

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY  
Environmental Assessment**

**Water Protection Bureau**

**Name of Project:** Yellowstone Mountain Club Snowmaking

**Type of Project:** Reclaimed water snowmaking

**Location of Project:** Eglise Mountain

**City/Town:** Big Sky

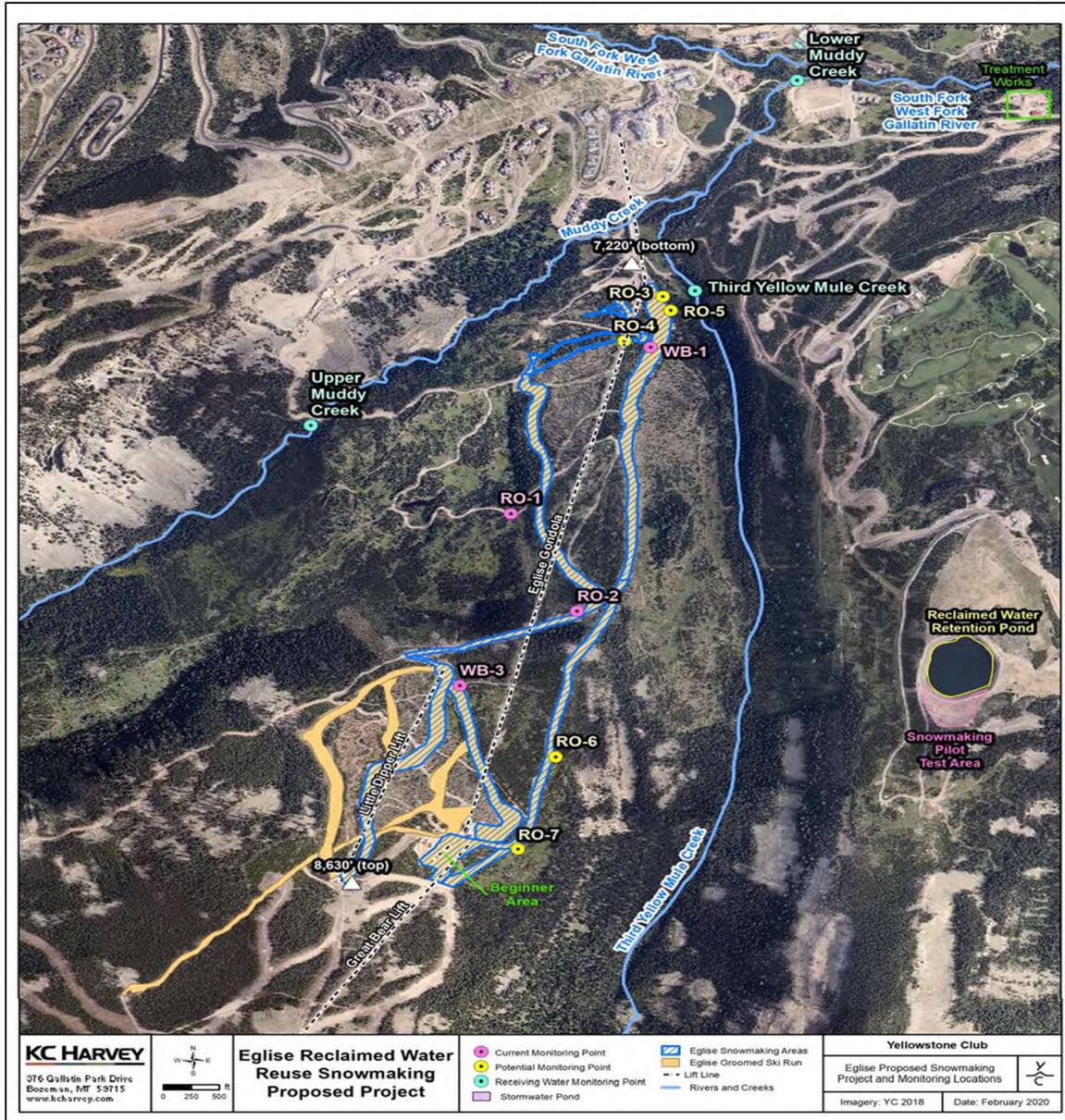
**County:** Madison

**Description of Project:**

Yellowstone Mountain Club, LLC applied for an Montana Pollutant Discharge Elimination System (MPDES) permit to discharge treated municipal wastewater as artificial snow. The Facility is not yet fully developed and constructed. All references to the Facility operations and location in this fact sheet are to the proposed Facility and location as described in the MPDES permit application.

Yellowstone Mountain Club is a 15,200-acre private residential, ski, and golf community located near Big Sky, Montana. The Permittee manages the reuse of reclaimed (treated) domestic wastewater generated by the Yellowstone Club municipal wastewater treatment plant, as well as a portion generated by the Big Sky community treated by the Big Sky County Water and Sewer District (BSCWSD). Treated wastewater is currently land applied at agronomic rates on the permittee's golf course during the growing season. To expand its capacity for reclaimed water reuse, the Permittee proposes to construct and operate a reclaimed water snowmaking campaign to add a basal snowpack for alpine skiing on Eglise Mountain, a ski expansion located on Yellowstone Club owned land and developed in 2016. The proposed project will use existing infrastructure used for summer land application and add new pumping, piping, and snowmaking equipment for the winter discharge to make snow.

The Facility location is in Section 7 in Township 7S, Range 3E near Big Sky, Montana, in Madison County. Facility operations will be located within approximately 150 acres on Eglise Mountain, with snowmaking on approximately 55 acres of ski runs. Elevation ranges from 7,220 to 8,630 feet above sea level. The slopes where snowmaking will occur are generally north facing. A site map is shown in Figure 1 below.



The existing 84 million gallon (MG) reclaimed water retention pond is located to the east of Eglise Mountain and holds reclaimed water from the BSCWSD and the YC treatment works. Reclaimed water from the BSCWSD is pumped uphill via a 7.5-mile-long force main to the YC retention pond to consume approximately 75% to 80% of the pond water volume.

The BSCWSD treats approximately 154.8 million gallons per year (MGY) in a biological nutrient removal plant to remove nitrogen and phosphorous, including filtration and disinfection. The reclaimed water is stored, applied to the local Big Sky golf course, or pumped to the YC or Spanish Peaks holding ponds when on-site storage capacity is limited. The YC treats its wastewater through a 2-Basin Sequencing Batch Reactor (SBR) treatment system. The reclaimed water is then transported to the 84 MG retention pond for storage where it is mixed with reclaimed water from the BSCWSD and applied to the YC golf course as irrigation during

summer months. The same wastewater sources and storage pond will comprise the source of wastewater for the proposed snowmaking project during the winter months. Snowmaking infrastructure will be designed and installed after final DEQ approval of the project. A pipe would carry water from the YC retention pond to Eglise Mountain, and then the water would be pumped up to the proposed project area. Snowmaking machines or snow guns (Techno Alpine TF10) would be used to make artificial snow on the slopes of the ski runs in the proposed Project area (Figure 1).

The Permittee is currently upgrading the capacity of the YC wastewater treatment system to accommodate the full build out of the development. The updates will improve flow and water quality of the system to account for a maximum of 0.25 million gallons per day (MGD) treatment volume. The Permittee is also in the design and permitting phase for installation of a second retention pond with a 40 MG capacity necessary to meet contractual agreements for future storage of BSCWSD treated wastewater. The BSCWSD is currently in the initial stages of upgrading the treatment level of their facility to accommodate an increased population and a higher treatment level to meet Circular DEQ-2 Design Standards for Public Sewage Systems Class A-1 to expand their reuse opportunities. These upgrades are expected to take place in 2022.

Treated wastewater from the YC treatment works is piped to the Permittee's 84 MG retention pond. The contribution from the YC treatment works is currently 7.3 MGY; however, this is expected to increase to approximately 18.3 MGY at full buildout. The BSCWSD pumps water from their reclaimed water holding ponds in the Big Sky Meadow up to the Permittee's retention pond when the demand is necessary on a variable basis. The BSCWSD current contribution to this pond is an estimated annual average of 60 MGY (estimated annual contribution over the last three years).

For snowmaking, treated wastewater from the retention pond will be piped gravity-feed to the bottom of Eglise Mountain and then pumped uphill to the snowmaking guns. The anticipated maximum amount of wastewater used for the entire snowmaking effort will be 25 million gallons. Snowmaking will take place over up to 45 days. Average discharge from the retention pond will therefore average about 0.56 MGD. The stated maximum design flow of the snowmaking system is "< 1,000,000 gallons per day", so wastewater flow will be between 0.56 MDG and 1 MGD when operations are running.

#### **Agency Action and Applicable Regulations:**

The MPDES permit regulates point source discharge of pollutants to state surface waters. The permit includes monitoring requirements and effluent limits to protect the beneficial uses of state surface waters.

The agency action is to issue an MPDES permit to Yellowstone Mountain Clube, LLC for a five-year period.

ARM Title 17, Chapter 30, Sub-chapter 2 – Water Quality Permit Application and Annual Fees.  
ARM Title 17, Chapter 30, Sub-chapter 5 – Mixing Zones in Surface and Ground Water.  
ARM Title 17, Chapter 30, Sub-chapter 6 – Surface Water Quality Standards.

ARM Title 17, Chapter 30, Sub-chapter 7 – Nondegradation of Water Quality.

ARM Title 17, Chapter 30, Sub-chapter 12 – MPDES Effluent Limitations and Standards, Standards of Performance, and Treatment Requirements

ARM Title 17, Chapter 30, Sub-chapter 13 – MPDES Permits

Montana Water Quality Act, MCA 75-5-101 et seq.

**Summary of Issues:**

- Technology-based effluent limitations (TBELs) based on National Secondary Treatment Standards of domestic wastewater have been included in the draft permit. These TBELs include biochemical oxygen demand, total suspended solids, and pH. See Part I.B of the draft permit.
- Extensive instream and surface water runoff sampling plan. See the Fact Sheet and Part I.B of the draft permit.
- The initiative for the proposed project was the outcome of a Big Sky area community initiative, the Big Sky Sustainable Water Solutions Forum. The Forum, comprised of a group of voluntary locally-based stakeholders and representatives from state and local government agencies, was formed to identify water resource challenges of the Big Sky area and make recommendations to address these challenges. Wastewater reuse via snowmaking was identified as one of the priorities for the disposal of wastewater in the Big Sky area and was preferred over the potential direct discharge of wastewater to surface waters or groundwater in the Gallatin River drainage.

**Affected Environment & Impacts of the Proposed Action:**

Y = Impacts may occur.

N = Not present or No significant impact expected.

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
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] The discharge flow into the receiving water body is not expected to have significant adverse impacts on the geology, soil quality or stability. The artificial snowpack will melt at the same rate and within the same timeframe as the natural snowpack.
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] The MPDES permit includes effluent limits, monitoring requirements and other permit conditions that will ensure the water quality standards and beneficial uses are protected. Further, DEQ found that both Third Yellow Mule Creek and Muddy Creek are high quality waters per Montana’s Nondegradation Policy. The proposed discharges were evaluated to ensure the changes in water quality would be nonsignificant. See the Fact Sheet pages 13 through 14 and 29 for further detail.  The proposed project and upgrades to the wastewater facility will also be reviewed under Circular DEQ-2 requirements by the Engineering Bureau.

**IMPACTS ON THE PHYSICAL ENVIRONMENT**

<p>3. AIR QUALITY: Will pollutants or particulates be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[N] Operation of snowguns to generate reclaimed snow is not regulated by air quality regulations. Impacts on air quality resulting from issuance of the MPDES permit will be due to construction dust, which will be short-lived and associated with disturbance during the installation of the discharge pipelines and pumping equipemnt. These short-term impacts are not expected to be significant.</p>
<p>4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?</p>	<p>[N] The Montana Natural Heritage Program identified the plant species of concern (SOC) Low Beardtongue (<i>Penstemon humilis</i>) and the Whitebark Pine tree as species occurrences within a two mile radius of the project (base of Eglise Mountain). The project is in an area that has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within the Yellowstone Mountain Club community. Significant new impacts are not expected.</p>
<p>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[N] Effluent limits and permit conditions will ensure water quality standards for aquatic life are protected. Impacts to terrestrial or avian species are limited to the construction phase of the project when new piping and/or pumping equipment will need to be constructed/installed. The project is in an area that has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within the Yellowstone Mountain Club community. Significant new impacts are not expected.</p>
<p>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?</p>	<p>[N] Six animal and two plant SOC were identified by the Montana Natural Heritage Program as species occurrences within a two-mile radius of the project area: Westslope Cutthroat Trout, Grizzly Bear, Wolverine, Clark’s Nutcracker, Western Toad, Townsend’s Big-eared Bat, Whitebark Pine, and Low Beardtongue. Other observed SOC, Potential SOC (PSOC), or Special Status Species (SSS) without species occurrences include: Cassin’s Finch, Northern Goshawk, Brown Creeper, Rufous Hummingbird, Golden Eagle, Peregrine Falcon, and Bald Eagle. An additional 128 SOC, PSOC or SSS, either plant or animal, are potentially present in the area based on known range, presence of associated habitats, or predictive distribution model output if available.</p> <p>Wetlands are present on the west side of Eglise Mountain. These wetlands were not identified in the permit application as receiving waters for snowmelt from the artificial snowmaking project.</p> <p>The project is in an area that has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within the Yellowstone Mountain Club community. Significant new impacts are not expected.</p>

**IMPACTS ON THE PHYSICAL ENVIRONMENT**

<p>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: <a href="http://dnrc.mt.gov/divisions/cardd/sage-grouse?">http://dnrc.mt.gov/divisions/cardd/sage-grouse?</a> 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.</p>	<p>[N] The Department has verified the facility is not within core, general, or connectivity sage grouse habitat.</p>
<p>8. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?</p>	<p>[N] No known historical or archaeological sites are present.</p>
<p>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?</p>	<p>[N] The project is located within an already established ski area and residential community. No impacts are expected.</p>
<p>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)</p>	<p>[N] The project will use reclaimed wastewater as it source. Upgrades to powerlines or other energy sources will be reviewed by the DEQ Engineering Bureau as required by DEQ-2 and applicable administrative rules. The project is in an area that has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within Yellowstone Mountain Club community. Significant new impacts and cumulative impacts with the DEQ-2 review are not expected.</p>
<p>11. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?</p>	<p>[N] At present, there are no other nearby activities that would affect the project.</p>

**IMPACTS ON THE HUMAN ENVIRONMENT**

RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
<p>12. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?</p>	<p>[N] Effluent limits and permit conditions, including disinfection of snowmaking water will ensure water quality standards are met and human health is protected.</p>
<p>13. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?</p>	<p>[N] The permitted outfalls and discharge are not expected to significantly add to or alter industrial, commercial, and agricultural activities and production in the area.</p>
<p>14. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[N] Permanent job creation or elimination is expected. Any new jobs created would likely be short term. No significant impacts.</p>
<p>15. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?</p>	<p>[N] No significant impacts expected.</p>

**IMPACTS ON THE HUMAN ENVIRONMENT**

RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
16. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N] The facility is associated with an existing ski resort and community. 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] Applicant must 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] The project is adjacent to wilderness and recreational areas. The project area has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within the Yellowstone Mountain Club community. Significant new impacts are not expected.
19. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N] The project area has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within the Yellowstone Mountain Club community. Significant new impacts are not expected.
20. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N] The project area has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within the Yellowstone Mountain Club community. Significant new impacts are not expected.
21. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N] The project area has already undergone disturbance by the construction and operation of the ski area, golf course, and associated roads, pipelines, and homes within the Yellowstone Mountain Club community. Significant new impacts are not expected.
22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N]
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]
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]

<b>IMPACTS ON THE HUMAN ENVIRONMENT</b>	
<b>RESOURCE</b>	<b>[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
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]

24. Description of and Impacts of other Alternatives Considered:

No action alternative: Deny issuance of the permit. Permit denial would require the applicant and the Big Sky Community Water and Sewer District to find other alternatives for effluent disposal, including potential direct discharge to the Gallatin River.

25. Summary of Magnitude and Significance of Potential Impacts:

The discharge as artificial snow and resulting snowmelt are regulated by the conditions of the proposed permit. The permit conditions ensure that all beneficial uses of the receiving water are protected and the discharge will not cause significant changes in existing water quality. The Department has determined no significant adverse impacts to the physical or human environment associated with the permitted discharge of effluent or construction of the outfalls as described in the MPDES permit application will occur.

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.

There are no other permitted discharges to Muddy Creek or Third Yellow Mule Creek and the permit conditions ensure there will be no significant changes to existing water quality associated with issuance of the MPDES Permit. The nearest permitted discharges in the Gallatin River watershed are ground water discharges from subdivisions in the Big Sky community, located several miles downstream of the proposed snowmaking site. There are no known cumulative effects from these discharges.

27. Preferred Action Alternative and Rationale:

The preferred action is to issue the MPDES permit. This action is preferred because the permit program provides the regulatory mechanism for protecting water quality by enforcing the terms of the MPDES permit.

**Recommendation for Further Environmental Analysis:**

EIS     More Detailed EA     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 to the human and physical environment based on the following criteria in ARM 17.4.608(1)(a) through (g):

- (a) the severity, duration, geographic extent, and frequency of occurrence of the impact;
- (b) the probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- (c) growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
- (d) the quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- (e) the importance to the state and to society of each environmental resource or value that would be affected;
- (f) any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- (g) potential conflict with local, state, or federal laws, requirements, or formal plans.

As described above, DEQ's decision to issue MPDES Permit No. MT0032051 authorizes discharge of treated wastewater as man-made snow to ski slopes on Eglise Mountain. The discharges and subsequent snowmelt runoff are subject to permit conditions and limitations that will protect beneficial uses and prevent significant changes in water quality. The impacts from construction of the discharge piping and pumping equipment may result in dust but are expected to be of short duration and not significant.

Environmental impacts resulting from issuance of the MPDES permit are localized and will be managed through permit conditions and limitations. At the time of this analysis, there are no known conflicts with local, state, or federal laws, requirements, or plans.

28. Public Involvement:

A 30-day public comment period will be held.

29. Persons and agencies consulted in the preparation of this analysis:

Montana Heritage Program Species of Concern Report

**EA Prepared By:**

DEQ Water Protection Bureau, March 2021

**Approved By:**



---

Jon Kenning, Chief  
Water Protection Bureau

June 7, 2021  
Date