

Utah Division of Water Quality

WASTELOAD ANALYSIS [WLA]				Date:	1/5/2022
Appendix A: Mass Balance Mixing Analysis for Conservative Constituents					
Discharging Facility:	Holliday Water Company				
UPDES No:	UT-0025429				
Permit Flow [MGD]:	0.025	Annual	Max. Daily		
	0.025	Annual	Max. Monthly		
Receiving Water:	North Fork Spring Creek				
Stream Classification:	2B, 3A, 4				
Stream Flows [cfs]:	0.0	All Seasons	Critical Low Flow		
Fully Mixed:	YES				
Acute River Width:	100%				
Chronic River Width:	100%				
Modeling Information					
A mass balance mixing analysis was used to determine the effluent limits.					
All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.					
Effluent Limitations					
Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).					
Other conditions used in the modeling effort reflect the environmental conditions expected at low stream flows.					
Effluent Limitations for Protection of Recreation (Class 2B Waters)					
Physical	Concentration				
Parameter	Minimum	Maximum			
pH	6.5	9.0			
Turbidity Increase (NTU)		10.0			
Bacteriological					
E. coli (30 Day Geometric Mean)	206	(#/100 mL)			
E. coli (Maximum)	668	(#/100 mL)			

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Effluent Limitations for Protection of Aquatic Wildlife (Class 3A Waters)							
Physical		Concentration					
Parameter	Minimum	Maximum					
pH	6.5	9.0					
Turbidity Increase (NTU)		10.0					
Temperature (deg C)		Maximum					
Instantaneous	20.0						
Change	2.0						
Dissolved Oxygen (mg/L)		Minimum					
Instantaneous	4.0						
7-day Average	5.0						
30-day Average	6.5						
Inorganics				Acute Standard (1 Hour Average)			
Parameter				Standard			
Phenol (mg/L)				0.010			
Hydrogen Sulfide (Undissociated) [mg/L]				0.002			
Metals-Total Recoverable (µg/L)		Chronic (4-day ave)			Acute (1-hour ave)		
Parameter	Standard ¹	Background	Limit	Standard ¹	Background	Limit	
Aluminum	87.0		87.0	750.0		750.0	
Arsenic	150.0		150.0	340.0		340.0	
Cadmium	1.2		1.2	3.4		3.4	
Chromium VI	11.0		11.0	16.0		16.0	
Chromium III	130.8		130.8	1005.2		1005.2	
Copper	16.2		16.2	25.8		25.8	
Cyanide	5.2		5.2	22.0		22.0	
Iron				1000.0		1000.0	
Lead	5.3		5.3	136.1		136.1	
Mercury	0.012		0.012	2.4		2.4	
Nickel	93.5		93.5	841.7		841.7	
Selenium	4.6		4.6	18.4		18.4	
Silver				10.6		10.6	
Tributyltin	0.072		0.072	0.46		0.46	
Zinc	212.5		212.5	210.8		210.8	
1: Based upon a Hardness of 200 mg/l as CaCO ₃							
Organics [Pesticides] (µg/L)		Chronic (4-day ave)			Acute (1-hour ave)		
Parameter	Standard	Limit		Standard	Limit		
Aldrin				1.5	1.5		
Chlordane	0.0043	0.0043		1.2	1.2		
DDT, DDE	0.001	0.001		0.55	0.55		
Diazinon	0.17	0.17		0.17	0.17		
Dieldrin	0.0056	0.0056		0.24	0.24		
Endosulfan, a & b	0.056	0.056		0.11	0.11		
Endrin	0.036	0.036		0.086	0.086		
Heptachlor & H. epoxide	0.0038	0.0038		0.26	0.26		
Lindane	0.08	0.08		1.0	1.0		
Methoxychlor				0.03	0.03		
Mirex				0.001	0.001		
Nonylphenol	6.6	6.6		28.0	28.0		
Parathion	0.0130	0.0130		0.066	0.066		
PCB's	0.014	0.014					
Pentachlorophenol	15.0	15.0		19.0	19.0		
Toxaphene	0.0002	0.0002		0.73	0.73		

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Effluent Limitation for Protection of Agriculture (Class 4 Waters)			
Maximum Concentration			
Parameter	Standard	Background	Limit
Total Dissolved Solids (mg/L)	1200		1200
Boron (mg/L)	0.75		0.75
Arsenic, Dissolved (µg/L)	100		100
Cadmium, Dissolved (µg/L)	10		10
Chromium, Dissolved (µg/L)	100		100
Copper, Dissolved (µg/L)	200		200
Lead, Dissolved (µg/L)	100		100
Selenium, Dissolved (µg/L)	50		50
Gross Alpha (pCi/L)	15		15.0

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