



State of Utah

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MEMORANDUM

TO: Water Quality Standards Workgroup
FROM: Jake Vander Laan
DATE: April 18, 2022
SUBJECT: Proposed dissolved oxygen criteria saturation footnote

Dissolved oxygen (DO) concentrations in water are affected by atmospheric pressure, water temperature, and salinity. Lower atmospheric pressures result in lower possible DO concentrations. These relationships make some of Utah’s current DO criteria naturally unattainable in certain situations, particularly in waterbodies at higher elevations.

This proposed change to Utah’s water quality standards adds a footnote to the aquatic life use DO criteria to address situations where existing criteria may be naturally unattainable. The proposed change specifies that the minimum acceptable concentration is 90% DO saturation where natural conditions create dissolved oxygen concentrations less than 110% of the applicable criteria means or minima or both as recommended by the EPA Gold Book.

R317-2-7 Redline

TABLE 2.14.2
NUMERIC CRITERIA FOR AQUATIC WILDLIFE(8)

Parameter	Aquatic Wildlife				
	3A	3B	3C	3D	5
PHYSICAL					
Total Dissolved Gases	(1)	(1)			
Minimum Dissolved Oxygen (MG/L) (2)(2a)(2b)					
30 Day Average	6.5	5.5	5.0	5.0	
7 Day Average	9.5/5.0	6.0/4.0			
Minimum	8.0/4.0	5.0/3.0	3.0	3.0	

(2b)Where natural conditions alone create dissolved oxygen concentrations less than 110 percent of the applicable criteria means or minima or both, the minimum acceptable concentration is 90 percent of saturation.