the Platting and Planning PUD approval, the Applicant must connect to the Gallatin Canyon Water & Sewer District once it is constructed.
13. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[N] No significant impacts to industrial, commercial and agricultural activities and production are expected. The property does not contain active agricultural land. By developing a subdivision within non-agricultural land, the Project does not alter agricultural use on other lands within the Gallatin Canyon. Development of an existing industrial/commercial site potentially preserves other lands that are being used for agriculture. The Project would be located on an existing industrial/commercial site whose conditional use permit expired in 2022. The Project would not significantly impact or alter activities on these already commercial areas.
14. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[Y] Permanent job creation or elimination is not expected, and new jobs created would likely be short term during construction. During operations, the Project could create one part-time job for monitoring and maintenance by a certified operator for the wastewater treatment system.

IMPACTS ON THE HUMAN ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
15. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	[Y] The Project could create an increase in tax revenue. The Project is basic infrastructure and would be subject to taxes.
16. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N] No significant impacts to the demand for governmental services are expected. The Proposed Project is septic tanks, associated pipelines, drainfields, and stormwater ponds. These features do not create long term traffic or impact other governmental services. No new demands for government services are expected.
17. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[N] No significant impacts to locally adopted environmental plans and goals are expected. The Applicant is already required to comply with all applicable federal, state, county, and other local requirements related to zoning, authorizations, permits, and approvals.
18. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[N] No wilderness or recreational areas would be impacted during construction or operation.
19. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N] No significant impacts to population or housing are expected. The Project would provide a method for the safe disposal of effluent or stormwater. There would be no addition to population or housing for effluent disposal or stormwater handling.
20. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N] No significant impacts to social structures and mores are expected. The Applicant engaged Metcalf Archaeology to conduct a cultural resource inventory report for the property and determined that there are no important historic sites or structures on the property.

IMPACTS ON THE HUMAN ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
21. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N] No significant impacts to cultural uniqueness or diversity are expected. Significant new impacts are not expected. See above.
22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N] No impacts to other social and economic circumstances are expected.
23(a). PRIVATE PROPERTY IMPACTS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	[N] No impacts to private property are expected.
23(b). PRIVATE PROPERTY IMPACTS: Is the agency proposing to deny the application or condition the approval in a way that restricts the use of the regulated person's private property? If not, no further analysis is required.	[N/A]
23(c). PRIVATE PROPERTY IMPACTS: If the answer to 23(b) is affirmative, does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives. The agency must disclose the potential costs of identified restrictions.	[N/A]

24. Description of and Potential Impacts of other Alternatives Considered:

No Action: The Department can deny issuance of a subdivision approval until all deficiencies identified are resolved. If the Project meets the requirements under 76-4, Montana Code Annotated and the rules promulgated thereunder, the Department does not have the authority to withhold approval from the Applicant.

25. Summary of Magnitude and Significance of Potential Impacts:

The Project consists of water, sewer, and stormwater facilities on approximately 26.9 acres within a 168.1-acre plat. Two lots within the plat, totaling 141.2 acres, are exempt from review under the Sanitation in Subdivision Act (76-4, MCA), as each is greater than 20-acres (Lot A is 113.9-acres and Lot OS-1 is 27.3 acres). The full 175.11-acre subdivision was previously approved through Gallatin County's PUD process. Runoff from the site would be regulated by the conditions of the COSA and would be managed accordingly.

The Department has determined that the groundwater discharge from the proposed wastewater treatment system would result in nonsignificant changes in water quality, in accordance with 75-5-301 (5)(d), Montana Code Annotated. The Department has therefore determined that there are no significant adverse impacts to the physical or human environment associated with the Project.

Impacts were assessed with the assumption that the facility will comply with the terms and conditions of the approval. Violations of the approval could lead to significant adverse impacts to state waters. Violations of the approval would not be an effect of the agency action since the authorization itself forbids such activities. If violations of the approval do occur, the Department will take appropriate action under State Laws.

26. Cumulative Effects:

Under § 75-1-208(11), an agency shall, when appropriate, evaluate the cumulative impacts of a proposed project. However, related future actions may only be considered when these actions are under concurrent consideration by any agency through preimpact statement studies, separate impact statement evaluations, or permit processing procedures. As required by the Gallatin County PUD approval, the Applicant proposes using SepticNet technology to treat wastewater to the Montana groundwater nonsignificance criteria of 7.5 mg/L. Based on the proposed location of the Project's discharges in relation to surface water, no nondegradation analysis of impacts to surface water is required.

DEQ did not evaluate cumulative impacts to groundwater because the wastewater is already treated to nonsignificant levels prior to discharge. DEQ did not evaluate cumulative impacts to surface water because no drainfields were within ¼ mile of surface water, so the adjacent to surface water trigger analysis was not required.

27. Preferred Action Alternative and Rationale:

The preferred action is to approve the COSA as submitted by the Applicant. This action is preferred because the COSA approval provides a regulatory mechanism for protecting water quality by analyzing the project against the nonsignificance criteria in 75-5-301, Montana Code Annotated.

This action is consistent with ongoing efforts by DEQ, Gallatin County, and local watershed groups to reduce nonpoint source nitrogen loads in the Big Sky area. These strategies are summarized in the Big Sky Nutrient Assessment (WGM, 2020). This document identifies four recommended mitigation actions to support surface water quality in the Gallatin River:

Mitigation 1: Promote centralized treatment in the Canyon Area, reducing current load and the impact of future developments in the Canyon.
Mitigation 2: Advocate for on-site system maintenance
Mitigation 3: Advocate for Level II treatment in new construction.
Mitigation 4: Fund effluent testing and system support for permitted systems to promote good maintenance, especially for community scale systems.

DEQ's action to provide this authorization is consistent with these recommended mitigations. Additionally, while there is no total maximum daily load (TMDL) document for the Gallatin River south of Gallatin Gateway, DEQ's action is consistent with its recommendations for nonpoint source reductions in other watersheds that have nutrient-impaired streams (e.g., the lower Gallatin River watershed and the Lake Helena watershed).

The EA has identified no significant impacts resulting from this Project.

Recommendation for Further Environmental Analysis:

[ ] EIS [ ] More Detailed EA [**X**] No Further Analysis

Rationale for Recommendation: An EIS is not required under the Montana Environmental Policy Act (MEPA) because the Project lacks significant adverse effects, or adequately addresses such effects, to the human and physical environment as noted above.

28. Public Involvement:

Extensive public comment was provided to the Gallatin County Commission prior to the approval of the Quarry PUD. The Department has determined that, due to public interest in the project among other factors, an additional public comment period is required to inform decision-making on the COSA.

EA Prepared and Reviewed By:

Chris Wasia (Genisis Engineering, Inc) - writer
Jenny Warren (MT DEQ) – reviewer
Eric Regensburger (MT DEQ) – reviewer
Craig Jones (MT DEQ) – reviewer
Aaron Pettis (MT DEQ) - reviewer

EA Approved for the Montana Department of Environmental Quality By:

Approved By:

_____ , 2022
Jenny Warren, P.E. Date
DEQ Engineering Bureau

Approved By:

_____ , 2022
Rachel Clark, Chief Date
DEQ Engineering Bureau

Figure 1 – General Proposed Subdivision Site Location

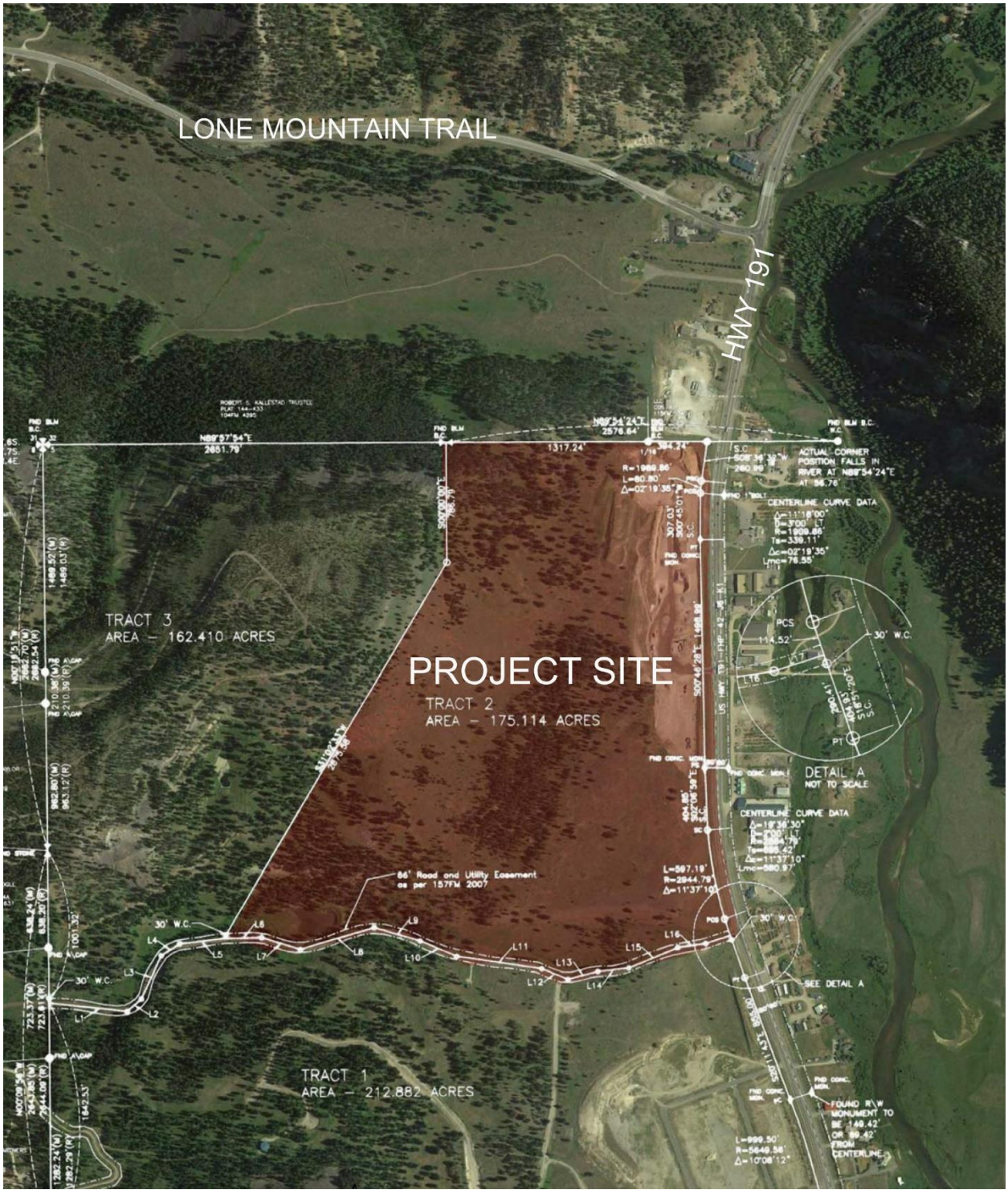

Figure 2 – Overview of Proposed Subdivision

REFERENCES

NRCS, 2022. Web Soil Survey- Map Unit Description: Philipsburg-Libeg complex, 4 to 8 percent slopes---Gallatin County Area, Montana: LazyJ_Soils (usda.gov). Accessed 11/29/22.

Montana Wetland and Riparian Framework Layer, MSDI Framework Wetlands Riparian. Montana Natural Heritage Program. (https://gisservicemt.gov/arcgis/rest/services/MSDI_Framework/WetlandsRiparian/MapServer). Accessed 11/29/22.

WGM Group, 2020. Big Sky Nutrient Assessment.

Property Report and Summary of Impacts - http://g-e-i.net/QUARRY-R1-PP/TAB1/Property%20Report.pdf

Rawhide Engineering, Inc -geotechnical investigation - http://g-e-i.net/QUARRY-R1-PP/TAB4/Geotech%20Report.pdf

Power Engineers Inc – wetland and water delineation report - http://g-e-i.net/QUARRY-R1-PP/TAB4/Quarry%20Wetland%20Study.pdf

Quarry PUD ALL - Final Submittal Documents - http://g-e-i.net/QUARRY-PUD-FINAL/

Power Engineers Inc – wildlife study - http://g-e-i.net/QUARRY-R1-PP/TAB4/Quarry%20-%20Wildlife%20Study.pdf

Consultation with between the Applicant and FWP - http://g-e-i.net/QUARRY-R1-PP/TAB6/The%20Quarry%20at%20Big%20Sky%20Letter.pdf

Metcalf Archaeological Consultants, Inc – cultural resources inventory - http://g-e-i.net/QUARRY-R1-PP/TAB4/Cultural%20Resource%20Inventory%20Report.pdf

Flood hazard Study - http://g-e-i.net/QUARRY-R1-PP/TAB4/Flood%20Study%20Hazard%20Eval%20Report.pdf

Traffic Study - http://g-e-i.net/QUARRY-R1-PP/TAB4/Traffic%20Impact%20Study.pdf

Quarry Groundwater Protection Plan - http://g-e-i.net/QUARRY-R1-PP/TAB4/Quarry%20PUD%20Groundwater%20Protection%20Plan.pdf

Fire Protection Plan - http://g-e-i.net/QUARRY-R1-PP/TAB3/Fire%20Protection%20Plan%2020200928.pdf

Big Sky Fire Department Response - http://g-e-i.net/QUARRY-R1-PP/TAB6/%234-1%20BSFD%20written%20confirmation.pdf

DEQ
Montana Department of Environmental Quality

Memo

TO: Jenny Warren
FROM: Eric Regensburger
DATE: 12/3/22
SUBJECT: The Residential Subdivision at the Quarry #1 (EQ#21-2020)

The Department has completed its determination of significance for this project based on the information received by the Department on May 26, 2022. This determination is made pursuant to the Administrative Rules of Montana (ARM) 17.30.701-718 and 17.30.501-518. The application for determination of non-significance is approved.

This approval is based on the location, dimensions and orientations of the 8 primary and replacement areas as shown in Figures LL-1, LL-2 and Trig-1 submitted on November 16, 2022. The wastewater treatment for each system is a level 2 system, Setpic Net. Each drainfield and the number of single family equivalents that each one will serve is listed below. Additional details for this nonsignificance determination is provided in the included nondegradation checklist.

DRAINFIELD #	# SINGLE FAMILY EQUIVALENTS
1	12
2	12
3	12
4	12
5	10
6	10
7	10
8	12

SUBDIVISION SIGNIFICANCE DETERMINATION CHECKLIST
MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)

Subdivision Name The Residential Subdivision at the Quarry #1

EQ Number #21-2020 **Date Reviewed** December 3, 2022

Reviewer Eric Regensburger **2nd Reviewer** _____

Determination: ___ **Significant** __XX__ **Non-Significant** ___ **Incomplete** rev. 01/2000

Part I: Applicability & Exclusions	**YES/ NO**	**Notes & Basis for decision**
ARM 17.30.701(1) & 75-5-103(9), MCA **1.** Are any high quality waters affected? (Include downstream and downgradient) **If NO, the nondegradation requirements are not applicable.**	YES	
ARM 17.30.702(16) & 17.30.705(1) **2.** New or increased source of pollutants? **If NO, the nondegradation requirements are not applicable.**	YES	
3. Activity categorically excluded under ARM 17.30.716 or 75-5-317, MCA? **If YES, the Activity is Non-Significant.**	NO	
4. Non-Significant under ARM 17.30.715(3)? (Public Notice Required) **If YES, the Activity is Non-Significant.**	NO	
ARM 17.30 sub-chapter 5 **5.** Is this determination contingent upon granting a mixing zone? **If YES, determine if a mixing zone can be granted before going on to Part II. If NO, continue on to Part II.**	NO	Wastewater treatment systems used are SepticNet systems that treat nitrogen to 7.5 mg/L, which is the nondegradation groundwater limit. Therefore, groundwater mixing zones are not required although a well setback envelope is required per the Septic Net level 2 approval. The well setback envelope is the same size and shape as a 500 foot standard groundwater mixing zone. Those setbacks are shown on figure LL-1 (dated 11/15/22) and confirms there are no existing/approved wells within 100 feet of the well setback envelope
Part II: Significance Determination	**YES/ NO**	**Notes & Basis for decision**
ARM 17.30.715(1)(a) **6.** Change in mean monthly flow of the surface water > 15%, or change in 7Q10 flow > 10%.	NO	
ARM 17.30.715(1)(b) **7.** Concentration of carcinogen or parameter with BCF > 300 in discharge greater than receiving water.	NO	
ARM 17.30.715(1)(c) **8.** Increase in toxics or nutrients > trigger value and concentration after mixing > 15% of lowest applicable standard. For nutrients, if the answer is YES, the criteria in question #10 must also be exceeded for the activity to be significant.	NO	Based on measured groundwater flow from at least 3 of the onsite groundwater measuring points (11, 12, B, C and 6) on 15 different dates between 5/7/19 and 9/7/22, the range of groundwater flow direction is N37.3E to N42.4E. Using that range of groundwater flow and the 5 degree dispersion angle used for standard ground water mixing zones (ARM 17.30.517) provided a range of direction for the effluent plumes from each primary and replacement drainfield from N32.3E to N47.4E. Using that range of the effluent plumes (N32.3E and N47.4E), each drainfield is over ¼ mile from the nearest downgradient surface waters (which are unnamed ponds and the Gallatin River). Based on the soil types and corresponding application rate for each drainfield, the drainfields for this project did not have to address trigger

		value to surface water (the unnamed ponds or the Gallatin River) if they were at least ¼ mile upgradient of the those surface waters per section 5.0 of the nondegradation guideline (2015). This analysis used the drainfield location and dimensions submitted on Figures: LL-1, LL-2 and Trig-1, that were submitted on 11/16/22.
ARM 17.30.715(1)(f) **9.** Increase of a harmful parameter > 10% of applicable standard and existing water quality > 40% of applicable standard.	NO	
ARM 17.30.715(1)(g) **10.** Measurable effect on a beneficial use or measurable changes in aquatic life or ecological integrity from a narrative parameter.	NO	
11. Increase in nitrate-nitrogen in groundwater at a mixing zone boundary exceeds that allowed in ARM 17.30.715(1)(d).	NO	
ARM 17.30.715(1)(e) **12.** Increases in phosphorus in groundwater where adsorptive capacity of soils will be exceeded within 50 years and will reach surface water, or the activity does not employ department approved water quality protection practices.	NO	The phosphorus breakthrough calculations to surface waters, including cumulative effects, were calculated and all are several hundreds of years. This analysis used the drainfield location and dimensions submitted on Figures: LL-1, LL-2 and Trig-1, that were submitted on 11/16/22. The depth to limiting layer in the calculations was based on the measured groundwater levels which were relatively consistent over the three years and 15 measurement dates.
13. Significant under ARM 17.30.715(2)?	NO	
If any answer to Questions #6 through #13 is YES, the Activity is Significant (except for question #8 as applied to nutrients).		