Surface Water Quality Standards
Proposed Rule Changes
Teams Virtual Outreach Meeting

South Dakota Department of Agriculture and Natural Resources

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A few housekeeping items

- This meeting is being recorded and will be posted to our DANR website.
- Please identify yourself prior to speaking.
- Please stay muted unless speaking.
- Out of courtesy to others – we may mute you if there is excessive background noise. You will have to unmute yourself to speak.
- If you are on the telephone press *6 to mute/unmute.
- To accommodate all participants, please limit comments to 3 minutes. We can go back as time allows.

SWQS Proposed Rule Changes

- Background
- Summary of (preliminary) Proposed Changes
- Outreach Planned
- Next Steps

We will ask if there are any questions periodically throughout presentation.

SWQS Proposed Rule Changes

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Background

- Congress passed the federal Clean Water Act in 1972
- States were required to develop Surface Water Quality Standards to support the goals of the Clean Water Act
  - Primary goal: All waters should be fishable and swimmable
- Assign beneficial uses and water quality criteria to protect the uses

Beneficial Uses

(1) Domestic Water Supply Waters;
(2) Coldwater Permanent Fish Life Propagation;
(3) Coldwater Marginal Fish Life Propagation;
(4) Warmwater Permanent Fish Life Propagation;
(5) Warmwater Semipermanent Fish Life Propagation;
(6) Warmwater Marginal Fish Life Propagation;
(7) Immersion Recreation Waters;
(8) Limited Contact Recreation Waters;
(9) Fish and Wildlife Propagation, Recreation, and Stock Watering Waters;
(10) Irrigation waters; and
(11) Commerce and Industry Waters.

Water Quality Criteria

- Specific water quality goals to ensure beneficial uses are met and maintained
- Narrative or Numeric:
  - “No toxics in toxic amounts”
  - Dissolved Oxygen must be greater than 5.0 ppm
- E. coli, Total Suspended Solids, Ammonia, Heavy Metals, Radiological, Specific Conductance, etc.

SWQS Update – Not a Triennial Review

- States are required to periodically review their water quality standards in a Triennial Review
  - Update based on new scientific information
  - Update based on changing conditions
  - All SWQS open to public review
- States may also periodically update outside of the Triennial process
  - Only review/update select sections and specific items
  - The entire SWQS are not open for public review

The proposed updates are just for specific items in select sections. This is NOT a Triennial Review.

SWQS Update – Not a Triennial Review

- The SD Surface Water Quality Standards are contained in the Administrative Rules of South Dakota, Article 74:51
  - Changes must be offered for public notice
  - Changes must be approved by the Water Management Board

Water Quality Standards Modification Process

- Request Permission to Advertise/Proceed with Rule Change (granted July 2022)
- Public Notice (October 2022)
- Water Management Board Hearing (December 2022)
- Rules Review Committee
- File with Secretary of State
- EPA Approval

Questions so far?

SWQS Proposed Rule Changes

- Background
- Summary of (preliminary) Proposed Changes
- Outreach Planned
- Next Steps

Summary of Requested Changes

- Adopt/update Cadmium criteria
- Update Irrigation beneficial use criteria to seasonal
- Delete unused term in definitions
- Updates/Corrections to Uses assigned to Lakes
- Updates/Corrections to Uses assigned to Streams

Cadmium Criteria Adoption

- Current standard based on EPA's 2001 criteria
- EPA finalized new criteria in 2016
- Cadmium exposure leads to adverse effects on growth, reproduction, immune and endocrine systems, development and behavior, and acute-toxicity by disrupting calcium homeostasis and causing oxidative damage.
- Naturally occurring metal found in mineral deposits

Cadmium Criteria Adoption

- Updated criteria provides protection for increased # of species and genera
- Affects ALL fishery uses including

74:51:01:45. Criteria for coldwater permanent fish life propagation waters.
74:51:01:46. Criteria for coldwater marginal fish life propagation waters.
74:51:01:47. Criteria for warmwater permanent fish life propagation waters.
74:51:01:48. Criteria for warmwater semipermanent fish life propagation waters.
74:51:01:49. Criteria for warmwater marginal fish life propagation waters.
74:51:01:52. Criteria for fish and wildlife propagation, recreation, and stock watering waters.

Therefore, applies to all waters of the state.

Cadmium Criteria Adoption

2016 AWQC Update[a]		2001 AWQC[a]	
Acute (1-hour, dissolved Cd)[d]	Chronic (4-day, dissolved Cd)	Acute (1-day, dissolved Cd)	Chronic (4-day, dissolved Cd)
1.8 µg/L[c]	0.72 µg/L	2.0 µg/L[c]	0.25 µg/L

a – do not exceed more than once every three years
b – freshwater acute and chronic criteria are hardness dependent; this example based on a total hardness of 100 mg/L.
c – lowered to protect certain species per 1985 guidelines
d – duration of the 2016 acute criteria changed to 1-hr per 1985 guidelines
Acute – daily maximum, chronic -30-day average

SOUTH DAKOTA SURFACE WATER QUALITY STANDARDS[1] FOR TOXIC POLLUTANTS - ARSD 74:51:01

Pollutant	CAS Number	Human Health Value Concentrations in µg/L		Freshwater Aquatic Life Value Concentrations in µg/L Uses 2-3-4-5-6-9	
		Use 1[2]	Uses 2-3-4-5-6-9[3]	Acute (CMC)	Chronic (CCC)
Acenaphthene	83329	70	90		
Acenaphthylene (PAH)[6]	208968				
Acrolein	107028	3	400	3	3
Acrylonitrile[4]	107131	0.061	7.0		
Aldrin[4]	309002	0.00000077	0.00000077	3.0	
Alpha-Hexachlorocyclohexane (HCH)[4]	319846	0.00036	0.00039		
Anthracene (PAH)[5]	120127	300	400		
Antimony	7440360	5.6	640		
Arsenic[4]	7440382	0.018[11]	0.14[11]	340	150
Asbestos[4]	1332214	7,000,000 fibers/L			
alpha-BHC[4]	319846	0.0026	0.0049		
beta-BHC[4]	319857	0.0091	0.017		
Benzene[4]	71432	0.58	16		
Benzidine[4]	92875	0.00014	0.011		
Benzo(a)Anthracene[4]	56553	0.0012	0.013		
Benzo(a)Pyrene[4]	50328	0.00012	0.00013		
Benzo(b)Fluoroanthene[4]	205992	0.0012	0.0013		
Benzo(k)Flouroanthene[4]	207089	0.012	0.013		
Beryllium	7440417	4			
beta-Hexachlorocyclohexane (HCH)	319857	0.0080	0.014		
Bis(2-Chloro-1-methylethyl) Ether	108601	200	4,000		
Bis(2-Chloroethyl) Ether[4]	111444	0.030	2.2		
Bis(2-Ethylhexyl)Phthalate[4]	117817	0.32	0.37		
Bis(Chloromethyl) Ether[4]	542881	0.00015	0.017		
Bromoform[5]	75252	7.0	120		
Butylbenzyl Phthalate[4]	85687	0.10	0.10		
Cadmium	7440439			~~2.0~~ 1.8[7]	~~0.25~~ 0.72[7]
Carbon Tetrachloride[4]	56235	0.4	5		
Chlordane[4]	57749	0.00031	0.00032	2.4	0.0043
Chlorine	7782505			19	11
Chlorobenzene	108907	100	800		
Chlorodibromomethane[4]	124481	0.80	21		
Chloroform[4]	67663	60	2,000		

Cadmium Update

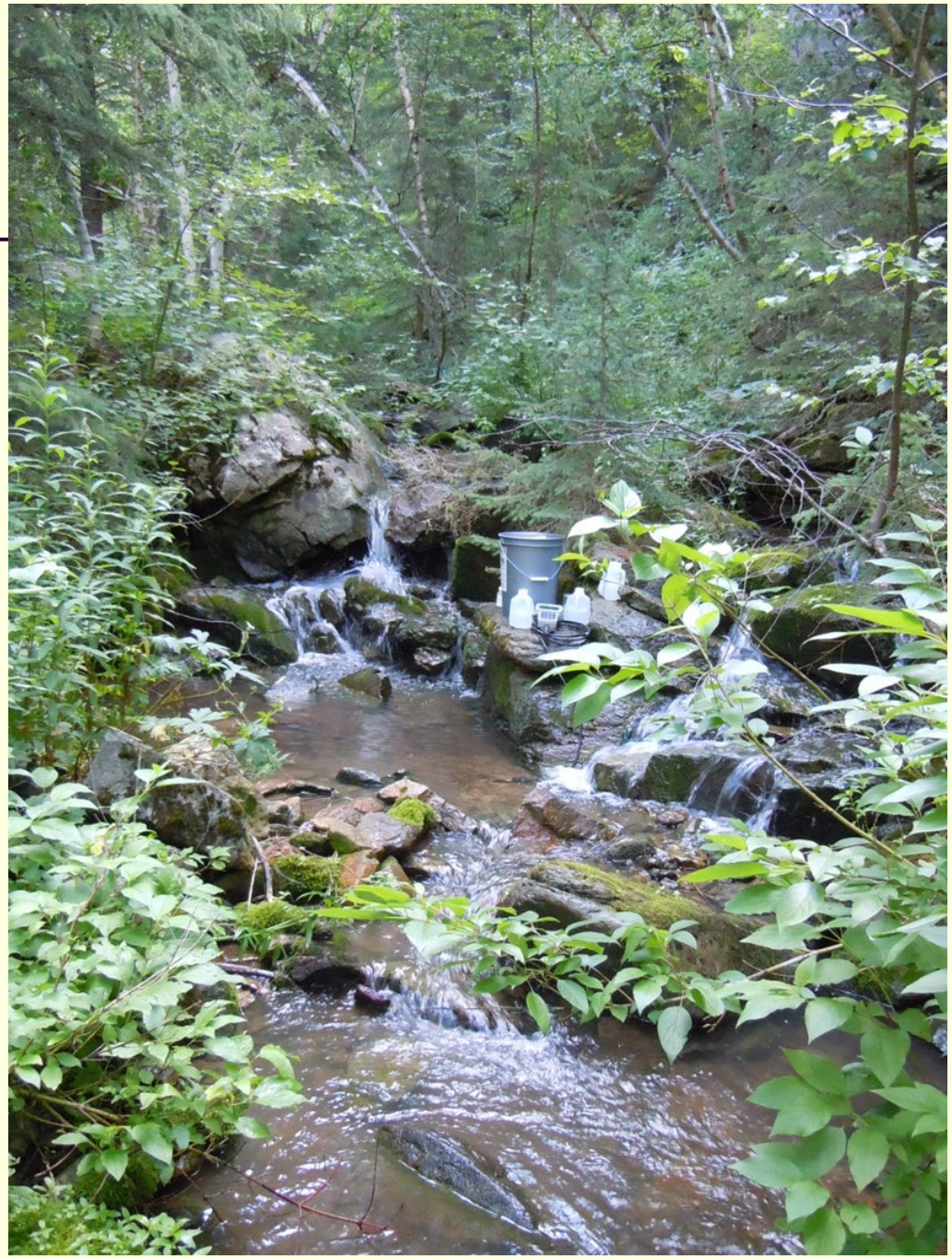
(7) For hardness-dependent criteria in ug/L, the value given is an example only and is based on a $CaCO_3$ hardness of 100 mg/L. Criteria for each case must be calculated using the following equations taken from National Recommended Water Quality Criteria:
http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#hhtable~~, June 2013~~:

Cadmium, ug/L
Chronic = (*~~0.909~~ CF)e(~~0.7409~~ 0.7977[ln(hardness)]-~~4.719~~ 3.909)
Acute = (*~~0.944~~ CF)e(~~1.0166~~ 0.9789[ln(hardness)]-~~3.924~~ 3.866)

*Conversion factors are hardness-dependent. The values shown are with a hardness of 100 mg/L as calcium carbonate ($CaCO_3$). Conversion factors (CF) (from total to dissolved) for any hardness can be calculated using the following equations:

Chronic: CF = 1.101672 - [(ln hardness)(0.041838)]
Acute: CF = 1.136672 - [(ln hardness)(0.041838)]

Questions/Comments on Cadmium?



Update to Irrigation Beneficial Use

(1) Domestic Water Supply Waters;
(2) Coldwater Permanent Fish Life Propagation;
(3) Coldwater Marginal Fish Life Propagation;
(4) Warmwater Permanent Fish Life Propagation;
(5) Warmwater Semipermanent Fish Life Propagation;
(6) Warmwater Marginal Fish Life Propagation;
(7) Immersion Recreation Waters;
(8) Limited Contact Recreation Waters;
(9) Fish and Wildlife Propagation, Recreation, and Stock Watering Waters;
(10) Irrigation waters; and
(11) Commerce and Industry Waters.

Update to Irrigation Beneficial Use

- Currently use is year-round
- Use applies to ALL SD streams and select lakes/reservoirs
- Recommending criteria apply April 1 through October 31 to coincide with actual irrigation use
- Reviewed 10 years of irrigation use data
  - 98.5% of surface water pumped for irrigation use occurred Apr 1-Oct 31
  - 99.1% of acres of land irrigated during months Apr 1-Oct 31

Update to Irrigation Beneficial Use

ARSD 74:71:01:53. Criteria for irrigation waters. The criteria of parameters for irrigation waters and their allowable variations that are not included under 74:51:01:55 and Appendix B, unless set under 74:51:01:24, are as found in the following table and apply April 1 through October 31:

Parameter	Criteria	Unit of Measure	Special Conditions
Conductivity at 25°C	≤ 2,500	micromhos/cm	30-day average
	≤ 4,375	micromhos/cm	daily maximum
Sodium adsorption ratio	≤ 10		see definition

*Beneficial use (9) Fish and wildlife propagation, recreation, and stock watering waters still in effect year-round, that includes a conductivity criterion.

Irrigation – seasonal update

SURFACE WATER QUALITY 74:51

74:51:01:53. Criteria for irrigation waters. The criteria of parameters for irrigation waters and their allowable variations that are not included under § 74:51:01:55 and Appendix B, unless set under § 74:51:01:24, are as found in the following table and only apply April 1 – October 31:

Parameter	Criteria	Unit of Measure	Special Conditions
Conductivity at 25°C	≤ 2,500	micromhos/cm	30-day average
	≤ 4,375	micromhos/cm	daily maximum
Sodium adsorption ratio	≤ 10		see definition

Source: SL 1975, ch 16, § 1; 4 SDR 32, effective December 4, 1977; transferred from § 34:04:02:43, effective July 1, 1979; 10 SDR 145, effective July 4, 1984; 13 SDR 129, 13 SDR 141, effective July 1, 1987; 14 SDR 86, effective December 24, 1987; 19 SDR 111, effective January 31, 1993; transferred from § 74:03:02:43, July 1, 1996; 24 SDR 10, effective July 20, 1997; 47 SDR 110, effective April 27, 2021.

General Authority: SDCL 34A-2-10, 34A-2-11, 34A-2-93.

Law Implemented: SDCL 34A-2-10, 34A-2-11.

Questions/Comments on Irrigation?

Delete a definition

- Delete from definitions:
  - 74:51:01:01(19) "EPA methods," Methods for Chemical Analysis of Waters and Wastes, 1983, Environmental Protection Agency, Analytical Quality Control Laboratory
    - The term is not used in the SWQS and ARSD 74:51:01:22 instructs the use of 40 CFR 136 for approved test methods.

Delete a definition

~~(19) "EPA methods," Methods for Chemical Analysis of Waters and Wastes, 1983, Environmental Protection Agency, Analytical Quality Control Laboratory;~~

(~~20~~19) "Epilimnion," in a thermally-stratified waterbody, the upper stratum of the water column. This layer is generally above the thermocline and is typically uniformly warm, circulating, and well mixed;

Questions/Comments?

Updates/Corrections to Lakes

- Update/Correct 74:51:02 Uses assigned to lakes.
  - Correction to lake identification number in chapter
    - 4 waterbodies
  - Breached/no longer in existence waterbodies
    - 26 waterbodies
    - No longer hold water or support fish life
    - Recommend removing these from chapter

Update to 74:51:02

74:51:02:04. Uses of certain lakes. Lakes covered by §§ 74:51:02:02 and 74:51:02:03 include the following:

County	Waterbody	State Lake Identifier	Uses
Aurora	Crystal	LJA-Lake-340-000	6
	Fish	LJA-Lake-655-000	6
	Frazer, also known as Fraser Dam	LJA-Lake-18-000	5
	Hansons	FTR-Lake-5652-000	6
	Jail Pond, also known as Plankinton Community Fishing Pond	LJA-Lake-774-000	6
	New Stickney, also known as Nelson	LJA-Lake-772-000	4
	Old Stickney	LJA-Lake-55-000	6
	Patton	FTR-Lake-5113-000	3
	White	FTR-Lake-5129-000	6
	Wilmarth	LJA-Lake-233-000	4
Beadle	~~Bergers~~	~~MJA-Lake-638-000~~	~~5~~
	Byron	MJA-Lake-531-000	5,10
	Cavour	MJA-Lake-532-000	6
	Mud, includes Conners and Spring	MJA-Lake-531-001	6
	Ravine	MJA-Lake-540-000	5
	Staum	MJA-Lake-354-000	5
	Stoney Run	MJA-Lake-317-000	6
Bennett	Allan Dam	UWH-Lake-19-000	3
	Allen	LIW-Lake-143-000	2
	Bad Hair	MWH-Lake-38-000	5
	Cedar Creek No. 1	LIW-Lake-9-000	2
	Cedar Creek No. 2	LIW-Lake-9-001	2
	Jacquot, also known as Risse	MWH-Lake-41-000	4
	LaCreek National Wildlife Refuge Pool 1	LIW-Lake-289-000	6
	LaCreek National Wildlife Refuge Pool 2	LIW-Lake-292-000	6
	LaCreek National Wildlife Refuge Pool 3	LIW-Lake-291-000	6
	LaCreek National Wildlife Refuge Pool 4	LIW-Lake-290-000	6
	LaCreek National Wildlife Refuge Pool 5	LIW-Lake-147-000	6
	LaCreek National Wildlife Refuge Pool 6	LIW-Lake-286-000	6
	LaCreek National Wildlife Refuge Pool 7	LIW-Lake-288-000	6
	LaCreek National Wildlife Refuge Pool 8	LIW-Lake-287-000	6
	LaCreek National Wildlife Refuge Pool 9	LIW-Lake-28-000	6
	LaCreek National Wildlife Refuge Pool 10	LIW-Lake-27-000	5
	Little White River Project Dam	LIW-Lake-8-000	4
	Scharman	MWH-Lake-68-000	4
Bon Homme	Bucholz WPA	LCL-Lake-62-000	6, no 7
	Clear	LCL-Lake-9-000	6
	Cosby WPA	~~LCL-Lake-60-000~~ LCL-Lake-60-001	6, no 7
	Hieb WPA	LCL-Lake-60-000	6, no 7
	Henry	LJA-Lake-588-000	4

County	Waterbody	State Lake Identifier	Uses
	Kloucek	LJA-Lake-490-000	6
	Schaefer WPA	LCL-Lake-63-000	6, no 7
	Tyndall Kids Pond	LCL-Lake-71-000	6
Brookings	Campbell	MBS-Lake-234-000	6
	East 81 Lake	MBS-Lake-233-001	4
	Goldsmith	MBS-Lake-236-000	6
	Hendricks	LQP-Lake-23-000	5
	Johnson Pond, also known as Interstate Urban Fishing Pond	MBS-Lake-278-000	5
	Oak	LQP-Lake-68-000	6
	East Oakwood	MBS-Lake-215-001	5
	North Oakwood, also known as Johnson Lake	MBS-Lake-215-702	5
	West Oakwood, also known as Tetonkaha	MBS-Lake-215-700	5
	Sinai	MBS-Lake-232-000	4
Brown	Elm	ELM-Lake-5-000	1,4
	Elm River No. 1	ELM-Lake-190-001	1,6
	Elm River No, 2, also known as Ordway Dam	~~ELM-Lake-190-001~~ ELM-Lake-190-000	1,6
	Elm River No. 4	ELM-Lake-190-002	1,6
	Frederick	ELM-Lake-189-000	6
	Pigors	MUD-Lake-281-000	5
	Richmond	UJA-Lake-831-000	4
	Sand, which includes Mud Lake and Columbia Road Reservoirs	UJA-Lake-803-000	6
	Tacoma Park	UJA-Lake-1218-000	6
	Tollefson	MJA-Lake-343-000	6
	Wiley Park	UJA-Lake-836-000	6
	Willow Creek Dam	ELM-Lake-11-000	1,5
Brule	American	FTR-Lake-5577-000	6
	Sharping	FTR-Lake-5167-000	6
	Sixteen	FTR-Lake-5436-000	6
	Wanalain	FTR-Lake-5333-000	5
	Wells	CRW-Lake-141-000	5
Buffalo	Koch	CRW-Lake-454-000	5
Butte	Newell	LBF-Lake-528-000	4
	Newell City Pond	LBF-Lake-479-000	3
	Orman Dam, also known as Belle Fourche Reservoir	LBF-Lake-768-000	4,10
Campbell	Campbell	WMC-Lake-891-000	5
	Chester, also known as Boor	ULO-Lake-460-000	6
	Pocasse	ULO-Lake-302-000	4
Charles Mix	~~Academy~~	~~FTR-Lake-5208-000~~	~~4~~
	Andes	FTR-Lake-6099-000	6
	Dante	LCL-Lake-33-000	4
	Dowd	FTR-Lake-6087-000	6
	Geddes	FTR-Lake-6083-000	5

County	Waterbody	State Lake Identifier	Uses
	Campbell Slough	UBS-Lake-196-001	6
	Enemy Swim	UBS-Lake-196-000	4
	Minnewasta	UBS-Lake-411-705	5
	North Waubay	UBS-Lake-411-700	5
	Pickeral	UBS-Lake-358-000	4
	Pierpont	MUD-Lake-43-000	4
	Rush	UBS-Lake-411-001	6
	South Waubay	UBS-Lake-411-000	5
	Unnamed lake west of Bristol in Sections 26, 27 and 35 in T122N, R58W	MUD-Lake-351-002 and 011	4
Deuel	Alice	UMN-Lake-710-000	5
	Briggs	LQP-Lake-6-000	6
	Bullhead	UBS-Lake-320-000	5
	Clear	MBS-Lake-138-000	6
	Cochrane	LQP-Lake-56-000	4
	Coteau South	MBS-Lake-131-000	6
	Fish	LQP-Lake-14-000	6
	Francis	LQP-Lake-34-000	6
	Ketchum	MBS-Lake-133-000	5
	Lone Tree	LQP-Lake-1-000	6
	Oliver	LQP-Lake-8-000	6
	Round	UBS-Lake-320-001	6
	School	UBS-Lake-322-001	6
Dewey	Adams	LMO-Lake-871-000	5
	Dewberry	LMO-Lake-1087-000	4
	Eagle Butte	LMO-Lake-999-000	4
	Firesteel	GRA-Lake-525-000	6
	~~Goose Creek~~	~~LMO-Lake-1141-000~~	~~5~~
	Isabel	GRA-Lake-613-000	1,4
	Jewett	LMO-Lake-831-000	6
	Lantry	LMO-Lake-755-000	4
	Little Moreau No. 1	LMO-Lake-1058-000	4
	Little Moreau No. 2	LMO-Lake-1057-000	2
	Little Moreau No. 3	LMO-Lake-1106-000	6
	Peach	LMO-Lake-767-000	6
	Rockcowen	LMO-Lake-759-000	5
	~~Whitehorse~~	~~LMO-Lake-1835-000~~	~~5~~
Douglas	Armour Kids Fishing Pond	LCL-Lake-21-000	6
	Corsica	LCL-Lake-16-000	5
Edmunds	Bowdle-Hosmer	WMC-Lake-125-000	6
	Kraft	NFS-Lake-918-000\	6
	Loyalton, also known as Stafford	NFS-Lake-874-000	5
	North Scatterwood	SNK-Lake-435-000	6
	Mina, also known as Parmley	SNK-Lake-23-001	4
	~~Picton~~	~~NFS-Lake-1008-000~~	~~6~~
	Rosette	SNK-Lake-26-000	6

County	Waterbody	State Lake Identifier	Uses
Fall River	Angostura	ANR-Lake-4-000	4,10
	~~Bochart~~	~~MCS-Lake-180-000~~	~~6~~
	Coffee	ANR-Lake-62-000	5
	Coldbrook	MCS-Lake-5-000	2
	Cottonwood Springs	MCS-Lake-6-000	4
	Crow, also known as Crowe	HAT-Lake-6-000	5
	Dukes	HAT-Lake-26-000	4
	Ebersol	MCS-Lake-91-000	5
	Edgemont Airport North Pond	ANR-Lake-72-000	3
	Edgemont Airport South Pond	ANR-Lake-72-001	5
	~~Ellison~~	~~ANR-Lake-74-000~~	~~5~~
	Fiddle Creek Dam	ANR-Lake-50-000	4
	Five, also known as Fire	ANR-Lake-75-000	5
	Indians South 1	HAT-Lake-25-000	4
	Limestone Butte, also known as Oelrichs Dam	UWH-Lake-6-000	6
	Old Pioneer	UWH-Lake-139-000	5
	Otto	ANR-Lake-68-000	2
	~~Ray~~	~~MCS-Lake-179-000~~	~~5~~
	Sandoz	UWH-Lake-85-000	6
	Sherberth	MCS-Lake-167-000	5
	Sides	MCS-Lake-130-000	5
	South East Highway Canyon	UWH-Lake-53-000	5
	Vanderberg	MCS-Lake-181-000	5
	White	MCS-Lake-76-000	5
	Williams	ANR-Lake-22-000	5
Faulk	Cresbard	NFS-Lake-820-000	5
	Faulkton	SNK-Lake-196-000	5
	Hamak	NFS-Lake-826-000	6
	Latham	SNK-Lake-202-000	6
	Scatterwoods, also known as Scatterwood South	SNK-Lake-435-001	6
	Voegler	SNK-Lake-209-000	6
Grant	Blue Cloud Abbey	UMN-Lake-827-000	5
	Farley	UMN-Lake-517-000	6
	Hunter Granite Quarry	UMN-Lake-850-000	2
	LaBolt	UMN-Lake-1584-000	4
	Summit	UMN-Lake-697-000	5
Gregory	Berry	PON-Lake-89-000	4
	~~Burch, also known as Dixon~~	~~FTR-Lake-5039-000~~	~~5~~
	Burke	FTR-Lake-3197-000	5
	Fairfax	FTR-Lake-5880-000	5
	Herrick, also known as Spendor	PON-Lake-75-000	5
	Ponca, also known as Indian	PON-Lake-142-000	5
	Star	PON-Lake-222-000	6
Haakon	Kroetche	LCH-Lake-374-000	4
	Ottumwa	BAD-Lake-1145-000	6

County	Waterbody	State Lake Identifier	Uses
	Sunshine	BAD-Lake-204-000	4
	Waggoner	BAD-Lake-2426-000	1,4
Hamlin	Clear	UBS-Lake-175-001	6
	Dry	MBS-Lake-405-001	6
	Florence	MBS-Lake-405-002	6
	John, also known as St. John	MBS-Lake-176-701	6
	Marsh	MBS-Lake-160-000	6
	Mary	MBS-Lake-176-002	6
	Norden	MBS-Lake-176-001	6
	Poinsett	MBS-Lake-405-000	5
Hand	Crystal City Park	TUR-Lake-65-000	6
	Dakotah	TUR-Lake-14-000	3
	Jones	TUR-Lake-64-000	5
	Louise	TUR-Lake-155-000	5
	Pearl	MJA-Lake-28-000	5
	~~Rose Hill~~	~~MJA-Lake-614-000~~	~~4~~
Hanson	Alexandria Quarry	LJA-Lake-565-000	2
	Eli	LJA-Lake-678-000	5
	Ethan	LJA-Lake-621-000	5
	Fulton	LJA-Lake-539-000	6
	Hanson	LJA-Lake-425-000	5
	Long	LJA-Lake-714-000	6
Harding	Buffalo, also known as ~~Gardener~~ Gardner	SFG-Lake-581-000	4
	Hanson	NFG-Lake-184-000	3
	Jacobi	SFG-Lake-64-000	3
	Ledger East	SFM-Lake-64-000	6
	Ledger West	SFM-Lake-563-000	5
	Painter	ULM-Lake-220-000	3
	Phillips	UMO-Lake-561-000	3
	Rabbit Creek Dam	UMO-Lake-567-000	5
	Vessey Dam	NFG-Lake-295-000	3
Hutchinson	Dimock	LJA-Lake-34-000	5
	Menno	LJA-Lake-52-000	5
	Silver	VER-Lake-103-000	6
	Tripp	LCL-Lake-24-000	5
Hyde	Boehm	CRW-Lake-891-000	5
	Chapelle	FTR-Lake-3578-001	5
	Holabird	MKN-Lake-242-000	6
	Mission, also known as Stephan or as Ambrose	CRW-Lake-1035-000	6
	Peno	CRW-Lake-48-000	5
	Quirk	CRW-Lake-843-000	5
Jackson	Andrews	BAD-Lake-850-000	6
	Bashen, also known as Bresham	BAD-Lake-854-000	4
	Belevidere	BAD-Lake-1438-000	5
	Brooke No. 1	BAD-Lake-1301-000	4
	Cottonwood Range	BAD-Lake-903-000	4

County	Waterbody	State Lake Identifier	Uses
	Ditmar, also known as Dithmer	MWH-Lake-239-000	5
	Freeman	BAD-Lake-1459-000	4
	Kadoka	BAD-Lake-2118-000	6
	May	MWH-Lake-295-000	5
	Poor Bear	MWH-Lake-60-000	2
	Wheeler No. 1	BAD-Lake-2639-000	4
	Wheeler No. 2	BAD-Lake-2288-000	4
Jerauld	Crow	CRW-Lake-767-000	6
Jones	Draper Dam	MED-Lake-32-000	5
	Murdo	BAD-Lake-2898-000	4
	Murdo Railroad Dam	LWH-Lake-1079-002	5
	National Grasslands Trout Dam		3
	Okaton	BAD-Lake-2188-000	5
	Richland	BAD-Lake-280-000	4
Kingsbury	Agnew	MJA-Lake-419-000	6
	Albert	MBS-Lake-176-000	6
	Arlington Kid's Pond	MBS-Lake-624-000	6
	Badger	MBS-Lake-12-000	6
	Cherry	LKT-Lake-96-000	6
	Henry	LKT-Lake-55-003	6
	~~Iroquois~~	~~MJA-Lake-640-000~~	~~6~~
	Osceola	MJA-Lake-322-000	6
	Spirit	LKT-Lake-95-000	6
	Thisted	MBS-Lake-11-000	6
	Thompson	LKT-Lake-55-000	4
	West 81 Lake, also known as Twin	MBS-Lake-233-000	4
	Whitewood	LKT-Lake-55-002	6
Lake	Badus	MBS-Lake-238-000	6
	Bourne Slough	LBS-Lake-135-004	6
	Brandt	LBS-Lake-135-001	4
	Green	MBS-Lake-221-000	6
	Herman	LBS-Lake-136-000	5
	Long	LBS-Lake-137-000	6
	Madison	LBS-Lake-135-000	4
	Mud Lakes	MBS-Lake-243-000	6
	Round	LBS-Lake-135-002	6
	Winfred	VER-Lake-134-000	6
Lawrence	Columbia	RED-Lake-24-000	3
	Coxes	RED-Lake-6-000	1,2
	Dalton	MCE-Lake-3-000	2
	Dumont Ponds	RAP-Lake-35-000	3
	Iron Creek	RED-Lake-8-000	2
	Mirror 1	RED-Lake-5-000	2
	Mirror 2	RED-Lake-5-001	
	Reausaw	MCE-Lake-4-000	3
	Roubaix	MCE-Lake-5-000	2

County	Waterbody	State Lake Identifier	Uses
	Strawberry Hill Pond	LBF-Lake-800-000	3
	Swede Gulch Beaver Pond	RAP-Lake-57-000	3
	Yates Ponds	RED-Lake-10-000	2
Lincoln	Alvin	LBS-Lake-180-000	4
	Pattee Creek Watershed Reservoir No. 1, also known as Lakota	LBS-Lake-181-000	4
	Pattee Creek Watershed Reservoir No. 2	LBS-Lake-42-000	5
Lyman	Brakke	MED-Lake-667-000	4
	Byre	MED-Lake-25-000	4
	Dybing	MED-Lake-654-000	4
	Fate	MED-Lake-638-000	4
	~~Fenenga~~	~~FTR-Lake-6328-000~~	~~6~~
	~~Jackson~~	~~LWH-Lake-2307-000~~	~~6~~
	~~Kennebec~~	~~MED-Lake-760-000~~	~~6~~
	Knudtson	MED-Lake-564-000	5
	Larson	FTR-Lake-4666-000	5
	National Grasslands Dam (Ft. Pierre National Grassland Dam), also knows as Trout	BAD-Lake-320-000	4
	Reliance	FTR-Lake-3897-000	4
McCook	Baureles, also known as Schultz	LJA-Lake-751-001	6
	Forsch	LJA-Lake-749-000	6
	Gross	LJA-Lake-745-000	6
	Jansen	LJA-Lake-298-000	6
	Lerhman	LJA-Lake-725-000	6
	Sabers	LJA-Lake-374-000	6
	Schimmels	LJA-Lake-743-001	6
	Tuschens	LJA-Lake-743-000	6
	Vermillion	VER-Lake-62-000	4
McPherson	Eureka No. 1	WMC-Lake-1372-002	5
	Eureka No. 2	WMC-Lake-1372-000	5
	Hillview	WMC-Lake-133-002	6
	Leola	UJA-Lake-756-000	6
	Long	WMC-Lake-521-000	6
	Rau, also known as Rath	WMC-Lake-774-003	6
	Twin	WMC-Lake-526-000	6
	Wolff	ULO-Lake-683-000	5
Marshall	Abraham	WWR-Lake-260-000	6
	Almos	~~UJA-Lake-917-003~~ UJA-Lake-917-701	6
	Buffalo North	UJA-Lake-917-800	5
	Buffalo South	UJA-Lake-917-000	5
	Bullhead	UJA-Lake-866-022	5
	Cattle/Kettle Lake System	UJA-Lake-866-000	6
	Clear	UJA-Lake-917-001	4
	Cottonwood	UJA-Lake-882-000	5
	Crystal, also known as Howley	UJA-Lake-416-000	6

County	Waterbody	State Lake Identifier	Uses
	~~Sinclair~~	~~LWH Lake 2311 000~~	~~6~~
	White River, also known as Putranele	LIW-Lake-207-000	4
Miner	Carthage	MJA-Lake-598-000	4
Minnehaha	Baltic	LBS-Lake-276-000	6
	Beaver	LBS-Lake-70-000	6
	Clear	LBS-Lake-232-000	6
	Covell	LBS-Lake-90-000	6
	Dell Rapids	LBS-Lake-289-000	6
	Diamond	LBS-Lake-223-000	5
	Garretson	LBS-Lake-287-000	6
	Grass	LBS-Lake-82-000	6
	Island	LBS-Lake-213-000	5
	Loss	VER-Lake-10-000	6
	Lost	LBS-Lake-60-000	6
	Scott	LBS-Lake-65-000	6
	Twin Lakes	LBS-Lake-204-000	4
	Wall	LBS-Lake-95-000	5
Moody	Allen	LBS-Lake-123-000	6
	Flandreau	LBS-Lake-110-001	6
	Lester Anderson GPA	LBS-Lake-225-000	6, no 7
Pennington	Alexander, also known as Medicine Mountain Boy Scout Camp	MCS-Lake-72-000	2
	Big Foot	BAD-Lake-2220-000	6
	Bloom	BAD-Lake-482-000	5
	Bruce	MCE-Lake-54-000	5
	Canyon	RAP-Lake-3-000	1,2
	~~Caspers Dam~~	~~BAD Lake 2647 000~~	~~5~~
	Cement Plant	RAP-Lake-34-000	2
	Conata	MWH-Lake-402-000	6
	Deerfield	RAP-Lake-31-000	2
	Eisenbaum	LCH-Lake-627-000	6
	~~Farmingdale Dam~~	~~RAP Lake 56 000~~	~~5~~
	Farmingdale National Grasslands	RAP-Lake-8-000	3
	Gage	BAD-Lake-484-000	5
	Hamann	LCH-Lake-54-000	5
	Hanlon	MCS-Lake-184-000	3
	Hoffman	LCH-Lake-71-000	5
	Horsetheif	MCS-Lake-8-000	2
	Imby	UWH-Lake-151-000	6
	Johnson	BAD-Lake-476-000	6
	Kellam Dam	MCE-Lake-108-000	5
	Koopman Dam	MCS-Lake-40-000	3
	Major	MCS-Lake-9-000	3
	Mako Sica	MCE-Lake-56-000	5
	Missle Allotment	BAD-Lake-2213-000	4
	New Underwood	MCE-Lake-8-000	4
	New Wall No. 1	MCE-Lake-9-000	4

County	Waterbody	State Lake Identifier	Uses
	Newton Fork	MCS-Lake-10-000	2
	North White Water	BAD-Lake-1907	4
	Old Wall	MCE-Lake-214-000	5
	Owonka	MCE-Lake-219-000	6
	Pactola	RAP-Lake-1-000	1,2,10
	Pierce	LCH-Lake-108-000	5
	Quinn Dam	BAD-Lake-613-000	5
	Quinn Township Dam	BAD-Lake-2236-000	5
	Rapid City	RAP-Lake-27-000	5
	Richardson	LCH-Lake-159-000	6
	Roosevelt Pond	RAP-Lake-37-000	5
	Scanlon	MCS-Lake-48-000	3
	Schroeder	LCH-Lake-626-000	6
	Schulte	MCE-Lake-217-000	5
	Sheridan	MCS-Lake-11-000	2
	Slate Creek	RAP-Lake-33-000	3
	Smith Dam	LCH-Lake-73-000	5
	Table 71 Dam	MCE-Lake-116-000	5
	Tennyson Dam	BAD-Lake-2235-000	5
	Teuber Dam	LCH-Lake-94-000	5
	U.S.D.A. Trout Dam	BAD-Lake-3556-000	3
	White	MCE-Lake-134-000	5
	Wicksville	MCE-Lake-10-000	4
Perkins	Ada Dam	UMO-Lake-354-000	6
	Coal Springs	LMO-Lake-1689-000	4
	Cole	SFG-Lake-913-000	4
	Dam No. 73 (on National Grasslands)	SFG-Lake-1020-000	3
	Flat Creek	GRA-Lake-767-000	5
	Imogene	UMO-Lake-224-000	6
	Jensen	SFG-Lake-902-000	3
	Johnson	NFG-Lake-81-000	3
	Lemmon State	GRA-Lake-392-000	5
	Lewton	SFG-Lake-873-000	5
	Marshfield	SFG-Lake-897-000	5
	Meadow	SFG-Lake-983-000	6
	Owen Lake	LMO-Lake-397-000	5
	~~Peck~~	~~GRA-Lake-1002-000~~	~~6~~
	Perkins	LMO-Lake-408-001	5
	Reidy	GRA-Lake-92-000	6
	Rowhotham	LMO-Lake-408-000	5
	Seymour	UMO-Lake-40-000	6
	Shadehill	SFG-Lake-1017-000	4,10
	Sorum Dam	UMO-Lake-25-000	5
	Viking	NFG-Lake-166-000	5
	Vobedja	NFG-Lake-132-000	6
	Week's Dam	SFG-Lake-747-000	3

County	Waterbody	State Lake Identifier	Uses
	White Butte	GRA-Lake-683-000	6
	Whitehill	SFG-Lake-752-000	5
Potter	Gorman	LLO-Lake-2397-000	5
	Hurley	LLO-Lake-2201-000	4
	Potts	LLO-Lake-2378-000	5
	Simon	LLO-Lake-2144-000	5
Roberts	Big Stone	UMN-Lake-720-000	4,10
	Drywood North	UMN-Lake-476-000	6
	Drywood South	UMN-Lake-476-005	6
	Hurricane	UBS-Lake-207-000	6
	Mud	BDS-Lake-182-000	6
	One Road	UBS-Lake-345-031	6
	Traverse	BDS-Lake-181-000	4,10
	Whitestone	UMN-Lake-667-000	5
Sanborn	Letcher	LJA-Lake-653-000	6
	Prior, also known as Woonsocket City Park	LJA-Lake-531-000	6
	Twin	LJA-Lake-290-000	5
Oglala Lakota	Denby	UWH-Lake-25-000	2
	Kyle	UWH-Lake-17-000	4
	Oglala	UWH-Lake-101-000	4
	White Clay	UWH-Lake-1-000	4
	~~Wolf Creek~~	~~UWH-Lake-152-000~~	~~2~~
Spink	Bierman	SNK-Lake-372-000	4
	Cottonwood	TUR-Lake-498-000	6
	Dudley	MJA-Lake-461-000	4
	Mirage Dam	MJA-Lake-605-000	4
	Redfield	TUR-Lake-1-000	6
	Timber Creek Dam	MJA-Lake-644-000	6
	Twin	TUR-Lake-589-000	5
Stanley	Hayes	BAD-Lake-3119-000	5
	~~Red Plum~~	~~BAD-Lake-3555-000~~	~~5~~
	Smith Pond (Ft. Pierre National Grassland)	FTR-Lake-3716-000	3
Sully	Cottonwood	LLO-Lake-2428-000	5
	Fuller	LLO-Lake-2464-000	5
	Okobojo	LLO-Lake-2524-000	6,10
	Post	MKN-Lake-148-000	6
	Sully	LLO-Lake-2457-000	6
Todd	Beads	LIW-Lake-161-000	4
	Boarding School	~~LIW-Lake-161-000~~ KYP-Lake-4-000	4
	Chases Woman	LIW-Lake-110-000	2
	Colombe	KYP-Lake-2-000	5
	Eagle Feather, also known as Parmlee	LIW-Lake-23-000	4
	Enemy Woman	LWH-Lake-1878-000	6

County	Waterbody	State Lake Identifier	Uses
	Ghost Hawk	LIW-Lake-106-000	3
	He Dog	LIW-Lake-25-000	4
	Heifer	LIW-Lake-105-000	5
	Hidden Timber	KYP-Lake-34-000	6
	Indian Scout	LIW-Lake-107-000	5
	Ironwood	LIW-Lake-109-000	3
	~~Mission~~	~~KYP Lake 284 000~~	~~5~~
	Omaha Boy	LIW-Lake-283-000	5
	~~Parmlee~~		~~5~~
	Rosebud	LIW-Lake-108-000	2
	Sharps		2
	~~Spotted Tail~~	~~LIW Lake 282 000~~	~~3~~
	Swift Bear	LIW-Lake-123-000	4
Tripp	Beaulieu	LWH-Lake-458-000	6
	Big Dog Ear	KYP-Lake-4-000	6
	~~Carter~~	~~LWH Lake 2310 000~~	~~5~~
	Dog Ear	KYP-Lake-116-000	5
	Irwin	FTR-Lake-3116-000	6
	King	LWH-Lake-529-000	5
	Lone Tree	LWH-Lake-126-000	5
	Rahn	KYP-Lake-122-000	4
	Roosevelt	PON-Lake-203-000	4
	Sinkler	LWH-Lake-1372-000	6
	Snow	LWH-Lake-801-000	6
	Sully	FTR-Lake-5029-000	5
	Sundahl	KYP-Lake-95-000	5
	~~Witten~~	~~LWH-Lake-2309-000~~	~~5~~
	Woolheizer	KYP-Lake-136-000	5
Turner	Marion Kid's Pond	VER-Lake-293-000	6
	Swan	VER-Lake-113-000	5
Union	~~Cole~~	~~LBS Lake 283 000~~	~~6~~
	McCook	LCL-Lake-5-000	4
	Mud	LCL-Lake-74-000	8 only
	Nixon	LBS-Lake-233-000	6
Walworth	Hiddenwood	WMC-Lake-1312-000	5
	Molstad	ULO-Lake-370-000	4
	Spring	LLO-Lake-239-000	6
	Swan	LLO-Lake-512-000	6
Yankton	Beaver, also known as State	LJA-Lake-371-000	6
	Marindahl	VER-Lake-276-000	4
	Westside Kid's Pond	LCL-Lake-69-000	6
	Yankton	LCL-Lake-72-000	4
Ziebach	Bedner	LMO-Lake-29-000	6
	Buffalo	LCH-Lake-204-000	4
	Glad Valley	GRA-Lake-271-000	5
	Matter	LMO-Lake-197-000	6

County	Waterbody	State Lake Identifier	Uses
	Miller	LCH-Lake-541-000	4
	~~Rattlesnake~~	~~CHE-Lake-676-000~~	~~6~~
	Trent Dam	LMO-Lake-677-000	6

Source: SL 1975, ch 16, § 1; 4 SDR 32, effective December 4, 1977; transferred from § 34:04:03:04, effective July 1, 1979; 13 SDR 129, 13 SDR 141, effective July 1, 1987; 19 SDR 111, effective January 31, 1993; transferred from § 74:03:03:04, July 1, 1996; 41 SDR 109, effective January 12, 2015; SL 2015, ch 56, § 1, effective May 1, 2015; 47 SDR 110, effective April 27, 2021.

General Authority: SDCL 34A-2-10, 34A-2-11, 34A-2-93.

Law Implemented: SDCL 34A-2-10, 34A-2-11.

Questions/Comments on updates to Lakes?

Updates/Corrections to Streams

- Update/Correct 74:51:03 Uses assigned to streams
  - Missouri River – Lake Sharpe (Big Bend Dam to Oahe Dam)
    - DANR conducted a study
    - Recommend update from a (2) coldwater fish life propagation use to a (4) warmwater fish life aquatic use
    - Based on temperature conditions influenced by water management of both dams, lack of permanent coldwater habitat outside of Oahe tail race, and no thermal stratification in reservoir
    - Proposed (4) Warmwater use definition still accounts for presence of stocked coldwater fish

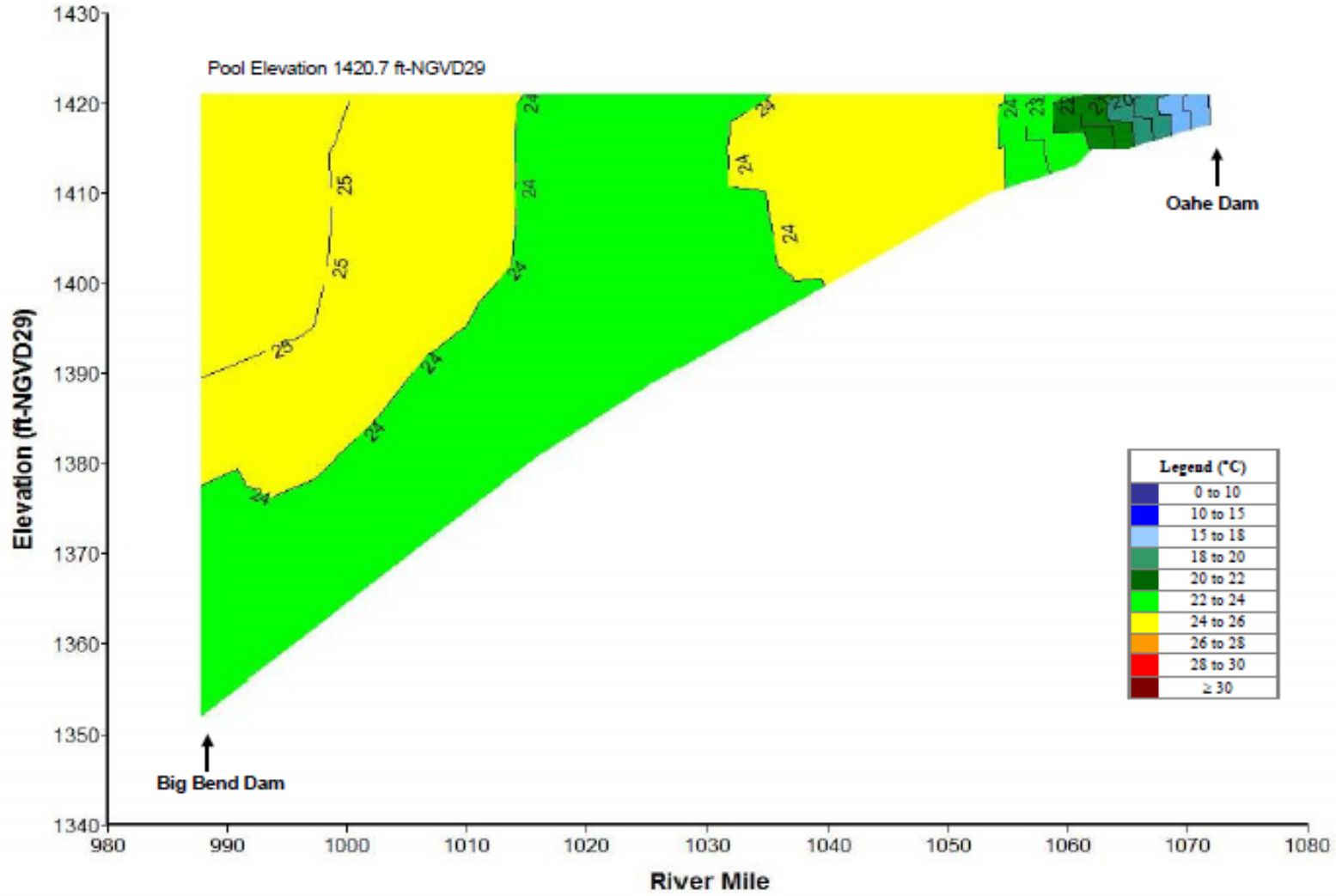


Plate 8-7. Longitudinal water temperature (°C) contour plot of Lake Sharpe based on depth-profile water temperatures measured at sites BBDLK0987A, BBDLK1020DW, BBDLK1055DW and OAHPP1 on July 27, 2016.

No thermal stratification in Sharpe – no coldwater habitat or refuge for coldwater fish species
Coldwater permanent temperature criterion (65F or 18.3C) only met (at times) below Oahe dam
Warmwater permanent (80F or 26.6C) met

74:51:03:05. Missouri River and certain small tributaries' beneficial uses. Stream segments of the Missouri River and certain small tributaries covered by § 74:51:03:02 include the following:

Water Body	From	To	Beneficial Uses	County
Missouri River	Iowa Border	~~Big Bend~~ Oahe Dam	1,4,7,8,11	~~Buffalo\Lyman~~ Hughes/Stanley
Missouri River	~~Big Bend~~ Oahe Dam	North Dakota border	1,2,7,8,11	Campbell\Corson

Updates/Corrections to Streams

- Update/Correct 74:51:03 Uses assigned to streams
  - Correct the spelling of Emanuel Creek in 74:51:03:05
  - Correct to/from location for Pipestone Creek and Spring Creek (Moody) in 74:51:03:07
- These are just corrections to errors – not changes to the extent of reach or change of use

74:51:03:05. Missouri River and certain small tributaries' beneficial uses. Stream segments of the Missouri River and certain small tributaries covered by § 74:51:03:02 include the following:

Water Body	From	To	Beneficial Uses	County
Missouri River	Iowa Border	~~Big Bend~~ Oahe Dam	1,4,7,8,11	~~Buffalo\Lyman~~ Hughes/Stanley
Missouri River	~~Big Bend~~ Oahe Dam	North Dakota border	1,2,7,8,11	Campbell\Corson
American Creek	Lake Francis Case	Lake Wanalin	6,8	Brule
American Crow Creek	Lake Francis Case	Interstate 90	6,8	Lyman
Bull Creek	Lake Frances Case	the confluence with the West Branch Bull Creek in S25, T100N, R74W	6,8	Tripp
West Branch Bull Creek	Bull Creek	S23, T99N, R74W of the fifth principal meridian	6,8	Tripp
Artichoke Creek	Lake Oahe	S35, T117N, R79W	6,8	Sully
Cedar Creek	Lake Sharpe	S22, T108N, R76W	6,8	Lyman
Chapelle Creek	Lake Sharpe	S36, T111N, R75W	6,8	Hughes
Choteau Creek	Lewis and Clark Lake	S34, T96N, R63W	5,8	Charles Mix
Dante Creek	Choteau Creek	Dante Lake	6,8	Charles Mix
Dry Choteau Creek	Choteau Creek	S.D. Highway 50	6,8	Charles Mix
Crow Creek	Lake Francis Case	S18, T107N, R67W	5,8	Jerauld
Elm Creek	Crow Creek	West Fork Elm Creek	6,8	Buffalo
West Fork Elm Creek	Elm Creek	Stephan Lake	6,8	Hyde
Smith Creek	Crow Creek	Crow Lake	6,8	Jerauld
~~Emanual~~ Emanuel Creek	Lewis and Clark Lake	S20, T94N, R60W	5,8	Bon Homme
Little Cheyenne Creek	Lake Oahe	Lake Hurly	5,8	Potter
Medicine Creek	Lake Sharpe	U.S. Highway 83	6,8	Lyman
Medicine Knoll Creek	Lake Sharpe	confluence with its north and south forks	6,8	Hughes
North Fork Medicine Knoll Creek	confluence with South Fork Medicine Knoll Creek	S7, T114N, R74W	6,8	Sully
South Fork Medicine Knoll Creek	confluence with North Fork Medicine Knoll Creek	S16, T112N, R74W	6,8	Hughes

Water Body	From	To	Beneficial Uses	County
Park Creek	Bourne Slough	Silver Creek	6,8	Lake
Silver Creek	Park Creek	Lake Herman	6,8	Lake
Six Mile Creek	North Deer Creek	S30, T112N, R48W	6,8	Brookings
College Creek	Big Sioux River	S12, T110N, R50W	6,8	Brookings
North Deer Creek	Big Sioux River	U.S. Highway 15	6,8	Deuel
Skunk Creek	Big Sioux River	outlet of Brant Lake	6,8	Lake
Unnamed tributary Skunk Creek	Skunk Creek	S21, T102N, R51W	6,8	Minnehaha
Willow Creek	Skunk Creek	S16, T102N, R50W	6,8	Minnehaha
Split Rock Creek	Big Sioux River	Minnesota border	5,7,8	Minnehaha
West Pipestone Creek	Split Rock Creek	S33, T105N, R48W	6,8	Minnehaha
Unnamed tributary of West Pipestone Creek	West Pipestone Creek	Confluence with an unnamed tributary in S9, T103N, R48W	5,8	Minnehaha
Unnamed tributary	Unnamed tributary of West Pipestone Creek	EROS outfall in S8, T103N, R48W	5,8	Minnehaha
Slip-Up Creek	Big Sioux River	to its headwaters in S19, T104N, R48W	6,8	Minnehaha /Moody
Pipestone Creek	~~Split Rock Creek~~ S22, T104N, R47W	Minnesota border	5,7,8	Minnehaha
Strayhorse Creek	Big Sioux River	S26, T116N, R51W	6,8	Codington
Spring Creek (Moody County)	Big Sioux River	~~S22, T109, R47W~~ Minnesota border	6,8	Brookings
Jack Moore Creek	Big Sioux River	S33, T107N, R49W	6,8	Moody
Union Creek	Big Sioux River	confluence with East and West Forks	6,8	Union
Indian River	Big Sioux River	U.S. Highway 81	6,8	Grant
Willow Creek	Big Sioux River	S7, T117N, R50W	6,8	Deuel

Source: SL 1975, ch 16, § 1; 4 SDR 32, effective December 4, 1977; transferred from § 34:04:04:06, effective July 1, 1979; 10 SDR 145, effective July 4, 1984; 13 SDR 129, 13 SDR 141, effective July 1, 1987; 19 SDR 111, effective January 31, 1993; transferred from § 74:03:04:06, July 1, 1996; 24 SDR 10, effective July 20, 1997; 31 SDR 29, effective September 13, 2004; 32 SDR 38, effective September 6, 2005; 35 SDR 253, effective May 12, 2009; 41 SDR 109, effective January 12, 2015; 47 SDR 110, effective April 27, 2021.

General Authority: SDCL 34A-2-10, 34A-2-11, 34A-2-93.

Law Implemented: SDCL 34A-2-10, 34A-2-11.

Questions/Comments to Streams?

Other Corrections

(5) Those chemicals which are not individually classified as carcinogens but which are contained within a class of chemicals with carcinogenicity as the basis for the criteria derivation for that class of chemicals; an individual carcinogenicity assessment for these chemicals is pending.

(6) For pH-dependent criteria, the value given is an example only and is based on a pH of 7.8. Criteria for each case must be calculated using the following equation taken from National Recommended Water Quality Criteria: 2002 (EPA-822-R-02-047, November 2002):

Pentachlorophenol (PCP), ug/L
Chronic = $e^{[1.005(pH) - 5.134]}$ Acute = $e^{[1.005(pH) - 4.869]}$

(7) For hardness-dependent criteria in ug/L, the value given is an example only and is based on a $CaCO_3$ hardness of 100 mg/L. Criteria for each case must be calculated using the following equations taken from National Recommended Water Quality Criteria: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#hhtable~~, June 2013~~:

Cadmium, ug/L
Chronic = (*~~0.909~~ CF)$e^{(~~0.7409~~ 0.7977[ln(hardness)]-~~4.719~~ 3.909)}$
Acute = (*~~0.944~~ CF)$e^{(~~1.0166~~ 0.9789[ln(hardness)]-~~3.924~~ 3.866)}$

*Conversion factors are hardness-dependent. The values shown are with a hardness of 100 mg/L as calcium carbonate ($CaCO_3$). Conversion factors (CF) (from total to dissolved) for any hardness can be calculated using the following equations:

Chronic: CF = 1.101672 - [(ln hardness)(0.041838)]
Acute: CF = 1.136672 - [(ln hardness)(0.041838)]

Chromium (III), ug/L
Chronic = (0.860)$e^{(0.8190[ln(hardness)]+0.6848)}$ Acute = (0.316)$e^{(0.8190[ln(hardness)]+3.7256)}$

Copper, ug/L
Chronic = (0.960)$e^{(0.8545[1n(hardness)]-1.702)}$ Acute = (0.960)$e^{(0.9422[ln(hardness)]-1.700)}$

Lead, ug/L
Chronic = (*~~0.791~~ CF)$e^{(1.273[ln(hardness)]-4.705)}$
Acute = (*~~0.791~~ CF)$e^{(1.273[ln(hardness)]-1.460)}$

*Conversion factors are hardness-dependent. The values shown are with a hardness of 100 mg/L as calcium carbonate ($CaCO_3$). Conversion factors (CF) (from total to dissolved) for any hardness can be calculated using the following equations:

Acute and Chronic: CF = 1.46203 - [(ln hardness)(0.145712)]

Nickel, ug/L
Chronic = (0.997)$e^{(0.8460[ln(hardness)]+0.0584)}$ Acute = (0.998)$e^{(0.8460[ln(hardness)]+2.255)}$

Silver, ug/L
Acute = (0.85)$e^{(1.72[ln(hardness)]-6.59)}$

Zinc, ug/L
Chronic = (0.986)$e^{(0.8473[ln(hardness)]+0.884)}$ Acute = (0.978)$e^{(0.8473[ln(hardness)]+0.884)}$

(8) These criteria are based on the total-recoverable fraction of the metal.

(9) This criterion applies to total pcbs, (e.g. the sum of congener or all isomer or homolog or Aroclor analyses).

Form/style

74:51:01:01. Definitions. Words and phrases defined in SDCL 34A-2-2, have the same meaning when used in chapters 74:51:01 ~~to~~ through 74:51:03, inclusive. Terms and abbreviations which are not specifically defined shall be construed in conformance with the context and in relation to the applicable section of the standards or the statute concerned. In addition, terms used in chapters 74:51:01 ~~to~~ through 74:51:03, inclusive, are defined as follows:

(1) "Attainable beneficial uses," those beneficial uses which, at a minimum, can be achieved by the imposition of effluent limits required under §§ 74:51:01:07, 74:51:01:08, and 74:51:01:17 ~~to~~ through 74:51:01:21, inclusive, and cost-effective and reasonable best management practices for nonpoint source control;

(2) "Aquatic life," an organism dependent on the water environment to either propagate or survive, or both;

(3) "Aquatic community," an association of interacting populations and stages of aquatic life in a given water body or habitat;

(4) "Best management practices," "BMPs," schedules of activities, prohibitions of practice, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters of the state on a voluntary basis, including treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge, waste disposal, or drainage from raw material storage;

(5) "Bioaccumulative pollutants," those pollutants which are taken up, retained, or accumulated in the bodies of organisms and are transferred by ingestion in increasing concentrations in the predator organisms to the point that one or more organisms in the food chain suffer significant harm;

(6) "Bioassay," a procedure in which the responses of organisms are used to detect or measure the presence or effect of one or more substances, wastes, effluents, or environmental factors, alone or in combination;

(7) "Biochemical oxygen demand," a standardized laboratory test used to determine the relative oxygen requirements of waters and wastewaters;

(8) "Biological integrity," the ability to support and maintain a balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of the natural habitat of the region;

(9) "Black Hills Trout Management Area," defined by the South Dakota Department of Game, Fish and Parks as all the waters in the Black Hills within the following boundary: from the South Dakota-Wyoming state line and the Redwater River (inclusive) to U.S. Highway 85, then south on U.S. Highway 85 to I-90, then southeast on I-90 to U.S. Highway 16T (16B in Rapid City), then south on U.S. Highway 16T to S.D. Highway 79, then south on S.D. Highway 79 to Maverick Junction, then west on Highway 18 to Edgemont, then northwest along the Burlington Northern

SWQS Proposed Rule Changes

- Background
- Summary of (preliminary) Proposed Changes
- Outreach Planned
- Next Steps

Outreach Planned

- Stakeholder outreach will help finalize proposed rule package
- August 2022 - Press Release and Teams Meeting with Interested parties (this meeting!)
- Any Interested parties may set up individual meetings or calls to discuss specific changes

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Next Steps

- Public Outreach (continued)
- 45-day public comment period -October 2022
  - Submit any written comments during this time!
- Public Hearing before Water Management Board - December 2022
- Rules Review Committee
- File with Secretary of State
- EPA Approval

Questions/Comments?

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