

Joshua Ball

From: Joshua Ball
Sent: Thursday, June 17, 2021 3:43 PM
To: Kohlhepp, Gary (DEQ) (KOHLHEPPG@michigan.gov); Elle Gulotty; Scott Hicks; Gene Mensch; jimghoistbasin@gmail.com
Cc: Virgil E. Schlorke; Matthew Annala; GenerationAdmin
Subject: Dead River Dry Year Consultation -Silver Lake Development - Start

Good Afternoon All,

As the warm weather around the Dead River Watershed begins, headwater elevations are beginning to see the effects of water level decreases caused by less than average inflows and evaporation. Due to the below average snow received over the 2020/21 winter, the Silver Lake Storage Basin was already starting the summer well below the target headwater elevations. On June 17th, UPPCO operators on site at the Silver Lake Storage Basin observed elevations of 1480.48 feet, which is below the license minimum requirement of 1480.5 feet for the month of June, thus starting the dry year consultation process.

As specified in the March 11, 2010 Order Modifying and Approving Article 405 of the Dead River License, Direct Order E states:

"If reservoir inflow is insufficient to maintain minimum reservoir elevation requirements at any of the project developments, the licensee shall implement the dry year consultation process. The licensee shall consult with the Michigan Department of Environmental Quality, Michigan Department of Natural Resources, U.S. Fish and Wildlife Service, Keweenaw Bay Indian Community, and Dead River Campers, Inc. to determine appropriate temporary modifications to the operating requirements of Articles 402 and 403 of the project license. The licensee shall begin the dry year consultation process no later than the first business day following the day when a reservoir decreases below the required minimum elevation due to low inflow conditions."

Based on the long term (30 day) forecast of higher than average temperatures and average precipitation (https://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead14/), **UPPCO suggests lowering the Silver Lake Storage Basin outflows to 10 cfs for the remainder of June.** Currently, the minimum flow requirement for the month of June is 15 cfs, which UPPCO has been operating at since June 1st. As a reference, the minimum flow requirement drops to 10 cfs for the months of July, August and September.

The June minimum headwater elevation requirement is 1480.5 feet. As a reference, the minimum elevation drops to 1480.0 feet for July and 1479.0 feet for the months of August, September and October.

Based on flow calculations and volume data of the Silver Lake Storage Basin, UPPCO estimated the current inflows into the storage basin at 8-11 cfs. By reducing to 10 cfs and relying on the prediction of average precipitation, we may be able to hold Silver Lake above the remaining minimum elevation levels.

If you feel a conference call is needed to discuss details further, please let me know can I can arrange something for the group. UPPCO will be closely monitoring the levels at both the Silver Lake and Hoist Storage Basins and will keep the group updated as we approach any other low water trigger points (specifically the Hoist Storage Basin). I will send out an update email each week on Mondays with the current status of storage basin levels and flows while under dry year consultation parameters.

Please provide comments as soon as you are able on the proposal to operate under the dry year consultation parameters discussed above at the Silver Lake Storage Basis, as UPPCO cannot make any operations changes without consent from everyone in the group.

As always if there are any questions please feel free to reach out.

Regards,

Josh Ball

Generation Supervisor

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Joshua Ball

From: James Grundstrom <jimghoistbasin@gmail.com>
Sent: Sunday, June 20, 2021 11:09 AM
To: Joshua Ball
Cc: Kohlhepp, Gary (DEQ) (KOHLHEPPG@michigan.gov); Elle Gulotty; Scott Hicks; Gene Mensch; Virgil E. Schlorke; Matthew Annala; GenerationAdmin
Subject: Re: Dead River Dry Year Consultation -Silver Lake Development - Start

WARNING: This email was sent from an external address. Exercise caution when opening links or attachments.

On behalf of Dead River Campers, Inc we would like to respectfully ask for as much water elevation preservation as possible, and hope for the missing summer rains to provide supplemental water for both Silver Lake and the Hoist Storage Basin. Thank you for the opportunity. Jim grundstrom

Sent from my iPhone

Joshua Ball

From: Joshua Ball
Sent: Monday, June 21, 2021 12:12 PM
To: Kohlhepp, Gary (DEQ) (KOHLHEPPG@michigan.gov); Elle Gulotty; Scott Hicks; Gene Mensch; jimghoistbasin@gmail.com
Cc: Virgil E. Schlorke; Matthew Annala; GenerationAdmin; Joshua Ball
Subject: Dead River Dry Year Consultation -Silver Lake Development - 6/21/21 Update

Good Afternoon All,

Since last week's email, elevations continued to decline at both the Silver Lake and Hoist Storage Reservoirs. It is currently raining within the Dead River watershed, however the rain has not been significant enough yet provide stability to the storage basin levels. The 10 day forecast (<https://www.wunderground.com/forecast/us/mi/negaunee/KMINEGAU3shows>) predicts cooler weather and minor precipitation. Below are the current water levels across the Dead River:

Silver Lake: 1480.38'
Hoist: 1340.98'
McClure: 1196.05'

One email response has been received in regards to the proposal to operate the Dead River Silver Lake project under dry year consultation parameters. At this time, UPPCO is unable to make operations changes to deviate from operating at the license minimum flows until all agencies provide comments.

UPPCO has been seeing a decline in available water across all our facilities, and has concern with inflows this low and this early in the summer. Based on the conditions being observed in the Western United States and the 3 month forecasts showing higher than average temperatures and average precipitation for our operating areas, UPPCO is preparing for limited water available at all locations. With this said, please start discussions within your groups on how we can collectively agree to balance the minimum flow requirements, headwater elevations and water quality parameters at the various UPPCO sites.

As a reference, below are the guidelines and operational changes that have been used in previous dry year periods across the Dead River facilities:

Silver Lake:

- Minimum Flow: Remain at license required minimums
- Headwater Elevation: No changes to targets or headwater minimums, but elevation was allowed to trend according to available water, while maintaining required minimum flows.

Hoist:

- Minimum Flow: Reduced to 80 CFS
- Headwater Elevation: No changes to targets or headwater minimums, but elevation was allowed to trend according to available water, while maintaining new minimum flow of 80 cfs.

McClure:

- Minimum Powerhouse Flow: Reduced to 70 CFS
- Siphon Flow: Reduced to 10 CFS
- Headwater Elevation: No changes to elevation limits

Please keep in mind that operation of Hoist and McClure generators below the above flows (80/70 cfs respectively) will result in physical damage to the units due to cavitation.

If you have any questions please feel free reach out, otherwise the next update for the Silver Lake dry year period will be send on 6/28/21.

Regards,

Josh Ball

Generation Supervisor

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Joshua Ball

From: Joshua Ball
Sent: Monday, June 28, 2021 5:22 PM
To: Kohlhepp, Gary (DEQ) (KOHLHEPPG@michigan.gov); Elle Gulotty; Scott Hicks; Gene Mensch; jimghoistbasin@gmail.com; ClementsD3@michigan.gov
Cc: Virgil E. Schlorke; Matthew Annala; GenerationAdmin
Subject: Re: Dead River Dry Year Consultation -Silver Lake Development - 6/28/21 Update

Good evening all,

No changes over the last week as headwater leveled continue to decline across the Dead River project. Current levels as of 17:00 this evening:

Silver Lake: 1480.31
Hoist: 1340.87
McClure: 1195.83

Per the license, flows will be reduced from 15 cfs to 10 cfs on Thursday July 1st. Hopefully this will help sustain levels at the Silver Lake Storage Basin, and keep us above the July minimum of 1480.0 feet.

Due to the 4th of July Holiday being observed on Monday July 5th, the next update for the Silver Lake dry year period will be sent on Tuesday July 6th.

Have a safe 4th of July weekend.

Josh Ball

Sent from my iPhone. Please excuse any spelling errors.

Joshua Ball

From: Joshua Ball
Sent: Tuesday, July 06, 2021 11:17 AM
To: Kohlhepp, Gary (DEQ) (KOHLHEPPG@michigan.gov); Elle Gulotty; Scott Hicks; Gene Mensch; jimghoistbasin@gmail.com; ClementsD3@michigan.gov
Cc: Virgil E. Schlorke; Matthew Annala; GenerationAdmin; Joshua Ball
Subject: Dead River Dry Year Consultation - Silver Lake Development - 7/6/21 END

Good Morning all,

Due to the license minimum elevation change to 1480.0 for the month of July, the Silver Lake Storage Basin Dry Year Consultation period has ended. Current headwater elevations are:

Silver Lake: 1480.25
Hoist: 1340.69
McClure: 1195.93

UPPCO will be closely monitoring all sites moving forward as the long term forecast continues to match the above average temperatures and average to below average precipitation as seen over the last few weeks. Current trends indicate that dry year consultation parameters will be reached at the Silver Lake Storage Basin and the Dead River Storage Basin (Hoist) in the near future. As discussed and outlined in previous emails, please work within you groups to have some ideas on how to approach the next dry year consultation period to best manage the available water to balance water quality, reservoir levels and outflows/generation.

If the group would like to have a discussion to develop operations parameters based on trigger points for the remainder of the summer, please send me an email. If enough parties are interested in taking a proactive approach to conserve the available water with a contingency plan for the next time dry year parameters are met, I can set up a phone conference.

This will be the last email update for the Silver Lake Storage Basin dry year period.

Regards,

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