



October 5, 2022

Joe Robbins Architect
P.O. Box 771403
Steamboat Springs, CO 80477

Job Number: 20-11733

Subject: On-Site Wastewater Treatment
System Design Update, Home Ranch,
27250 Home Ranch Road, Routt County,
Colorado.

Joe,

This report presents the results of an On-site Wastewater Treatment System (OWTS) Design Update for the Home Ranch located at 27250 Home Ranch Road in Routt County, Colorado. The OWTS design was completed under this job number in a report dated September 23, 2021.

LODGE/TRAINER RESIDENCE/FACILITIES: It is our understanding, based on our conversations with the contractor Paul Stoll of Snake River Construction that modifications have been made to the plans for the Home Ranch Complex. The new Owner's Residence has been eliminated and the Lodge was demolished and the Owner's Residence with two bedrooms will be included in the Lodge building. The Trainer's Residence with three bedrooms may be constructed in the future. The proposed new shop has been eliminated and the existing two buildings will be used as the shop/maintenance buildings. The new greenhouse is currently under construction and a small bathroom has been added to the barn located east of the riding arena. A Headquarters Office Building will be constructed with a bathroom and office space to the west of the Lodge and south of the Maintenance Buildings. The bathroom in the Headquarters Building will likely be used by staff and/or the owners. No additional wastewater flow is anticipated with the addition of this bathroom.

The lodge will be used to host events for up to 18 people that will be staying in the cabins. A commercial kitchen will be located in the new lodge. Based on conversations with the architect and ranch manager, NWCC understands that 10 to 15 employees will be at the site during each day and will use the facilities in the shop, greenhouse and barn.

CABINS OWTS : Five of the existing cabins will be partially renovated to include a total of 7 guest rooms. A future cabin may be constructed with an additional two guest rooms. These cabins will not have kitchen facilities, only bathrooms. The existing Columbine Cabin is being remodeled to have a total of three bedrooms when completed. A residential kitchen will also be included in the Columbine Cabin. An Outhouse Building will also be constructed near the corral and outdoor arena. The Outhouse Building will

primarily be used by cabin guests using the arena area. NWCC does not anticipate additional flows generated by the guests using the Outhouse Building.

EXISTING CONDITIONS: Currently two separate OWTS are under construction at the site, per our previous design. One OWTS will be constructed for the new Lodge/Owner's and Trainer's Residences, as well as the Headquarters Building, Shop, Barn and Greenhouse structures. The Soil Treatment Area (STA) for the first system will be located northwest of the new Owner's Residence and Lodge, west of the shop and south of the existing STA for the facility. The second OWTS will be constructed for the existing and renovated cabins, as well as the Outhouse building, in the eastern portion of the site. The STA for the second OWTS will be located northwest of the existing Columbine Cabin and northeast of the existing Lodge. A site plan with the updated facilities is shown in Figure #1.

Based on our calculations, presented in Appendix A, no increase of wastewater flows are anticipated from the changes in the proposed construction. The wastewater flow for the system for the Lodge will be reduced with the elimination of the Owner's Residence. No modifications to the size of the proposed sand filter treatment areas (SFTA) is required.

Based on discussions with the contractor, the SFTA for the cabins will be moved approximately 200 feet north since the area where the SFTA was originally proposed will be used during ranch operations. Two additional test pits were advanced in the area of the new SFTA. The soils encountered in the test pits consisted of 30 inches of topsoil and organic materials overlying natural clays to the maximum depth investigated, 8 feet below the existing ground surface. The soil conditions are similar to those encountered in the original design; therefore, no modifications to the size of the system are required.

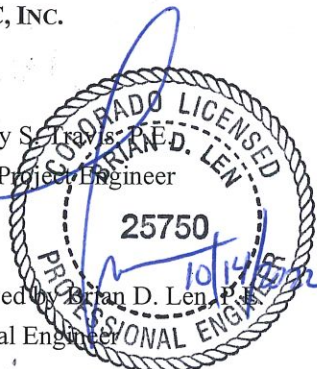
An additional 1,000-gallon two compartment septic tank will be added for the bathroom in the barn. The effluent from the barn will be pumped to the dosing tank at the Lodge SFTA. The effluent from the Headquarters Building will flow to the septic tank for the shop/maintenance buildings. A 1,000-gallon two compartment septic tank will be added for the Outhouse Building. The effluent will be pumped to the dosing tank at the Cabin SFTA.

If you have any questions concerning this report, or if we may be of further service, please contact this office.

Sincerely,
NWCC, INC.

Timothy S. Travis, P.E.
Senior Project Engineer

Reviewed by Brian D. Len, P.E.
Principal Engineer



APPENDIX A

SUMMARY OF DESIGN CALCULATIONS

A. Wastewater Volume Calculations-System 1

- 1) Lodge/Owner's Residence: 2 Bedroom @ 150 gpd/bedroom: 300 gpd
- 2) Trainer's Residence: 3 Bedroom @ 150 gpd/bedroom: 450 gpd
- 3) Lodge-Events: 18 people @ 25 gpd/person: 450 gpd
- 5) Shop/Barn/HQ/Greenhouse: 15 employees @ 20 gpd/employee: 300 gpd
- 6) Design Flow Q = 1,500 gpd

B. Wastewater Volume Calculations-System 2

- 1) Columbine Cabin: 3 Bedroom @ 150 gpd/bedroom: 450 gpd
- 2) Existing Cabins: 7 Guest Rooms x 2 people/room @ 50 gpd/person: 700 gpd
- 3) Future Cabin: 2 Guest Rooms x 2 people/room @ 50 gpd/person: 200 gpd
- 4) Design Flow Q = 1,350 gpd