

**National Pollutant Discharge Elimination System (NPDES)/
State Disposal System (SDS) Permit Program Fact Sheet
Permit Reissuance and Chloride Water Quality Variance
MN0047325**

Permittee: City of Avon
PO Box 69
Avon, Minnesota 56310-0069

Facility name: Avon Wastewater Treatment Facility
300 Angelfish Avenue
Avon, Minnesota 56310

Current permit expiration date: March 31, 2017

Public comment period begins: May 6, 2019

Public comment period ends: July 5, 2019

Receiving water: Spunk Creek - Class 2Bg, 3C, 4A, 4B, 5, 6 water

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Purpose and participation*Applicable statutes*

This fact sheet has been prepared according to the 40 CFR § 124.8(a) and 124.56 and Minn R. 7001.0100, subp. 3 in regards to a draft National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) permit to operate wastewater treatment facilities, discharge into waters of the State of Minnesota, and to grant a variance from the chloride water quality standard.

Purpose

This fact sheet outlines the principal issues related to the preparation of this draft permit and documents the decisions that were made in the determination of the effluent limitations, chloride water quality variance, and conditions of this permit.

Public participation

You may submit written comments on the terms of the draft permit, the chloride water quality variance, or on the Commissioner's preliminary determination. Your written comments must include the following:

1. A statement of your interest in the permit application or the draft permit.
2. A statement of the action you wish the Minnesota Pollution Control Agency (MPCA) to take, including specific references to sections of the draft permit that you believe should be changed.
3. The reasons supporting your position, stated with sufficient specificity as to allow the Commissioner to investigate the merits of your position.

In addition, you may submit a petition for a contested case hearing. A contested case hearing is a formal hearing before an administrative law judge. Your petition requesting a contested case hearing must include a statement of reasons or proposed findings supporting the MPCA decision to hold a contested case hearing pursuant to the criteria identified in Minn. R. 7000.1900, subp. 1 and a statement of the issues proposed to be addressed by a contested case hearing and the specific relief requested. To the extent known, your petition should include a proposed list of witnesses to be presented at the hearing, a proposed list of publications, references or studies to be introduced at the hearing, and an estimate of time required for you to present the matter at hearing.

You must submit all comments, requests, and petitions during the public comment period identified on page one of this notice. All written comments, requests, and petitions received during the public comment period will be considered in the final decisions regarding the permit. If the MPCA does not receive any written comments, requests, or petitions during the public comment period, the Commissioner or other MPCA staff as authorized by the Commissioner will make the final decision concerning the draft permit.

As required by Minn. R. 7050.0190, subp. 6, the Commissioner has scheduled a public hearing at the following time and location:

June 27, 2019 from 4:30 p.m. – 6:30 p.m.
Avon City Hall
140 Stratford Street East
Avon, MN 56310

The hearing will entail a brief summary presentation, an opportunity to ask clarifying questions, and a period to make verbal comments regarding the preliminary variance decision. Forms to submit written comments will also be available.

Comments, petitions, and/or requests must be submitted by the last day of the public comment period to:

Holly Kvittum
Minnesota Pollution Control Agency
714 Lake Avenue, Suite 220
Detroit Lakes, MN 56501

The permit will be reissued if the MPCA determines that the proposed Permittee or Permittees will, with respect to the Facility or activity to be permitted, comply or undertake a schedule to achieve compliance with all applicable state and federal pollution control statutes and rules administered by the MPCA and the conditions of the permit and that all applicable requirements of Minn. Stat. ch. 116D and the rules promulgated thereunder have been fulfilled.

More detail on all requirements placed on the Facility may be found in the Permit document.

Facility description

Background information

Facility location

The Avon Wastewater Treatment Facility (Facility) is an existing municipal wastewater treatment Facility that treats wastewater from the community of Avon. The Facility is located in the Southeast $\frac{1}{4}$ of the Northeast $\frac{1}{4}$ of Section 22, Township 125 North, Range 30 West, City of Avon, Avon Township, Stearns County, Minnesota (latitude: 45.61992421, longitude: -94.44485466). The address for the Facility is 300 Angelfish Avenue Avon, Minnesota 56310. The Facility is approximately north-northeast of the city of Avon.

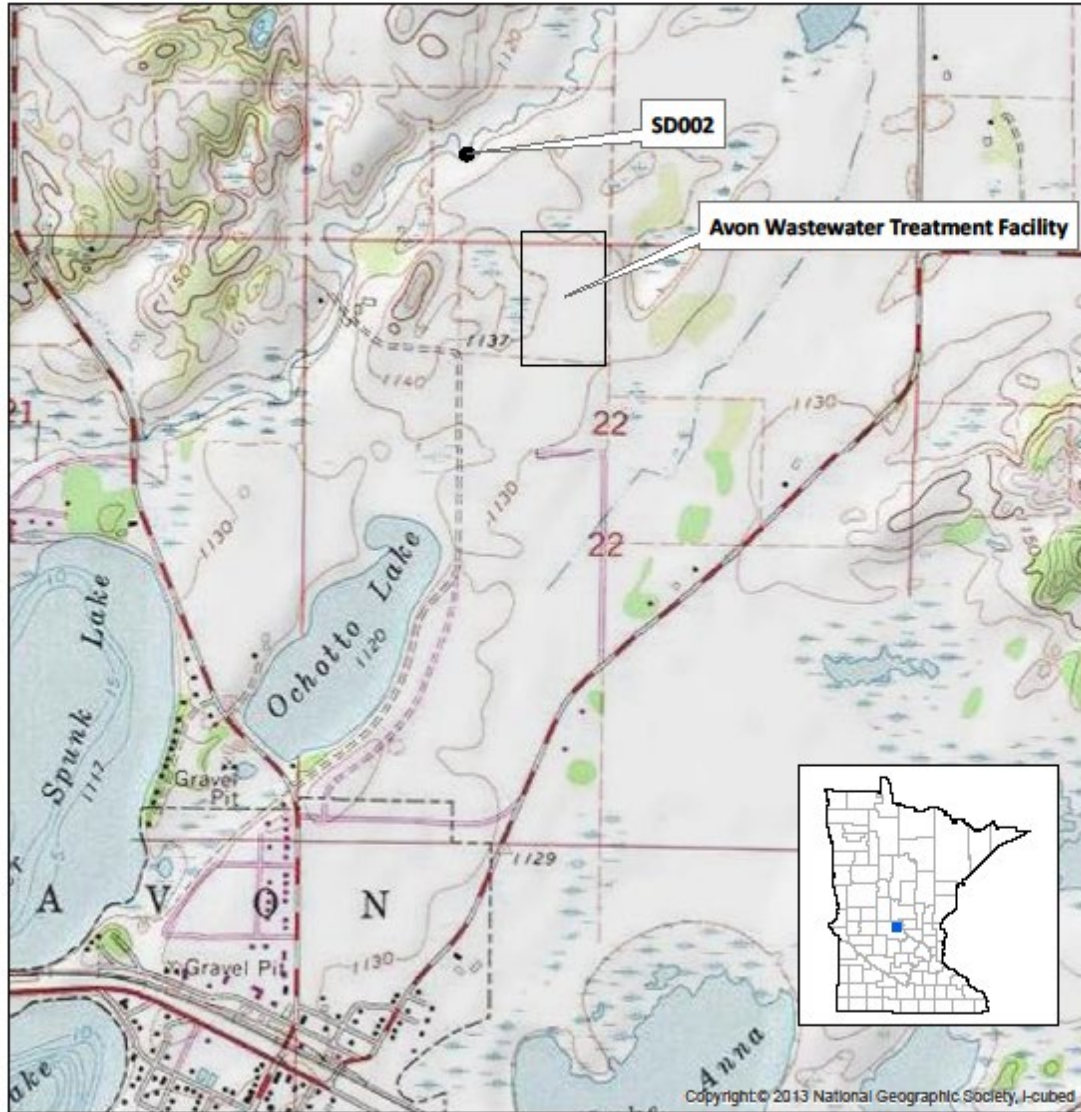
Outfall location

The outfall (SD 002) for the Facility is located in the SW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 15, Township 125 North, Range 30 West, City of Avon, Stearns County, Minnesota. The outfall is approximately 0.25 miles north-northwest of the Facility and has a continuous discharge to Spunk Creek. Latitude and Longitude of the outfall SD002 is 45.6319314 and -94.44408602, respectively.

Map of permitted Facility

Topographic Map of Permitted Facility

MN0047325: Avon Wastewater Treatment Facility
T125N, R30W, Section 22
Avon, Stearns County, Minnesota



Map produced by: MPCA Staff, 9/16/2016
Scale: 1:15,000

0 0.15 0.3 0.6 Miles

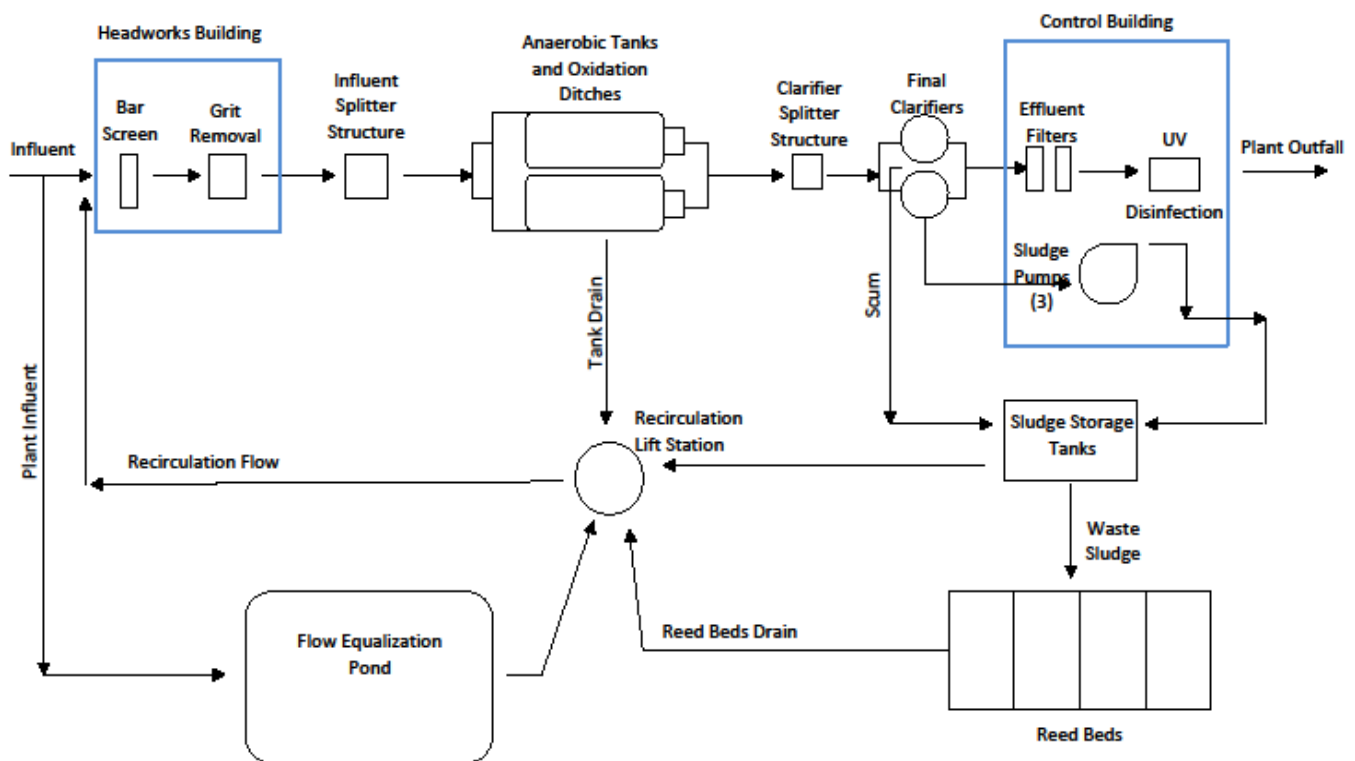
Components and treatment technology

Current information

The existing Facility is designed to treat an average wet weather flow of 422,000 gallons per day (gpd) with a five-day carbonaceous biochemical oxygen demand strength of 275 milligrams per liter. The Facility has a continuous discharge to Spunk Creek (Class 2Bg, 3C, 4A, 4B, 5, 6 Water). The Facility has 24-hour composite influent and effluent samplers, flow equalization, bar screen, grit removal, two activated sludge units (extended aeration, oxidation ditches) with anaerobic selector tanks, two final clarifiers, and two effluent sand filters followed by UV disinfection. The Facility also has a 3.1 acre (measured at the four-foot operating depth) stabilization pond available for flow equalization. The Facility handles solids through the use of two aerated biosolids holding tanks and biosolids reed beds; the dried biosolids are land applied on nearby fields. This is a Class A Facility.

There are no known bypass or overflow points known to exist in this treatment system. The Facility is further described in plans and specifications on file with the Minnesota Pollution Control Agency (MPCA).

Flow schematic



Avon WWTP
Flow Schematic

Changes to Facility or operation

There have been no changes to the Facility since the last permit issuance. The Permittee does not propose any changes during the next permit issuance.

Significant industrial users (SIUs)

The Facility does not have any SIUs or categorical industrial users (CIUs) at this time.

Recent compliance history

A Compliance Evaluation Inspection (CEI) occurred on December 13, 2018 by Justin Barrick of the MPCA. The CEI consisted of a visual inspection of the Facility and a discussion with Jon Forsell, Utilities Supervisor, City of Avon. There was also a review of the monthly discharge monitoring reports (DMRs) for the time period of May 2012 to present. Based on the results of the inspection, there no violations of the terms and conditions set forth in the National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) permit.

Recent monitoring history

Surface Discharge Station SD002 - Discharge Monitoring Report Summary from January 2018 through December 2018

Parameter Desc	Limit	Units	Limit Type	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bicarbonates (HCO3)		mg/L	CalMoMax	305	280	289	280	273	275	223	246	251	300	263	310
CBOD5	5	mg/L	CalMoAvg	1.1	1.1	1	0.94	0.91	0.68	0.86	0.44	0.85	0.38	0.82	0.53
CBOD5	8	kg/d	CalMoAvg	0.4	0.3	0.4	0.3	0.3	0.2	0.3	0.2	0.3	0.2	0.31	0.2
CBOD5	10	mg/L	MxCalWkAvg	2.4	1.4	2	1.5	1.6	0.95	1.7	0.75	1.5	1.3	2.1	0.85
CBOD5	16	kg/d	MxCalWkAvg	0.8	0.4	0.7	0.5	0.6	0.3	0.6	0.3	0.6	0.5	0.9	0.3
CBOD5 % Removal	85	%	MnCalMoAvg	99	99	99	99	99	99	99	99	99	99	99	99
Calcium, Total (as Ca)		mg/L	CalMoMax	76	79	78	78	91	90	75	75	70	74	85	77
Chloride, Total		mg/L	CalMoMax	503	542	506	475	464	474	485	453	506	508	496	517
Fecal Coliform	200	#/100ml	CalMoGeom				1.1	1.1	1	3.2	1.1	2	1		
Flow		mgd	CalMoAvg	0.089	0.082	0.088	0.095	0.096	0.099	0.099	0.099	0.101	0.105	0.101	0.095
Flow		mgd	CalMoMax	0.098	0.09	0.104	0.112	0.112	0.117	0.113	0.124	0.112	0.124	0.114	0.106
Flow		Mgal	CalMoTot	2.765	2.288	2.743	2.861	2.979	2.961	3.082	3.07	3.038	3.246	3.017	2.95
Hardness, Calcium & Magnesium, Calculated (as CaCO3)		mg/L	CalMoMax	302	319	311	300	361	333	308	307	284	307	327	314
Magnesium, Total (as Mg)		mg/L	CalMoMax	27	29	28	25	33	27	30	29	26	30	28	30
Mercury, Total (as Hg)		ng/L	CalMoMax	0						0					
Nitrite Plus Nitrate, Total (as N)		mg/L	CalMoAvg				22					21			
Nitrogen, Ammonia, Total (as N)	1	mg/L	CalMoAvg						0.05	0.01	0.02	0			
Nitrogen, Ammonia, Total (as N)	1.6	kg/d	CalMoAvg						0.02	0.004	0.01	0.04			
Nitrogen, Ammonia, Total (as N)	3.1	mg/L	CalMoAvg										0.1	0	

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Nitrogen, Ammonia, Total (as N)	4.2	mg/L	CalMoAvg					0.03	0						
Nitrogen, Ammonia, Total (as N)	4.9	kg/d	CalMoAvg										0.04	0	
Nitrogen, Ammonia, Total (as N)	6.7	kg/d	CalMoAvg					0.01	0						
Nitrogen, Ammonia, Total (as N)	9.1	mg/L	CalMoAvg	0.5	0	0.01									0.02
Nitrogen, Ammonia, Total (as N)	14.5	kg/d	CalMoAvg	0.2	0	0.003									0.007
Nitrogen, Kjeldahl, Total		mg/L	CalMoAvg					1.9					1.7		
Oxygen, Dissolved	6	mg/L	CalMoMin	8.3	8.6	7.6	8.3	6.7	6.5	6.6	6.6	6.7	7.8	8.5	8.7
pH	9	SU	CalMoMax	7.5	7.5	7.4	7.4	7.3	7.4	7.3	7.3	7.5	7.3	7.2	7.5
pH	6	SU	CalMoMin	7.2	7.1	7	7	6.9	6.8	6.7	6.8	6.8	6.8	6.8	7
Phosphorus, Total (as P)	1	mg/L	12MoMovAverage	0.4	0.46	0.5	0.5	0.5	0.5	0.6	0.6	0.5	0.5	1	0.5
Phosphorus, Total (as P)	583	kg/yr	12MoTotal	60.3	60.51	62.32	63.02	60.67	63.5	77.86	76.49	72.46	66.32	65.73	65.03
Phosphorus, Total (as P)		kg/mo	CalMoAvg	0.04	0.06	0.08	0.09	0.08	0.43	0.67	0.21	0.32	0.13	0.04	0.02
Potassium, Total (as K)		mg/L	CalMoMax	19	19	18	18	19	23	21	22	25	18	17	18
Sodium, Total (as Na)		mg/L	CalMoMax	359	379	379	348	339	372	345	344	343	341	330	379
Solids, Total Dissolved (TDS)		mg/L	CalMoMax	1190	1280	1270	1220	1200	1280	1200	1270	1300	1200	1200	1340
Solids, Total Suspended (TSS)	30	mg/L	CalMoAvg	3.4	4.6	6.4	7.1	3.3	6.5	7.4	6.2	2.9	7.8	5.9	2.4
TSS	47.9	kg/d	CalMoAvg	1.2	1.5	2.2	2.6	1.2	2.3	2.8	2.3	1.1	3	2.3	0.9
TSS	45	mg/L	MxCalWkAvg	4	6	7.5	11	5.5	12	12	11	6.5	11	10	5
TSS	71.8	kg/d	MxCalWkAvg	1.4	1.9	2.6	4.1	2.1	4.3	4.7	4.4	2.7	4.2	4.1	1.8
TSS % Removal	85	%	MnCalMoAvg	99	99	98	99	99	98	99	98	99	97	99	99
Specific Conductance		umhos/cm	CalMoMax	2100	2220	2830	2000	2140	2240	1980	2110	2210	2180	2230	2300
Sulfate, Total (as SO4)		mg/L	CalMoMax	53	62	54	59	57	68	76	84	54	77	67	61

Receiving water(s)

Use classification

The Facility has a controlled discharge via surface discharge station SD002 to the Spunk Creek. This water is classified as a Class 2Bg, 3C, 4A, 5, 6 water.

Class 2 waters, aquatic life and recreation. Aquatic life and recreation includes all waters of the state that support or may support aquatic biota, bathing, boating, or other recreational purposes and for which quality control is or may be necessary to protect aquatic or terrestrial life or their habitats or the public health, safety, or welfare.

Class 3 water, industrial consumption. Industrial consumption includes all waters of the state that are or may be used as a source of supply for industrial process or cooling water, or any other industrial or commercial purposes, and for which quality control is or may be necessary to protect the public health, safety, or welfare.

Class 4 waters, agriculture and wildlife. Agriculture and wildlife includes all waters of the state that are or may be used for any agricultural purposes, including stock watering and irrigation, or by waterfowl or other wildlife and for which quality control is or may be necessary to protect terrestrial life and its habitat or the public health, safety, or welfare.

Class 5 waters, aesthetic enjoyment and navigation. Aesthetic enjoyment and navigation includes all waters of the state that are or may be used for any form of water transportation or navigation or fire prevention and for which quality control is or may be necessary to protect the public health, safety, or welfare.

Class 6 waters, other uses and protection of border wars. Other uses includes all waters of the state that serve or may serve the uses in subparts 2 to 6 or any other beneficial uses not listed in this part, including without limitation any such uses in this or any other state, province, or nation of any waters flowing through or originating in this state, and for which quality control is or may be necessary for the declared purposes in this part, to conform with the requirements of the legally constituted state or national agencies having jurisdiction over such waters, or for any other considerations the agency may deem proper.

There are no endangered or threatened species living in the receiving water.

More information on the classification of waters can be found in [Minn. R. 7050.0140](#).

Impairments

The following table lists the current impairments for the immediate and downstream receiving waters. More information on impaired waters can be found at: <https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list.com>.

AUID or Lake ID#	Waterbody	Pollutants or Impairment
07010201-525	Spunk Creek	Fecal Coliform
07010201; 07010203; and 07010206	Mississippi River (included in the Royalton to Hastings corridor)	Mercury in Fish Tissue & Water Column; Fecal Coliform, Nutrient/Eutrophication Biological Indicators; Total Suspended Solids; PFOS-F; PFOS-W; PCBF
07010206	Lake Pepin	Nutrient/Eutrophication Biological Indicators

PCBF – Polychlorinated Biphenyls; PFOS – Perfluorooctane Sulfonate in Fish; PFOS-W – Perfluorooctane Sulfonate in the water column

Existing permit effluent limits

Technology based effluent limits (TBELs)

The potential hydrogen (pH), five-day carbonaceous biochemical oxygen demand (CBOD₅), CBOD₅ percent removal, total suspended solids (TSS), and TSS percent removal are technology based limits developed for achieving secondary treatment standards. These limits are specified in 40 CFR §133.102 and Minn. R. 7050.0211 and Minn. R. 7053.0215.

Water quality based effluent limits (WQBELs)

The ammonia-nitrogen, dissolved oxygen, and 12-month moving total - total phosphorus limits are water quality based limits. WQBELs are established to meet applicable water quality standards. Under 40 CFR 122.44(d)(1)(i), all dischargers who have reasonable potential to cause or contribute to an exceedance of a water quality standard are required to have a WQBEL.

State Discharge Restrictions (SDR)

The fecal coliform and 12-month moving average total phosphorus limits are state discharge restriction (SDR) limits. These limits are specified in Minn. R. 7053.0215, subp. 1 and Minn. R 7053.0255 Subp. 3, respectively.

Table of Existing Permit Effluent Limits

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency
Bicarbonates (HCO ₃)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
CBOD ₅	8.0	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	5	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	16.0	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅	10	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
CBOD ₅ % Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	2 x week
Calcium, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
Chloride, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
Fecal Coliform	200	#100ml	Calendar Month Geometric Mean	Apr-Oct	Grab	2 x Week
Flow	Monitor Only	mgd	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day
Flow	Monitor Only	mgd	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	1 x Day
Flow	Monitor Only	MG	Calendar Month Total	Jan-Dec	Measurement, Continuous	1 x Day
Hardness, Calcium & Magnesium	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
Magnesium, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
Mercury, Total	Monitor Only	ng/L	Calendar Month Maximum	Jan, July	Grab	1 x Month
Nitrite Plus Nitrate, Total	Monitor Only	mg/L	Calendar Month Average	Apr, Sep	24-Hour Flow Composite	1 x Month
Nitrogen, Ammonia, Total	14.5	kg/day	Calendar Month Average	Dec-Mar	24-Hour Flow Composite	2 x week
Nitrogen, Ammonia, Total	9.1	mg/L	Calendar Month Average	Dec-Mar	24-Hour Flow Composite	2 x week
Nitrogen, Ammonia, Total	6.7	kg/day	Calendar Month Average	Apr-May	24-Hour Flow Composite	2 x week

Nitrogen, Ammonia, Total	4.2	mg/L	Calendar Month Average	Apr-May	24-Hour Flow Composite	2 x week
Nitrogen, Ammonia, Total	1.6	kg/day	Calendar Month Average	Jun-Sep	24-Hour Flow Composite	2 x week
Nitrogen, Ammonia, Total	1.0	mg/L	Calendar Month Average	Jun-Sep	24-Hour Flow Composite	2 x week
Nitrogen, Ammonia, Total	4.9	kg/day	Calendar Month Average	Oct-Nov	24-Hour Flow Composite	2 x week
Nitrogen, Ammonia, Total	3.1	mg/L	Calendar Month Average	Oct-Nov	24-Hour Flow Composite	2 x week
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Apr, Sep	24-Hour Flow Composite	1 x Month
Oxygen, Dissolved	6.0	mg/L	Calendar Month Minimum	Jan-Dec	Grab	1 x Day
pH	9.0	SU	Calendar Month Maximum	Jan-Dec	Grab	1 x Day
pH	6.0	SU	Calendar Month Minimum	Jan-Dec	Grab	1 x Day
Phosphorus, Total	1.0	mg/L	12 Month Moving Average	Jan-Dec	24-Hour Flow Composite	1 x Week
Phosphorus, Total	583	kg/yr	12 Month Moving Total	Jan-Dec	Calculation	1 x Week
Phosphorus, Total	Monitor Only	kg/mo	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week
Potassium, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
Sodium, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
Solids, Total Dissolved	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month
TSS	47.9	kg/day	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	30	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	71.8	kg/day	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS	45	mg/L	Maximum Calendar Week Average	Jan-Dec	24-Hour Flow Composite	2 x Week
TSS % Removal	85	%	Minimum Calendar Month Average	Jan-Dec	Calculation	2 x week
Specific Conductance	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Measurement	1 x month
Sulfate, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month

Proposed permit effluent limits

The proposed limits and monitoring requirements for Station SD 002 can be found in the limits and monitoring table of the draft permit document. Applicable WQBEL, TBEL, and SDR limits are explained below.

Technology based effluent limits

The CBOD₅, CBOD₅ percent removal, TSS, TSS percent removal, and pH limits are technology based limits developed for achieving secondary treatment standards. These limits are specified in 40 CFR §133.102 and Minn. R. 7050.0211 and Minn. R. 7053.0215.

Water quality based limits

The 12-month moving total – total phosphorus, total chloride, dissolved oxygen, and ammonia nitrogen limits are water quality based limits (WQBELs). WQBELs are established to meet applicable water quality standards. Under 40 CFR 122.44(d)(1)(i), all dischargers who have reasonable potential to cause or contribute to an exceedance of a water quality standards are required to have a WQBEL. Additional information regarding the development of the proposed WQBELs is included below.

Background for Reasonable Potential Review

Reasonable Potential for Chemical Specific Pollutants (40 CFR 122.44 (d)(1))

Federal regulations require MPCA to evaluate the discharge to determine whether the discharge has the reasonable potential to cause or contribute to a violation of water quality standards. The Agency must use acceptable technical procedures, accounting for variability (coefficient of variation, or CV), when determining whether the effluent causes, has the reasonable potential to cause, or contribute to an excursion of an applicable water quality standard. Projected effluent quality (PEQ) derived from effluent monitoring data is compared to Preliminary Effluent Limits (PELs) determined from mass balance inputs. Both determinations account for effluent variability. Where PEQ exceeds the PEL, there is a reasonable potential to cause or contribute to a water quality standards excursion. When reasonable potential is indicated the permit must contain a WQBEL for that pollutant.

This Facility's discharge is located on Spunk Creek (Class 2Bg, 3C, 4A, 4B, 5, and 6 water). The discharger has submitted salty parameter data and mercury data. This Facility is a minor Facility with an average wet weather flow of 0.422 million gallons per day and therefore is too small in size to require whole effluent toxicity (WET) testing or priority pollutant scans. The average dry weather (ADW) design flow of 0.357 mgd is used to calculate WQBELs under critical low stream conditions. The low flow condition is defined by the once in ten-year weekly average flow ($7Q_{10}$), which is determined to be 0.05 cubic feet per second (cfs) (0.03232 mgd).

Mercury

Monitoring results of the effluent include eight data points at a calculated (default) CV of 0.6. PEQ is derived as an upper bound value from the highest value measured (1.52 ng/L), and the determined variability (CV = 0.6) and number of data points (8). The PEL calculation assumes that the background mercury concentration is at the water quality standard (6.9 ng/L) when the listed stream impairment is for fish consumption advice, and no local river water column analytical data exist. To assure that the discharge does not cause or contribute to a water quality standards excursion for mercury impaired waters, the numeric water quality standard (6.9 ng/L) is applied at the point of discharge for the mass balance equation for the subsequent preliminary effluent limit calculations. Where PEQ exceeds the PEL, there is reasonable potential to cause or contribute to a water quality standards excursion. Since PEQ does not exceed the PEL in this case, reasonable potential to cause or contribute to an excursion above water quality standards is not indicated. A WQBEL is not needed.

This permit contains requirements for mercury monitoring. These requirements were added in response to the U.S. Environmental Protection Agency's approval of the Minnesota statewide Mercury Total Maximum Daily Load (TMDL) plan. More information on the TMDL can be found on the MPCA internet site at <http://www.pca.state.mn.us/wfhy9ef>. Specific mercury monitoring requirements are found in the Waste Stream Stations and/or Surface Discharge Stations Chapters of this permit. Those requirements may include sampling for TSS via a grab sample taken at the same time as the Total and Dissolved mercury grab samples are taken.

Salty discharge parameters (Total Bicarbonates as HCO_3 , class 2 chloride WQS, total dissolved salts, specific conductivity, and percent sodium)

Reasonable potential to cause or contribute to the excursion above a water quality standard has been indicated for total bicarbonates, class 2 and class 3 chloride WQS, total dissolved salts (solids), specific conductivity and percent sodium. In this situation, the chloride linkage process can be applied and as such, the Facility will receive alternate and final effluent limits for total chloride only. The class 2 chloride WQBELs are more restrictive than the class 3. Compliance with total chloride effluent limits will be protective of the remaining parameters listed above. Continued monitoring for the remaining salty parameters, excluding sulfate, has been included in the permit at a frequency of once per month, January – December. Monitoring for sulfate has been discontinued.

MPCA is proposing to include an alternate (interim) effluent limit and final WQBELs for this pollutant. The alternate effluent limit was calculated and intended to result in a discharge of the highest quality wastewater under existing conditions. The WQBELs for chloride were derived from the water quality standards pursuant to 40 CFR 122.44 (d)(1)(vii)(A). The calculation of the limits are as follows:

Alternate (Interim) Limit

Daily Maximum – 586 mg/L

Final Limits

Daily Maximum = 286 mg/L

Monthly Average = 250 mg/L (based on sampling 2 x month)

The Permittee has requested a variance to the Class 2 chloride WQS. A variance is a temporary change in a state water quality standard for a specified pollutant and its associated WQBEL that reflects the highest attainable condition (HAC) for a permittee during the term of the variance. Compliance with the chloride water quality standard is not feasible because controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act (CWA) would result in a substantial and widespread economic and social impact to the community. Refer to the ‘Variance’ section (page 19) for additional information. In addition, more information on the preliminary determination to grant a variance is available upon request to the MPCA.

The following tables contain the inputs to the reasonable potential analysis for mercury and the salty parameters. These pollutants were evaluated on the basis of analytical measurements that made evident the need for a full determination.

Parameter	Bicarb as HCO3 (mg/L)	Hardness (mg/L)	Class 2 Cl (mg/L)	Class 3 Cl (mg/L)
Max Measured Value	453	393	586	586
# data points	50	50	50	50
PEQ	453	393	586	586
Plant flow ADW (mgd)	0.357	0.357	0.357	0.357
Rec. water flow, 7Q10 (mgd)	0.03232062	0.0323206	0.03232	0.0323206
Background concentration	0	0	0	0
Chronic standard (cs)	305	500	230	250
Maximum standard (ms)	NA	NA	860	NA
Final acute value (FAV)	NA	NA	1720	NA
Mass balance –cs	332.61	545.27	250.82	272.63
Mass balance –ms	0.00	0.00	937.86	0.00
Coefficient of variation	0.12	0.07	0.12	0.12
Long term avg-cs	316.45	529.00	219.52	259.57
Long term avg-ms	0.00	0.00	721.06	0.00
Preliminary effl. Limits				
Daily max.	412.95	622.98	285.53	337.62
Monthly avg (2 x month)	361.61	574.12	250.38	296.06
<u>Reasonable Potential</u>				
PEQ > Daily max.	TRUE	FALSE	TRUE	TRUE
PEQ > Monthly avg.	TRUE	FALSE	TRUE	TRUE
PEQ > FAV	NA	NA	FALSE	NA
Final Reasonable Potential	Yes	No	Yes	Yes

Notes

T. Dissolved Salts are measured as T. Diss. Solids
 Background on Hg set to the WQS due to the statewide TMDL
Percent Sodium = 69%, they will need a sodium daily max limit

Parameter	Sulfate (mg/L)	T. Diss. Salts (mg/L)	Specific Conductance (umhos/com)	Total Hg (ng/L)
Max Measured Value	75.1	1420	2310	1.52
# data points	50	50	50	50
PEQ	75.1	1420	2310	2.888
Plant flow ADW (mgd)	0.357	0.357	0.357	0.357
Rec. water flow, 7Q10 (mgd)	0.03232062	0.0323206	0.03232	0.0323206
Background concentration	0	0	0	6.9
Chronic standard (cs)	1000	700	1000	6.9
Maximum standard (ms)	NA	NA	NA	2400
Final acute value (FAV)	NA	NA	NA	4900
Mass balance –cs	1090.53	763.37	1090.53	6.9
Mass balance –ms	0.00	0.00	0.00	2616.66
Coefficient of variation	0.27	0.09	0.08	0.60
Long term avg-cs	972.42	736.03	1053.34	5.38
Long term avg-ms	0.00	0.00	0.00	840.20
Preliminary effl. Limits				
Daily max.	1750.93	865.91	1270.77	16.77
Monthly avg (2 x month)	1307.90	812.06	1156.71	9.68
<u>Reasonable Potential</u>				
PEQ > Daily max.	FALSE	TRUE	TRUE	FALSE
PEQ > Monthly avg.	FALSE	TRUE	TRUE	FALSE
PEQ > FAV	NA	NA	NA	FALSE
Final Reasonable Potential	No	Yes	Yes	No

Notes

T. Dissolved Salts are measured as T. Diss. Solids
 Background on Hg set to the WQS due to the statewide TMDL
Percent Sodium = 69%, they will need a sodium daily max limit

Nitrogen

Nitrogen is a pollutant that can negatively impact the quality of Minnesota’s water resources, including water used for drinking. Studies have shown that nitrogen in lakes and streams has a toxic effect on aquatic life such as fish. Like phosphorus, nitrogen is a nutrient that promotes algae and aquatic plant growth often resulting in decreased water clarity and oxygen levels. In 2013 the MPCA completed a draft [Statewide Nutrient Reduction Strategy](http://www.pca.state.mn.us/zihy1146) (<http://www.pca.state.mn.us/zihy1146>) which identifies goals and milestones for nitrogen reductions for both point and non-point nitrogen sources within Minnesota. To gain a better understanding of the current nitrogen concentrations and loadings received by and discharged from your Facility additional influent and effluent nitrogen monitoring has been added to the Permit. This monitoring has been added in accordance with Minnesota Statutes Chapter 115.03.

The draft permit includes influent and effluent monitoring for nitrite plus nitrate-nitrogen, total Kjeldahl nitrogen, and total nitrogen at a frequency of once per quarter for the five-year term of the Permit. Additionally, the previously assigned total ammonia limits on the effluent station are being carried forward into this reissuance.

Phosphorus

Phosphorus is a common constituent in many wastewater discharges and a pollutant that has the potential to negatively impact the quality of Minnesota's lakes, wetlands, rivers, and streams. Phosphorus promotes algae and aquatic plant growth often resulting in decreased water clarity and oxygen levels. In addition to creating general aesthetic problems, these conditions can also impact a water body's ability to support healthy fish and other aquatic species. Therefore, phosphorus discharges are being carefully evaluated throughout the state.

You are required to meet a phosphorus limit as specified in the limits and monitoring section of this permit. Although you are not required to prepare a Phosphorus Management Plan, elimination or reduction of phosphorus at the source will decrease the influent load to the wastewater treatment Facility and has the potential to improve treatment efficiency and reduce treatment costs. The MPCA strongly encourages you to identify and eliminate/reduce sources of phosphorus to, and optimize phosphorus management within, your wastewater treatment Facility.

All phosphorus samples must be analyzed by a certified laboratory and the data submitted to the MPCA. If your laboratory would like more information about becoming certified, please call the Environmental Laboratory Certification Unit at 612-676-5200. Samples must be collected in a clean bottle (preferably cleaned by a certified laboratory) that was not washed with phosphate detergent. Also, a sulfuric acid preservative must be added immediately after the sample is collected, and it must be stored at four degrees Celsius until analysis. If a contract laboratory is used, the bottle and preservative would typically be provided by the laboratory analyzing the sample.

Total Phosphorus WQBEL

Federal law [40 CFR 122.44(d)] restricts mass increases of pollutants upstream of an impaired water and requires WQBEL to be established for pollutant parameters where it is found that a NPDES/SDS discharger has the RP to cause or contribute to an excursion above a WQS. An effluent limits analysis was completed on the Avon WWTF to determine if the WWTF's discharge has RP to cause or contribute to an exceedance of a state water quality standard or contribute to any downstream impairment. As a result of the analysis, total phosphorus effluent limits were established for the Avon WWTF to ensure protection of downstream waters and to comply with Eutrophication Standards and State Discharge Restrictions. A summary of the effluent limits analysis and the assigned total phosphorus limit(s) are included below. For additional details regarding the effluent limits analysis, please see the "*Total phosphorus effluent limit review: Upper Mississippi River - Sartell Watershed v1.0*". A copy of the MPCA memorandum is available upon request.

Lake Eutrophication Standards

Effluent from the Avon WWTF is discharged upstream of Lake Pepin which currently exceeds numeric lake eutrophication standards (LES). Eutrophication standards for lakes, shallow lakes, and reservoirs can be found in Minn. R. 7050.0222 (<https://www.revisor.mn.gov/rules/?id=7050.0222>). Federal law [40 CFR 122.44(d)] restricts mass increases upstream of impaired waters and states that NPDES/SDS permits for all dischargers that have the RP to cause or contribute to downstream impaired waters are required to contain WQBELs derived from the WQS. When determining RP, the Code of Federal Regulations also states that MPCA shall use procedures that account for existing controls on point and nonpoint sources of pollution. Permittees are found to have RP for TP if: 1) they discharge upstream of a nutrient impaired waterbody, 2) they discharge at TP concentrations greater than the ambient target, and 3) there is no geographical barrier capable of trapping a significant mass of nutrients between the outfall and the impairment. For all reasons listed above, the Avon WWTF is found to have RP for TP upstream of Lake Pepin. Therefore, the Avon WWTF is assigned a 12-month moving total mass TP WQBEL as a result of the Waste Load Allocation (WLA)

derived from the WQS. Draft WLAs in combination with other point and nonpoint allocations are calculated to achieve the nutrient/eutrophication WQS for Lake Pepin.

The gross WLA was split between the affected dischargers upstream of Lake Pepin with RP, in consideration of facility size and type. More detail regarding the method used to split the gross WLA into individual WLAs is provided in the MPCA memorandum for the watershed effluent limit analysis.

The TP effluent limit assigned to the Avon WWTF to protect for eutrophication impairment in Lake Pepin is 583 kg/yr as a 12-month moving total.

River Eutrophication Standards (RES)

The Upper Mississippi River - Sartell Watershed analysis demonstrated that the Avon WWTF does not have RP to cause or contribute to a river eutrophication impairment in the Upper Mississippi River - Sartell Watershed, under permitted effluent conditions. As such, no limit in the permit is needed to protect the immediate receiving waters based on current performance levels and permitted flow.

Detailed information regarding the TP limit evaluation can be found in the August 3, 2017 MPCA memorandum titled, "*Total Phosphorus effluent limit review: Upper Mississippi River - Sartell Watershed.*" A copy of the MPCA memorandum is available upon request from the MPCA.

State Discharge Restrictions (SDR)

The permit includes a SDR limit of 1.0 mg/L, January-December, 12-Month Moving Average limit. This limit was assigned pursuant to Minn. R. 7053.0255.

Additional requirements

Mercury Minimization Plan (MMP)

The Facility is required to submit a Mercury Pollutant Minimization Plan (MMP) or an updated MMP. This requirement complies with the U.S. Environmental Protection Agency's approval of the Minnesota statewide Mercury Total Maximum Daily Load (TMDL) plan. Guidance for completing the MMP is available on the MPCA internet site at <http://www.pca.state.mn.us/gp0rb25>.

Variance – Chloride WQBEL

The chloride water quality standard is located in Minn. R. 7050.0222 subp 2. A variance is a temporary change in a state water quality standard for a specified pollutant and its associated WQBEL that reflects the highest attainable condition (HAC) for a permittee during the term of the variance. Compliance with the chloride water quality standard is not feasible because controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act (CWA) would result in a substantial and widespread economic and social impact to the community.

Upon review of the application, Minnesota Pollution Control Agency (MPCA) staff have determined that the Permittee has satisfied the conditions necessary to grant a variance and, as a result, recommends the Commissioner grant the variance and has prepared a draft NPDES/SDS permit with additional conditions. A schedule of compliance activities has been included in the draft permit under the section, "*Total Chloride Water Quality Based Effluent Limit Variance General Requirements*" in sections 5.7.29 – 5.7.44.

All proposed variance submittals are subject to MPCA review and approval. Work completed by the Permittee as part of the variance schedule of compliance activities may require a modification of the permit, in accordance with Minn. R. 7001.0170, including public notice of the proposed permit modifications. Additional information regarding MPCA

initiated permit modifications can be found in requirement 5.12.161 of the Total Facility Requirements chapter of the draft permit.

A copy of the complete variance preliminary determination is available upon request to the MPCA.

Total Facility requirements (TFR) **Certified Laboratory**

Effective January 1, 2013, all Minnesota municipal, county or industrial laboratories that analyze wastewater per Clean Water Act requirements must be certified by the MPCA or the Minnesota Department of Health. Information regarding MPCA laboratory certification is located on the MPCA website at <http://www.pca.state.mn.us/4p44whk>. If you have questions concerning MPCA laboratory certification, please contact the MPCA at 1-800-657-3864 or by email at qa.questions.mpca@state.mn.us. Commercial laboratories doing these analyses must maintain Minnesota Department of Health certification.

Electronic Discharge Monitoring Reports (eDMRs)

The Electronic Discharge Monitoring Reports (eDMRs), Sample Values/Operational Spreadsheets, and related attachments shall be electronically submitted via the MPCA Online Services Portal (<https://netweb.pca.state.mn.us/private/>). Paper copies of Discharge Monitoring Reports will no longer be accepted. The eDMR and Sample Value/Operational Spreadsheets are generated directly from the limits and monitoring requirements in the final reissued permit for your Facility. They are generated by the Pollution Control Data Specialist (PCDS) assigned to manage the data for your Facility and will be available online within 30 days of the permit action, please make sure to download the most recent version of the eDMR and Sample Value/Operational Spreadsheet prior to submitting your next monthly eDMRs.

Antidegradation and anti-backsliding

Changes to the Facility may result in an increase in pollutant loading to surface waters or other causes of degradation to surface waters. If a change to the Facility will result in a net increase in pollutant loading or other causes of degradation that exceed the maximum loading authorized through conditions specified in the existing permit, the changes to the Facility are subject to antidegradation requirements found in Minn. R. 7050 to 7050.0335.

This Permit also complies with Minn. R. 7053.0275 regarding anti-backsliding.

Any point source discharger of sewage, industrial, or other wastes for which a NPDES permit has been issued by the agency that contains effluent limits more stringent than those that would be established by Minn. R. 7053.0215 to 7053.0265 shall continue to meet the effluent limits established by the permit, unless the permittee establishes that less stringent effluent limits are allowable pursuant to federal law, under section 402(o) of the Clean Water Act, United States Code, title 33, section 1342.