

## Great Salt Lake Segmentation & Selenium Tissue Based Water Quality Standard

### R317-2-6. Use Designations.

The Board as required by Section 19-5-110, shall group the waters of the state into classes so as to protect against controllable pollution the beneficial uses designated within each class as set forth below. Surface waters of the state are hereby classified as shown in R317-2-13.

6.5 Class 5 -- The Great Salt Lake. ~~Protected for primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary aquatic organisms in their food chain, and mineral extraction.~~

#### Class 5A Gilbert Bay

Geographical Boundary — All open waters at or below 4,208-foot elevation south of the Union Pacific Causeway, excluding all of Farmington Bay south of the Antelope Island Causeway and salt evaporation ponds.

Beneficial Uses — Protected for primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

#### Class 5B Gunnison Bay

Geographical Boundary — All open waters at or below 4,208-foot elevation north of the Union Pacific Causeway and west of the Promontory Mountains, excluding salt evaporation ponds.

Beneficial Uses — Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

#### Class 5C Bear River Bay

Geographical Boundary — All open waters at or below 4,208-foot elevation north of the Union Pacific Causeway and east of the Promontory Mountains, excluding current existing salt evaporation ponds.

Beneficial Uses — Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

#### Class 5D Farmington Bay

Geographical Boundary — All open waters at or below 4,208-foot elevation east of Antelope Island and south of the Antelope Island Causeway.

Beneficial Uses — Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

Assessment criteria are dependent upon salinity concentration.

#### Class 5E Transitional Wetlands along the Great Salt Lake Shoreline

Geographical Boundary — All wetlands below the 4,208-foot elevation to the current lake elevation of the open water of the Great Salt Lake receiving their source water from naturally occurring springs, streams, impounded wetlands, or facilities requiring a UPDES permit. The geographical areas of these transitional wetlands change corresponding to the fluctuation of open water elevation  
Beneficial Uses — Protected for secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

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### 7.1 Application of Standards

The numeric criteria listed in R317-2-14 shall apply to each of the classes assigned to waters of the State as specified in R317-2-6. It shall be unlawful and a violation of these regulations for any person to discharge or place any wastes or other substances in such manner as may interfere with designated uses protected by assigned classes or to cause any of the applicable standards to be violated, except as provided in R317-1-3.1. The Board may allow site specific modifications based upon bioassay or other tests performed in accordance with standard procedures determined by the Board.

At a minimum, assessment of the beneficial use support for waters of the state will be conducted biannually and available for a 30-day period of public comment and review. Monitoring locations and target indicators of water quality standards shall be prioritized and published yearly.

The Board may allow site specific modifications based upon bioassay or other tests performed in accordance with standard procedures determined by the Board.

13.11 National Wildlife Refuges, and State Waterfowl Management Areas, and other  
Areas Associated with the Great Salt Lake

TABLE

Bear River National Wildlife			
Refuge, Box Elder County			
		<del>2B</del>	<del>3B</del> <del>3D</del>
	<u>Open Water below 4,208 ft.</u>		<u>5C</u>
	<u>Transational Wetlands 4,208 ft. to Open Water</u>		<u>5E</u>
	<u>Open Water above 4,208 ft.</u>	<u>2B</u>	<u>3D</u>
<del>Brown's Park Waterfowl Management</del>			
<del>Area, Daggett County</del>			
		<del>2B</del>	<del>3A</del> <del>3D</del>
<del>Clear Lake Waterfowl Management</del>			
<del>Area, Millard County</del>			
		<del>2B</del>	<del>3C</del> <del>3D</del>
<del>Desert Lake Waterfowl Management</del>			
<del>Area, Emery County</del>			
		<del>2B</del>	<del>3C</del> <del>3D</del>
Farmington Bay Waterfowl			
Management Area, Davis and			
Salt Lake Counties			
		<del>2B</del>	<del>3C</del> <del>3D</del>
	<u>Open Water below 4,208 ft.</u>		<u>5D</u>
	<u>Transational Wetlands 4,208 ft. to Open Water</u>		<u>5E</u>
	<u>Open Water above 4,208 ft.</u>	<u>2B</u>	<u>3C</u>
<del>Fish Springs National</del>			
<del>Wildlife Refuge, Juab County</del>			
		<del>2B</del>	<del>3C</del> <del>3D</del>
<del>Harold Crane Waterfowl</del>			
<del>Management Area, Box Elder</del>			
<del>County</del>			
		<del>2B</del>	<del>3C</del> <del>3D</del>
Howard Slough Waterfowl			
Management Area, Weber County			
		<del>2B</del>	<del>3C</del> <del>3D</del>
	<u>Open Water below 4,208 ft.</u>		<u>5C</u>
	<u>Transational Wetlands 4,208 ft. to Open Water</u>		<u>5E</u>
	<u>Open Water above 4,208 ft.</u>	<u>2B</u>	<u>3C</u>
Locomotive Springs Waterfowl			
Management Area, Box Elder County			
		<del>2B</del>	<del>3B</del> <del>3D</del>
	<u>Open Water below 4,208 ft.</u>		<u>5B</u>
	<u>Transational Wetlands 4,208 ft. to Open Water</u>		<u>5E</u>
	<u>Open Water above 4,208 ft.</u>	<u>2B</u>	<u>3C</u>
Ogden Bay Waterfowl Management			
Area, Weber County			
		<del>2B</del>	<del>3C</del> <del>3D</del>
	<u>Open Water below 4,208 ft.</u>		<u>5C</u>
	<u>Transational Wetlands 4,208 ft. to Open Water</u>		<u>5E</u>
	<u>Open Water above 4,208 ft.</u>	<u>2B</u>	<u>3C</u>
<del>Ouray National Wildlife Refuge,</del>			
<del>Uintah County</del>			
		<del>2B</del>	<del>3B</del> <del>3D</del>

~~Powell Slough Waterfowl  
Management Area, Utah County 2B 3C 3D~~

Public Shooting Grounds Waterfowl  
Management Area, Box Elder County 2B 3C 3D  
~~Open Water below 4,208 ft. 5C~~  
~~Transational Wetlands 4,208 ft. to Open Water 5E~~  
~~Open Water above 4,208 ft. 2B 3C~~

Salt Creek Waterfowl Management  
Area, Box Elder County 2B 3C 3D  
~~Open Water below 4,208 ft. 5B~~  
~~Transational Wetlands 4,208 ft. to Open Water 5E~~  
~~Open Water above 4,208 ft. 2B 3C~~

~~Stewart Lake Waterfowl Management  
Area, Uintah County 2B 3B 3D~~

Timpie Springs Waterfowl  
Management Area, Tooele County 2B 3B 3D  
~~Open Water below 4,208 ft. 5A~~  
~~Transational Wetlands 4,208 ft. to Open Water 5E~~  
~~Open Water above 4,208 ft. 2B 3C~~

### Wildlife Management Areas not Associated with the Great Salt Lake

Brown's Park Waterfowl Management  
Area, Daggett County 2B 3A 3D

Clear Lake Waterfowl Management  
Area, Millard County 2B 3C 3D

Desert Lake Waterfowl Management  
Area, Emery County 2B 3C 3D

Fish Springs National  
Wildlife Refuge, Juab County 2B 3C 3D

Harold Crane Waterfowl  
Management Area, Box Elder  
County 2B 3C 3D

Ouray National Wildlife Refuge,  
Uintah County 2B 3B 3D

Powell Slough Waterfowl  
Management Area, Utah County 2B 3C 3D

Stewart Lake Waterfowl Management  
Area, Uintah County 2B 3B 3D

Other Areas Associated with the Great Salt Lake

Gilbert Bay

<u>Open Water below 4,208 ft.</u>	<u>5A</u>
<u>Transitional Wetlands 4,208 ft.</u>	
<u>to Open Water</u>	<u>5E</u>
<u>Open Water above 4,208 ft.</u>	<u>2B 3C</u>

Gunnison Bay

<u>Open Water below 4,208 ft.</u>	<u>5B</u>
<u>Transitional Wetlands 4,208 ft. to Open Water</u>	<u>5E</u>
<u>Open Water above 4,208 ft.</u>	<u>2B 3C</u>

Bear River Bay

<u>Open Water below 4,208 ft.</u>	<u>5C</u>
<u>Transitional Wetlands 4,208 ft. to Open Water</u>	<u>5E</u>
<u>Open Water above 4,208 ft.</u>	<u>2B 3C</u>

Farmington Bay

<u>Open Water below 4,208 ft.</u>	<u>5D</u>
<u>Transitional Wetlands 4,208 ft. to Open Water</u>	<u>5E</u>
<u>Open Water above 4,208 ft.</u>	<u>2B 3C</u>

TABLE 2.14.2  
 NUMERIC CRITERIA FOR AQUATIC

## WILDLIFE

Parameter	Aquatic Wildlife				
	3A	3B	3C	3D	5A
PHYSICAL					
Total Dissolved					
Gases	(1)	(1)			
Minimum Dissolved Oxygen					
(MG/L) (2)					
30 Day Average	6.5	5.5	5.0	5.0	
7 Day Average	9.5/5.0	6.0/4.0			
1 Day Average	8.0/4.0	5.0/3.0	3.0	3.0	
Max. Temperature(C)(3)	20	27	27		
Max. Temperature					
Change (C)(3)	2	4	4		
pH (Range)	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0	
Turbidity Increase					
(NTU)	10	10	15	15	
METALS (4)					
(DISSOLVED,					
UG/L)(5)					
Aluminum					
4 Day Average (6)	87	87	87	87	
1 Hour Average	750	750	750	750	
Arsenic (Trivalent)					
4 Day Average	150	150	150	150	
1 Hour Average	340	340	340	340	
Cadmium (7)					
4 Day Average	0.25	0.25	0.25	0.25	
1 Hour Average	2.0	2.0	2.0	2.0	
Chromium					
(Hexavalent)					
4 Day Average	11	11	11	11	
1 Hour Average	16	16	16	16	
Chromium					
(Trivalent) (7)					
4 Day Average	74	74	74	74	
1 Hour Average	570	570	570	570	
Copper (7)					
4 Day Average	9	9	9	9	
1 Hour Average	13	13	13	13	
Cyanide (Free)					
4 Day Average	5.2	5.2	5.2		
1 Hour Average	22	22	22	22	
Iron (Maximum)					
Lead (7)	1000	1000	1000	1000	
4 Day Average	2.5	2.5	2.5	2.5	
1 Hour Average	65	65	65	65	
Mercury					
4 Day Average	0.012	0.012	0.012	0.012	
1 Hour Average	2.4	2.4	2.4	2.4	
Nickel (7)					
4 Day Average	52	52	52	52	
1 Hour Average	468	468	468	468	

Selenium				
4 Day Average	4.6	4.6	4.6	4.6
1 Hour Average	18.4	18.4	18.4	18.4
<b>Selenium (Great Salt Lake)(14)</b>				
<b>Geometric Mean over</b>				
<b>Nesting Season (mg/kg)</b>				<b>12.5</b>
Silver				
1 Hour Average (7)	1.6	1.6	1.6	1.6
Zinc (7)				
4 Day Average	120	120	120	120
1 Hour Average	120	120	120	120
INORGANICS				
(MG/L) (4)				
Total Ammonia as N (9)				
30 Day Average	(9a)	(9a)		
1 Hour Average	(9b)	(9b)	(9b)	(9b)
Chlorine (Total Residual)				
4 Day Average	0.011	0.011	0.011	0.011
1 Hour Average	0.019	0.019	0.019	0.019
Hydrogen Sulfide (13)				
(Undissociated, Max. UG/L)	2.0	2.0	2.0	2.0
Phenol (Maximum)	0.01	0.01	0.01	0.01
RADIOLOGICAL				
(MAXIMUM pCi/L)				
Gross Alpha (10)	15	15	15	15
ORGANICS (UG/L) (4)				
Aldrin				
1 Hour Average	1.5	1.5	1.5	1.5
Chlordane				
4 Day Average	0.0043	0.0043	0.0043	0.0043
1 Hour Average	1.2	1.2	1.2	1.2
4,4' -DDT				
4 Day Average	0.0010	0.0010	0.0010	0.0010
1 Hour Average	0.55	0.55	0.55	0.55
Dieldrin				
4 Day Average	0.056	0.056	0.056	0.056
1 Hour Average	0.24	0.24	0.24	0.24
Alpha-Endosulfan				
4 Day Average	0.056	0.056	0.056	0.056
1 Hour Average	0.11	0.11	0.11	0.11
beta-Endosulfan				
4 Day Average	0.056	0.056	0.056	0.056
1 Day Average	0.11	0.11	0.11	0.11
Endrin				
4 Day Average	0.036	0.036	0.036	0.036
1 Hour Average	0.086	0.086	0.086	0.086
Heptachlor				
4 Day Average	0.0038	0.0038	0.0038	0.0038
1 Hour Average	0.26	0.26	0.26	0.26
Heptachlor epoxide				
4 Day Average	0.0038	0.0038	0.0038	0.0038
1 Hour Average	0.26	0.26	0.26	0.26
Hexachlorocyclohexane (Lindane)				
4 Day Average	0.08	0.08	0.08	0.08

(14) The selenium water quality standard of [xxxxx] mg/kg for Gilbert Bay is a tissue based standard using the complete egg/embryo based upon a minimum of five samples over the nesting season. Assessment procedures are incorporated as a part of this standards as follows:

<u>Sampling</u>	<u>Sampling</u>	<u>Egg Concentration</u> <u>(% of Standard)</u>	<u>Response</u>
<u>Water column,</u> <u>Brine Shrimp,</u> <u>or Brine Shrimp</u> <u>Cysts</u>	<u>Eggs mg/kg</u>		
<u>4 Locations</u> <u>prior to</u> <u>nesting season</u>	<u>1 Location for 1</u> <u>Species</u>		
<u>4 Locations</u> <u>with Quarterly</u> <u>Frequency</u>	<u>2 Location for 1</u> <u>Species</u>	<u>40%</u>	<u>Level II</u> <u>Antidegradation</u> <u>Review required</u> <u>for all new</u> <u>permits and</u> <u>renewals</u>
<u>8 Locations</u> <u>with Quarterly</u> <u>Frequency</u>	<u>2 Location for 2</u> <u>Species</u>	<u>60%</u>	<u>Implementation of</u> <u>annual selenium</u> <u>loading caps of</u> <u>GSL permits</u>
	<u>3 Locations for</u> <u>2 Species;</u> <u>Hatchability on</u> <u>2 species</u>	<u>80%</u>	<u>Preliminary</u> <u>studies of load</u> <u>reductions</u>
		<u>100%</u>	<u>Impairment: TMDL</u> <u>required</u>

Additional assessment procedures associated with this standard are referenced at R317-2-7.1 Application of Standards. Antidegradation Level II Review procedures associated with this standard are referenced at R317-2-3.4.C