United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Colorado State Office
2850 Youngfield Street
Lakewood, Colorado 80215-7210

In Reply Refer To:
7250 (CO-932)

DRAFT RECOMMENDATION LETTER – SUBJECT TO CHANGE

Mr. Rob Viehl
Colorado Water Conservation Board
1313 Sherman Street, Room 721
Denver, Colorado 80203

Dear Mr Viehl:

The Bureau of Land Management (BLM) is writing this letter to formally communicate its recommendation for a natural lake level water right on Hack Lake, located in Water Division 5.

Location and Land Status. Hack Lake is located close to the southeast boundary of the Flattops Wilderness Area, approximately 12 miles northeast of Dotsero in the headwaters of the Hack Creek watershed. The lake is located within the NE ¼ SE ¼, Section 3, T3S R87W, Sixth P.M. and the lake surface is bounded by the following GPS lines: West UTMx = 316760; East UTMx = 316920; South UTMy = 4409950; North UTMy = 4410060. The entire lake is located on public lands managed by BLM.

Biological Summary. Hack Lake is a cold water, high-altitude lake with a surface area of 1.29 acres. The mean depth of the lake at full pool is 6.4 feet with a maximum depth of 12.2 feet. The lake is continuously fed by a series of perennial springs located on the north shore of the lake, which maintain water quality in a suitable range for salmonids. The lake is located within porous volcanic geology, which facilitates groundwater inflow to the lake and surface water outflow through the bed of the lake.

Hack Lake supports cutthroat trout that are stocked periodically by Colorado Parks and Wildlife (CPW). The lake does not currently support natural recruitment of cutthroat trout because of the lack of suitable spawning areas. However, BLM and CPW are considering minor modification of the lakebed to provide a suitable spawning area. Protection of water levels is a prerequisite for further investments in habitat improvements. A spot survey of the lake revealed populations of mayflies and caddisfly, which serve as a primary food source for the trout population.

Water quality is suitable for long-term maintenance of trout populations. BLM collected water quality data in September 2021 that documented a pH of 8.69, water temperature of 9.7° Celsius, salinity of 0.1 parts per thousand, and specific conductivity of 77.

Hack Lake supports a riparian community comprised of willows, red-osier dogwood, aspen, twinberry, and sedges. The water supply and riparian vegetation attract heavy usage of the site by terrestrial wildlife, including deer, elk, bear, and mountain lion.

Hydrologic Analysis. A bathymetric survey and spring discharge survey were completed to support this recommendation.

CPW completed a bathymetric survey on September 23, 2021. A report describing the methodology used and survey results is provided as an attachment to this recommendation. The survey determined that at full pool, the lake stores 8.92 acre-feet of water. The bathymetric survey contains a stage-discharge table that enables the user to estimate the current volume of water in storage based upon various lake elevations.

BLM conducted a discharge measurement of the largest spring orifices on the north shore of the lake in September 2021. Total discharge from the three orifices was 140.22 gallons per minute. BLM notes that the Hack Lake watershed was in extreme drought condition at the time the discharge measurement was taken, and spring discharge was lowest ever observed by BLM staff.

BLM recommends that any quantity of water stored in Hack Lake, up to the full pool elevation of 9875.0 feet and up to 8.92 acre-feet of storage, be protected with a natural lake level water right.

Water Availability. The surface water elevation of Hack Lake varies throughout the year because of changing inflow rates and evapotranspiration rates. The lake is typically at full pool during the snowmelt runoff season, and then surface water elevation gradually recedes during the summer and fall as inflow from the springs located on the north shore of the lake decreases and as evapotranspiration from the lake increases.

At the time of the bathymetric survey described above, the surface water elevation of the lake was 2.9 feet below full pool. This is the lowest water level ever observed by BLM staff at the lake, and the water level is likely a response to severe drought.

BLM is not aware of any surface water diversions or groundwater diversions that are presently affecting the natural lake level.

Relationship to Land Management Plans. Maintenance of a natural lake level at Hack Lake is important to BLM for multiple reasons.

Hack Lake is located along the Johnny Meyer Trail, a major recreation access route to the Flattops Wilderness. BLM maintains a trailhead and camping area to support the use of this trail and Hack Lake. The fishing, wildlife viewing, and scenic viewing opportunities at Hack Lake are one of the key factors driving visitation.

Maintenance of a natural lake level is also important for meeting BLM's wildlife habitat management objectives. BLM has committed to CPW that it will maintain this habitat for fishing opportunities and to provide a critical perennial water source for terrestrial

wildlife use. BLM also wishes to protect water availability for future wildlife habitat projects at the lake, which might include reclamation of the lake to introduce Colorado River Cutthroat Trout.

Information concerning the bathymetric survey, spring discharge, and fishery survey, as well as photographs, were included with BLM's draft recommendation in February 2022. BLM thanks both Colorado Parks and Wildlife and the Colorado Water Conservation Board for their cooperation in this effort.

If you have any questions regarding our instream flow recommendation, please contact Roy Smith at 303-239-3940.

Sincerely,

Alan Bittner
Deputy State Director, Resources

Cc: Larry Sandoval, Colorado River Valley Field Office
Tom Fresques, Upper Colorado River District
Greg Larson, Upper Colorado River District