

## 2023 Twin Lake Trigger Water Levels Management

Triggers	Date <b>2023</b>	UTL Storage Ft/m	TP Storage Ft/m	LTL Vertical Water Level Ft/m	
<b>Snowpack</b> /Precipitation	Mar.1 124% N for S. OK. By Rivers Forecast	-.1'/.33m below WCG	-.1'/.33m below WCG From fall measure	<b>15.75/4.8m</b>	Data logger working Mar.27
<b>LTL ice off</b>	<b>Apr 18</b>	<b>1.15'/.35m</b>	Snow covered	15.13' /4.6m	
<b>DL 1469s culverts ice out</b>	<b>Apr 12</b>	<b>1.48'/.45m</b>	Snow covered	<b>15.14/4.6m</b>	
<b>Water into UTL</b>	<b>April 27</b>	<b>1.1'/.34m</b>	<b>.3'/.1m</b>	<b>15.11'/4.6m</b>	.
<b>Water over UTL spillway</b>	<b>May 3</b>	<b>2.3'/.7m</b> 2 days before was .4m	<b>.33'/.1m</b>	<b>15.09'/4.59m. May 4 pm -&gt; 8inch over spillway</b>	Rain ++Horn Creek at upper culverts raging
<b>Water into LTL</b>	<b>May 4</b>	<b>8 in. water over spillway.</b>	<b>WCG under water &amp; ½ grate covered.</b>	15.26'/4.66m Big flow into LTL. May 5 LTL up 15 in.	
<b>Horn Creek stops</b>	<b>June 10</b>	<b>3.2'/.98m</b> ¼ " over spillway	<b>2.29'/.7m</b>	<b>18.35'/5.59m. Jun rain++</b>	Jun 21 - ½"rain 2 days. 1"rain Jun 23
<b>Spillway Stops</b>	<b>Jul 3</b>	<b>3.2'/.98m</b>	<b>2.2'/.68m</b>	<b>17.9'/5.4m</b>	Peaked at 8" over May 4.
<b>Water to LTL stops</b>	<b>Dec 23</b>	<b>.66'/.2m</b>	<b>1.6'/.48m</b>	<b>17.1'/5.2m</b>	Debris not cleared at Eastview Rd culvert.
<b>Culvert Open Culvert Shut At dam</b>	<b>Aug 23 Dec. 16</b>	<b>2.29'/.7m -.1'/.03m</b>	<b>1.9/.59m 1.87/.57m</b>	<b>17.51/5.33 17.1'/5.21</b>	
<b>LTL Peak</b>	<b>May 29</b>	<b>3.1'/.95m &amp; 1/2 in. over spillway</b>	<b>2.29'/.7m</b>	<b>18.46'/5.6m new fortis meter</b>	SOME LIQUIFICATION STRATA DRIVEWAY
<b>Ice -on open water at inlet until mid-Jan.2024</b>	<b>Dec 26 2 N.bays</b>	<b>.66'/.2m</b>	<b>1.6'/.48m</b>	<b>17'/5.2m</b>	No data logger Dec.8 -Mar/24
<b>Pump on</b>	<b>May 24 to Aug 18. Sept 26 to Dec 13</b>	<b>3.12/.95m 2.5/.78m 1.2 /.375m NO Asses</b>	<b>3.0/.9m 1.6 /.48m No asses No Asses</b>	<b>18.4/5.6m 17.5/5.3m Aug.18  17.6/5.2m Sept 26</b>	Pump off Aug 18 to Sept 26 due to fire N.E.TL
<b>Pump off</b>	<b>Dec 13</b>			<b>17.12'/5.2m No data logger Dec 10 to Feb/24+ 2024</b>	Debris at EVRC not cleared
<b>Total Freshet</b>	peak (LTL 18.46' + UTL 3.1' – ice off UTL + LTL 15.65') + approximately 4' EUS = <b>9.91 ft.</b>			<b>Total pumped averaged 1/8<sup>th</sup> of an in. for 166 days = about 1.73 ft. or 1 ft. 9in.</b>	

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<b>EUS</b>	~4 ft.	Varies with precipitation, temp., water use & ground water level.		
<b>Projected</b>	<b>Capacity for 2024</b>	LTL has about 2 ft. (flood at 19.2 ft) + UTL has 3.6 ft. capacity	<b>5.6 ft. vertical ft. freshet capacity</b>	
<b>Addition info</b>	<p>Pump off for helicopters/trucks taking water from LTL &amp; UTL Aug. 18 to Sept 26 for forest fire NE LTL.</p> <p>Logging mid Jan 2024 for 1/wk of burned timber from fire. May affect Willowbrook.</p>			

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### Legend:

WCG is Water Canada Gauge,

UTL is Upper Twin Lake,

TP is Turtle Pond,

LTL is Lower Twin Lake,

TL is Upper & Lower Twin Lake,

Stor is live storage and MHC is Middle Horn Creek – from UTL outlet to TP.

EUS is evaporation/use & seepage which in 1973 average was 3 ft. but 2019 proved to be 4 ft. (2 ft. from each UTL & LTL).

EVRC is Eastview Rd. Culvert

Not Assessed is N A.

DL 1469s culverts are at South White Lake Rd. ~ 1km above or south of UTL where Horn Creek leaves Orofino Mt. and enters a field.

Snowpack is predicted mid Feb., mid Mar., & mid Apr. by Rivers Forecast for S. Okanagan. Mt. Kobau (1815masl) or Greyback Reservoir (1550 masl) have snow pillows but not Orofino Mt. (1550 masl).

LTL has full lake supply (FLS) at 18.6 ft when water reaches the tree line.

Flood of LTL built infrastructure begins at 19.2 ft.

Full System Supply (FSS) - UTL storage (licensed for 320 acre ft. which is ~4 vertical ft. on WCG before spill) + LTL 19.2 ft. at infrastructure flood level = 23.2 ft.

One vertical inch of LTL water when LTL is at ~ 80 acres or recommended high water level of 17.6 ft. is 2.173M US g. UTL & LTL area each about 80 acres but UTL is a shallow lake. LTL is 90 ft deep in the S. Bay.

LTL vertical water level is as the 1968 hydrometric station (Botham in 1973 stated normal should be a low of 12.6 ft to high of 17.6 ft).

TL waterway is formed by its geology and initially was used by 2 ranchers for gravity feed irrigation. In the spring water was stored behind the 1948 dam to flood the upper field by the old barn. By June 30 the dam slide culvert was opened according to the water licence so that water moved into the LTL which overflowed or later (1951 to 1962) was released via a slide culvert to a gravity feed pipe to a lower field DL 280 & 281.

Ice on & ice off is according to the BC Lake Stewardship protocol.