

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER PROTECTION BUREAU  
Metcalf Building, Helena, Montana 59620  
(406) 444-3080**

**ENVIRONMENTAL ASSESSMENT (EA)**

**Division/Bureau:** Permitting & Compliance Division, MGWPCS Permits;

**Project or Application:** Chico Hot Springs Resort and Day Spa; MTX000105

**Description of Project:** The permit renewal authorizes the discharge of treated residential-strength domestic wastewater from the Chico Hot Springs Resort and Day Spa (CHSR). This is a conventional wastewater treatment system that collects, treats, and disposes of an effluent daily design flow of 11,370 gallons per day (gpd) from the hotel, bar, restaurant, and convention center serving a maximum daily capacity of 227 people. CHSR is located south of Livingston, in the Paradise Valley. Raw sewage and wastewater is collected in several individual septic tanks at buildings located throughout the resort. Floatable and settleable solids are removed in the septic tanks. These tanks gravity-drain to a lift station with a valve pit/flow distribution vault that goes to four force mains. The force mains pump the wastewater to a dose tank that gravity-doses the subsurface drainfields. The drainfields consist of four zones, each with 44 laterals that are 155 feet long. Four totalizing flow meters measure the effluent flow prior to discharging to the drainfields. A standard 500-foot ground water mixing zone is requested for Outfall 001. Two ground water monitoring wells (1 nest) are located at the hydraulically downgradient boundary of the mixing zone. The location of Outfall 001 is 45° 20' 22" North Latitude and 110° 41' 33" West Longitude. Discharge is to ground water, which is classified "Class I" according to the Montana Ground Water Quality Standards and Beneficial Uses.

**Benefits and Purpose of Proposal:**

Treatment of domestic wastewater before discharging to ground water.

**Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:**

None

**Listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by this or another government agency:**

See Statement of Basis

**Affected Environment and Effects from the Proposed Project:**

<u>Key to Rank</u>	
NA	<i>Not applicable</i>
N	<i>No effects</i>
B	<i>Potentially beneficial effect</i>
A	<i>Potentially adverse effects</i>
M	<i>Corrective action required</i>
P	<i>Additional permits will be required</i>

Rank	Consideration	Remarks
<b>PHYSICAL AND BIOLOGICAL ENVIRONMENT</b>		
N	1. SOIL SUITABILITY, TOPOGRAPHIC AND/OR GEOLOGIC CONSTRAINTS (soil moisture, unstable soils or geologic conditions, steep slopes, erosion potential, subsidence potential, seismic activity)	Discharge will increase moisture in the unsaturated zone. No low permeability layers exist between the subsurface drainfields and the shallow ground water. There are no known unique geological features at the site. There is no indication following 5 years of permitted discharge that the site of the wastewater treatment system has become unstable due to the construction and/or the operation of the system.

N	2.	HAZARDOUS FACILITIES (power lines, hazardous waste sites, distances from explosive and flammable hazards including chemical/petroleum storage tanks, underground fuel storage tanks and related facilities such as natural gas storage facilities and propane tanks)	
N	3.	AIR QUALITY (effects to or from project, dust, odors, emissions)	No significant impacts have been determined.
N	4.	GROUNDWATER RESOURCES & AQUIFERS (quality/nondegradation, quantity/reliability, distribution, uses/rights, number of aquifers, mixing zones)	There will be no significant degradation outside of the mixing zone for Outfall 001 (see Statement of Basis for details and calculations). No ground water monitoring is required in the permit renewal.
N	5.	SURFACE WATER RESOURCES (quality/nondegradation, quantity/reliability, distribution, uses/rights, storm water controls, source of community supply, community treatment, mixing zones)	The nearest hydraulically downgradient (N50°W) surface water (approximately 4,000 feet) from Outfall 001 is an unnamed perennial tributary that flows into Emigrant Creek. Impacts to surface waters were determined nonsignificant (see Statement of Basis for details and calculations).
N	6.	VEGETATION AND WILDLIFE SPECIES AND HABITATS, INCLUDING FISHERIES AND AQUATIC RESOURCES (threatened, endangered, sensitive species, prime habitat, population stability, potential for human wildlife conflicts, effectiveness of post-disturbance plans)	The ground surface above the drainfield consists of natural sagebrush and field grass.
N	7.	UNIQUE, ENDANGERED, FRAGILE, OR LIMITED ENVIRONMENTAL RESOURCES (biologic, topographic, wetlands (within one mile), floodplains (within one mile), scenic rivers, natural resource areas, etc.)	
N	8.	LAND USE (waste disposal, agricultural lands [grazing, cropland, forest lands, prime farmland], recreational lands [waterways, parks, playgrounds, open space, federal lands), access, commercial and industrial facilities [production & activity, growth or decline], growth, land-use change, development activity)	The drainfield area provides a naturally vegetated, open area for wildlife.
N	9.	HISTORICAL, CULTURAL, & ARCHEOLOGICAL (sites, facilities, uniqueness, diversity)	No new construction is associated with this permit renewal.
N	10.	AESTHETICS (visual quality, nuisances, odors, noise)	The septic tanks and drainfield are below ground. Effluent from Outfall 001 is discharged to the subsurface drainfields. There are no known aesthetic issues.
N	11.	DEMANDS ON OR CHANGES IN ENVIRONMENTAL RESOURCES INCLUDING LAND, WATER, AIR, OR ENERGY USE (need for new or upgraded energy sources, potential for recycling, etc.) {See (4), (5), and (8).}	Potable water is provided from a spring located approximately 1,600 feet south of the establishment. Perforated collection laterals establish this as a ground water source. The spring is monitored in accordance with the Pubic Water Supply Bureau under MT0001564.

Rank	Consideration	Remarks
<b>IMPACTS ON THE HUMAN POPULATION</b>		
NA	12. CHANGES IN DEMOGRAPHIC CHARACTERISTICS (population quantity, distribution and density, rate of change)	No changes in the facility are associated with this permit renewal.

N	13.	GENERAL HOUSING CONDITIONS (quality, quantity and affordability)	This facility consists of the main lodge, the lower lodge, a 13-room hotel, and a convention center.
NA	14.	POTENTIAL FOR DISPLACEMENT OR RELOCATION OF BUSINESS OR RESIDENTS	
N	15.	PUBLIC HEALTH AND SAFETY (medical services and facilities, police, fire protection and hazards [see (2)], emergency medical services [see (8), LAND USE for waste disposal])	
N	16.	LOCAL EMPLOYMENT AND INCOME PATTERNS (quantity and distribution of employment, economic impact)	
NA	17.	LOCAL AND STATE TAX BASE AND REVENUES	
NA	18.	EFFECTS ON SOCIAL STRUCTURES AND MORES (social conventions/standards of social conduct), DEMANDS ON SOCIAL SERVICES (law enforcement, educational facilities [libraries, schools, colleges, universities], welfare, etc.)	
N	19.	TRANSPORTATION NETWORK (condition and use of roads, traffic flow conflicts, rail, airport compatibility, etc.)	
N	20.	CONSISTENCY WITH LOCAL ORDINANCES, RESOLUTIONS, OR PLANS (conformance with local comprehensive plans, zoning or capital improvement plans)	
NA	21.	REGULATORY RESTRICTIONS ON PRIVATE PROPERTY RIGHTS ( <i>Are we regulating pursuant to a police power? Does the Agency action restrict the use of the property beyond the minimum necessary to achieve compliance with the Act? What are the costs of such additional restrictions resulting from proposed permit conditions? Are there other, less restrictive ways of achieving the same goal? See your assigned legal counsel for assistance preparing this section. [See the Private Property Assessment Act checklist accompanying this permit for details.]</i> )	

**Other groups or governmental agencies contacted or which may have overlapping jurisdiction:**  
Public Water Supply

**Public Involvement:**  
Thirty-day public comment period

**Individuals or groups contributing to this EA:**  
Greg Saks with Chico

**Summary of Issues:**  
See Statement of Basis

**Summary of Potential Effects:**

See Statement of Basis

**Cumulative Effects:**

There are no unresolved analyses for cumulative effects.

**Recommendation:**

Issue Ground Water Discharge permit renewal

**Recommendation for Further Environmental Analysis:**

Prepare an EIS

Prepare a more detailed EA

No further analysis

EA prepared by: Pat Potts

Date: June 17, 2009

**Bureau Check-off**

AWMB \_\_\_\_\_

CSB \_\_\_\_\_

EMB \_\_\_\_\_

IEMB \_\_\_\_\_

WPB \_\_\_\_\_

Other \_\_\_\_\_

**Approved by:**

Jenny Chambers, Bureau Chief  
Water Protection Bureau  
Permitting & Compliance Division

\_\_\_\_\_  
(Print name and title)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)