



STATE OF MINNESOTA

Minnesota Pollution Control Agency

Industrial Division

**National Pollutant Discharge Elimination System (NPDES)/
State Disposal System (SDS) Permit MN0068357**

PERMITTEE: Green Plains Renewable Energy Inc.; Green Plains Otter Tail, LLC
FACILITY NAME: Green Plains Otter Tail
RECEIVING WATER: Kunz Waterfowl Production Area Lake Tributary to the Pelican River;
Otter Tail River to Dayton Hollow Reservoir and Orwell Lake

TOWNSHIP: Fergus Falls **COUNTY:** Otter Tail
ISSUANCE DATE: **EXPIRATION DATE:** September 30, 2017

The state of Minnesota, on behalf of its citizens through the Minnesota Pollution Control Agency (MPCA), authorizes the Permittee to construct, install and operate a disposal system at the facility named above and to discharge from this facility to the receiving waters named above, in accordance with the requirements of this permit.

The goal of this permit is to reduce pollutant levels in point source discharges and protect water quality in accordance with Minnesota and U.S. statutes and rules, including Minn. Stat. chs. 115 and 116, Minn. R. chs. 7001, 7050, 7053, 7060, 7090 and the U.S. Clean Water Act.

This permit is effective on the issuance date identified above, and supersedes the previous permit that was issued for this facility on October 19, 2006, and modified on September 4, 2009, and April 12, 2011. This permit expires at midnight on the expiration date identified above.

Signature: _____

Jeff Udd, P.E., Supervisor
Water Quality Permits Unit
Land and Water Quality Permits Section
Industrial Division

for The Minnesota Pollution Control Agency

Submit DMRs to:

Attention: Discharge Monitoring Reports
Minnesota Pollution Control Agency
520 Lafayette Rd N
St Paul, MN 55155-4194

Submit Other WQ Reports to:

Attention: WQ Submittals Center
Minnesota Pollution Control Agency
520 Lafayette Rd N
St Paul, MN 55155-4194

Questions on this permit?

- For DMR and other permit reporting issues, contact:
Tamara Dahl, 507-476-4252.
- For specific permit requirements or permit compliance status, contact:
Justin Barrick, 218-316-3858.
- General permit or NPDES program questions, contact:
MPCA, 651-282-6143 or 1-800-657-3938.

520 Lafayette Rd. N.; St. Paul, MN 55155-4194; 651-296-6300 (voice); 651-282-5332 (TTY)

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Permitted Facility Description

The Facility is authorized to produce 65 million gallons per year of undenatured ethanol that is blended with denaturant (unleaded gasoline) for fuel use. Approximately 24 million bushels (approximately 0.68 million tons) per year of corn feedstock is processed through a dry milling process. In addition to ethanol, the Facility coproduces dried distiller's grain with solubles (DDGS), modified wet cake or wet cake, in any combination thereof, for animal feed, as well as syrup and extracted corn oil. The fuel for the Facility is supplied by natural gas.

The makeup water for the Facility is supplied, at a design rate of 364 million gallons per year, by two production wells (no. 1 and no. 2) in a confined glacial aquifer. The water supply is treated with multi-media filtration. The water treated by the multi-media filtration supplies the Facility cooling tower and the makeup for the production processes, as well as water for additional treatment by reverse osmosis and ion exchange softening. The reverse osmosis and ion exchange softening supply additional treated water for the production processes, boiler and cooling tower.

The backwash from the multi-media filtration is collected in a detention tank for settling. The clear water decant from this tank discharges through outfall SD001 while the sludge is filtered (with the sludge filtrate discharged through SD001 or routed to the ethanol process); the solids are removed and disposed of in a landfill (as monitored by station WS002).

The following individual utility waste streams combine into pipe outfall SD001, designed to discharge at average and maximum design daily rates of 0.30 and 0.36 million gallons/day (MGD), via an underground gravity-flow pipeline to the Otter Tail River (class 1C, 2Bd, 3C, 4A, 4B, 5 and 6 waters) to Dayton Hollow Reservoir and Orwell Lake (both class 2B, 3C, 4A, 4B, 5 and 6 waters).

Waste Stream Type	Gallons per day average	Gallons per day maximum	Frequency of discharge
Multi-media filter backwash	38,000	45,000	Continuous
Reject wastewater from reverse osmosis water supply treatment	144,000	172,800	12 times per day, for approximately 90 minutes
Ion exchange water softener regenerate	500	670	Monthly, over a 100-minute period
Cooling towers blowdown	118,610	142,330	Four times per day, for approximately five hours per cycle: five hours on, one hour off

The following two different, mutually exclusive, sets of chemicals used at the Facility at the indicated maximum rates may enter the waste streams discharging through outfall SD001:

Fremont Additives Set		
Chemical Type or Name	Purpose	Maximum Addition Rate (continuous unless otherwise noted)
Sodium hypochlorite (diaphragm or membrane process manufactured)	Influent water supply oxidant Cooling tower biocide	44 lb/day 110 gallons/week
Sodium chloride	Ion exchange softener resin regeneration	375 gallons/6.25 hours, approximately once monthly
Fremont 8898	Reverse osmosis antiscalant	26 lbs/day
Sulfuric acid (low-level mercury, as measured by station WS003)	Cooling tower pH adjustment	110 gallons/week
Biodispersant 2	Cooling tower biocide	2 lbs/1 hour, weekly
Antimicrobial 7287	Cooling tower biocide	0.6 gal/1 hour, weekly
Sodium bisulfite	Reverse osmosis dechlorination Combined effluent dechlorination	22 lbs/day 55 gallons/week
Fremont 9575	Cooling tower scale/corrosion inhibitor (these two chemicals not used at the same time)	27 lbs/day
Fremont 9199		164 lbs/day

Nalco Additives Set		
Chemical Type or Name	Purpose	Maximum Addition Rate (continuous unless otherwise noted)
Sodium hypochlorite (diaphragm or membrane process manufactured)	Influent water supply oxidant Cooling tower biocide	44 lb/day 110 gallons/week
Sodium chloride	Ion exchange softener resin regeneration	375 gallons/6.25 hours, approximately once monthly
Nalco PC-191T	Reverse osmosis antiscalant	1.4 gal/day
Sulfuric acid (low-level mercury, as measured by station WS003)	Cooling tower pH adjustment	110 gallons/week
Nalco 3DTBR06	Cooling tower tracer	0.63 gal/day
Nalco 3DT191	Cooling tower biocide	1.8 gal/day
Nalco 73551	Cooling tower biocide	0.54 gal/day
Nalco 3DT198	Cooling tower biocide	0.23 gal/day
Sodium bisulfite	Reverse osmosis dechlorination Combined effluent dechlorination	22 lbs/day 55 gallons/week
Nalco 3DT184	Cooling tower scale/corrosion inhibitor	0.68 gal/day

Boiler blowdown is recycled into the ethanol manufacturing process. Boiler cleaning residuals have no blowdown or other release to the wastewater streams that ultimately discharge from the Facility. Other flows (such as tank bottoms, hydroblasting and washdown waters, floor drainage and wet air emission control waters) generated by the ethanol and coproduct production processes are recycled and contained within the boiler and production process systems, and have no blowdown or other release to the wastewater streams that ultimately discharge from the Facility. Internal clean-in-place (CIP) activities are conducted periodically for the Facility. Rinse waters, sediments and the residuals from the other non-utility waste streams noted above are returned to the ethanol manufacturing process, which leads to the ultimate generation of ethanol and other final coproducts. None of the Facility stillage, wet cake, modified wet cake, DDGS or other byproducts are land-applied.

The only outdoor storage of materials at the Facility is for containerized totes, packaged containers, wet cake and modified wet cake. The outdoor management of wetcake and modified wetcake consists of storage on, and transport out from, a walled and fully roofed outdoor concrete pad. During normal operations, drainage does not accumulate at this storage site; however, if drainage accumulates it is collected and returned to the plant process. Outdoor handling occurs at designated truck and rail fuel loading sites.

No dust control chemicals are applied at the Facility. No field or other drainage tiles underlie the Facility site. A stormwater detention pond on the north side of the Facility receives the Facility stormwater drainage. Discharges from this pond are controlled by manual gate valves. Outfall SD002 is designed to discharge at average and maximum daily rates of 0.01 and 11.6 MGD to a drain tile to the Kunz Waterfowl Production Area Lake, which drains through an outlet structure to a tile to the Pelican River (class 2B, 3C, 4A, 4B, 5 and 6 waters); excess stormwater above 0.05 MGD is pumped into the ethanol process or spray-irrigated through station WS001 (using wheel row and/or traveling gun irrigators) onto spray irrigation sites LA301 (9 acres), LA302 (16 acres) and LA303 (21 acres). A rotation of alfalfa and grasses is grown and harvested on the spray irrigation sites.

Aboveground storage tanks are covered under Aboveground Storage Tank (AST) Major Facility Permit No. 124283; this AST permit covers the tank secondary containment drainage, which includes the flows from the Facility truck and rail fuel loading sites. The drainage that accumulates in the tank secondary containment area is inspected and tested for the absence of fuel-related contaminants before being routed to the Facility stormwater detention pond.

Domestic wastewater is treated by an individual, on-site, septic tank/drainfield system not covered under this permit.

The water balance flow diagram and location of the Facility and designated outfall locations are shown below. Station SW001 is located in the Otter Tail River upstream of and outside of the influence of discharge outfall SD001.

Flow Diagram

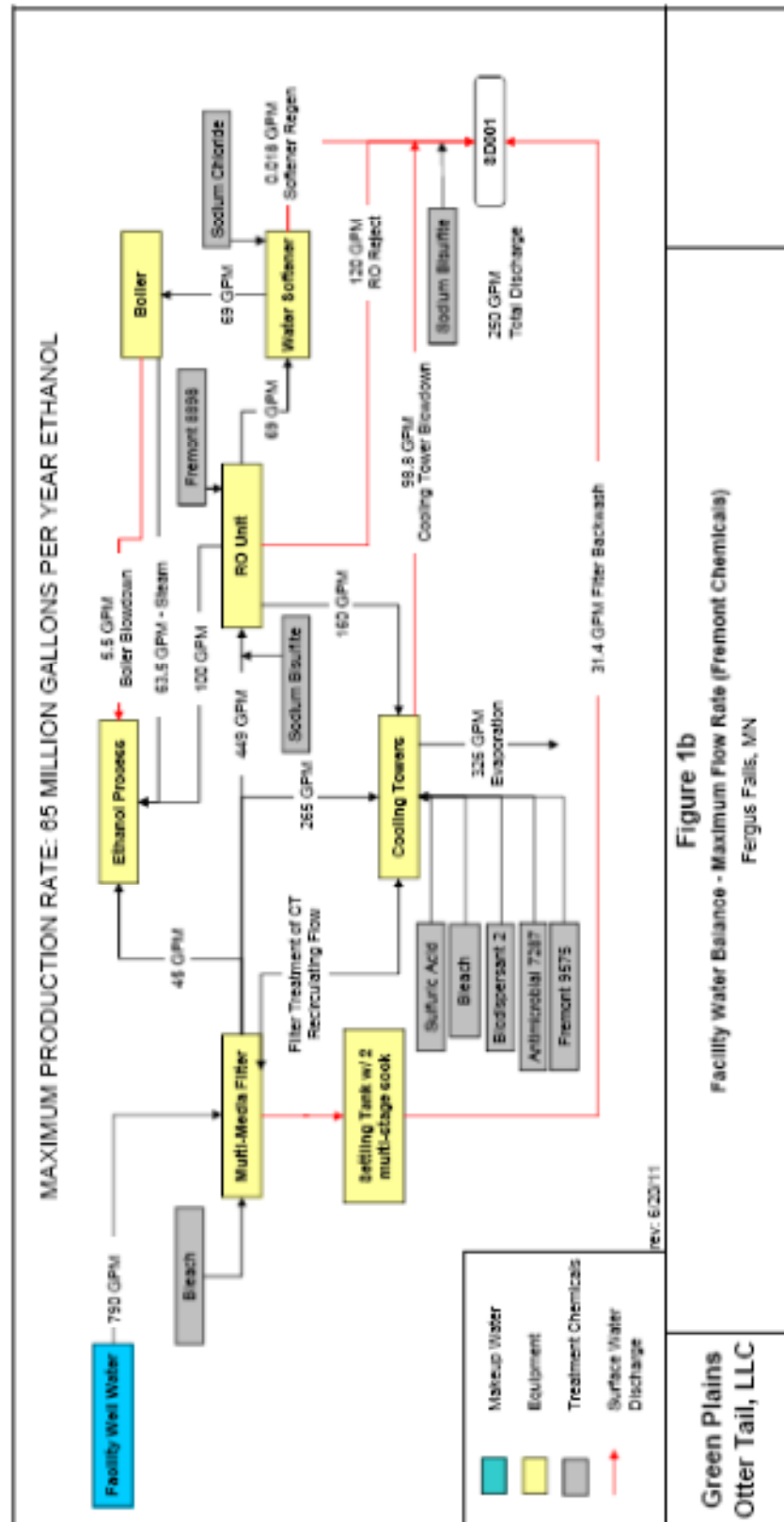


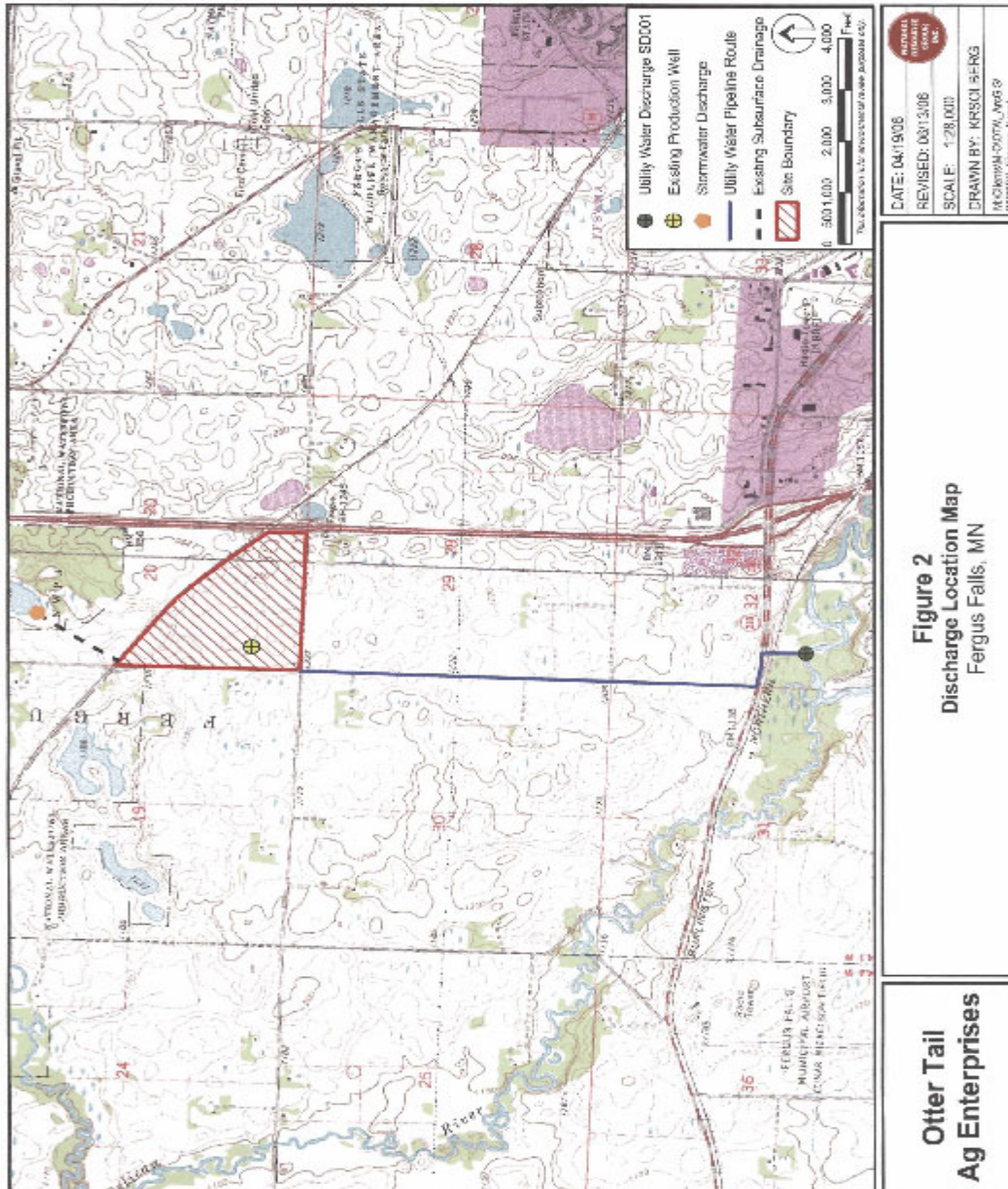
Figure 1b

Facility Water Balance - Maximum Flow Rate (Fremont Chemicals)

Fergus Falls, MN

**Green Plains
Otter Tail, LLC**

Topographic Map of Permitted Facility



DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**Land Application Stations**

<u>Station</u>	<u>Type of Station</u>	<u>Local Name</u>	<u>PLS Location</u>
LA301	Application Site, Spray with Soils Tests	Zone 1 Stormwater Spray Irrigation (Wheel row and or traveling gun irrigators)	NW Quarter of the SW Quarter of the Section 20, Township 133 North, Range 43 West
LA302	Application Site, Spray with Soils Tests	Zone 2 Stormwater Spray Irrigation (Wheel row and or traveling gun irrigators)	NW Quarter of the SW Quarter of the Section 20, Township 133 North, Range 43 West
LA303	Application Site, Spray with Soils Tests	Zone 3 Stormwater Spray Irrigation (Wheel row and or traveling gun irrigators)	SE Quarter of the SW Quarter of the Section 20, Township 133 North, Range 43 West

Surface Discharge Stations

<u>Station</u>	<u>Type of Station</u>	<u>Local Name</u>	<u>PLS Location</u>
SD001	Effluent To Surface Water	Utility Wastewater Discharge	NW Quarter of the SW Quarter of Section 32, Township 133 North, Range 43 West
SD002	Tile Line To Surface Water (Monitor only during discharge)	Stormwater Pond Discharge	NE Quarter of the SW Quarter of the NW Quarter of Section 20, Township 133 North, Range 43 West

Surface Water Stations

<u>Station</u>	<u>Type of Station</u>	<u>Local Name</u>	<u>PLS Location</u>
SW001	Stream/River/Ditch, Upstream	OT River upstream of and outside of the influence of discharge	SE Quarter of the NW Quarter of the SW Quarter of Section 32, Township 133 North, Range 43 West

Waste Stream Stations

<u>Station</u>	<u>Type of Station</u>	<u>Local Name</u>	<u>PLS Location</u>
WS001	Intermediate: WW to Land (Monitor only during discharge)	Stormwater to Spray Irrigation Sites	NW Quarter of the SW Quarter of Section 20, Township 133 North, Range 43 West
WS002	Solids to Land Disposal/Non-application	Multi-media filter backwash residual solids to landfill	SW Quarter of the SW Quarter of Section 20, Township 133 North, Range 43 West
WS003	Influent Waste	Cooling tower sulfuric acid Hg content	SW Quarter of the SW Quarter of Section 20, Township 133 North, Range 43 West

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Interim Period*

LA 301

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Area Of Disposal, Used	9.0	acres	Instantaneous Maximum	Jan-Dec	Measurement	1 x Year	1
Crop Yield	Monitor Only	ton/ac	Calendar Year Total	Jan-Dec	Measurement	1 x Year	4
Flow Application Rate	0.35	MGacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	7
Nitrogen, Total Annual Loading Rate	150	lbacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	3
Organic Matter, Total In Soil	Monitor Only	%	Single Value	Jan-Dec	Composite	1 x Year	5
pH, 1 To 1 Soil To Water	Monitor Only	SU	Single Value	Jan-Dec	Composite	1 x Year	6
Phosphorus, BRAY-1 Ext In Soil	200	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Phosphorus, Olson Ext in Soil	180	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Potassium, NH4AC, Exch In Soil	Monitor Only	lb/acr	Single Value	Jan-Dec	Composite	1 x Year	5
Protein, Crop, Crude	Monitor Only	%	Single Value	Jan-Dec	Measurement	1 x Year	2
Salts, Water Soluble In Soil	3.0	mmh/cm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	5

LA 302

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Area Of Disposal, Used	16	acres	Instantaneous Maximum	Jan-Dec	Measurement	1 x Year	1
Crop Yield	Monitor Only	ton/ac	Calendar Year Total	Jan-Dec	Measurement	1 x Year	4
Flow Application Rate	0.35	MGacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	7
Nitrogen, Total Annual Loading Rate	150	lbacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	3
Organic Matter, Total In Soil	Monitor Only	%	Single Value	Jan-Dec	Composite	1 x Year	5
pH, 1 To 1 Soil To Water	Monitor Only	SU	Single Value	Jan-Dec	Composite	1 x Year	6
Phosphorus, BRAY-1 Ext In Soil	200	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Phosphorus, Olson Ext in Soil	180	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Potassium, NH4AC, Exch In Soil	Monitor Only	lb/acr	Single Value	Jan-Dec	Composite	1 x Year	5
Protein, Crop, Crude	Monitor Only	%	Single Value	Jan-Dec	Measurement	1 x Year	2
Salts, Water Soluble In Soil	3.0	mmh/cm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	5

Green Plains Otter Tail

Limits and Monitoring Requirements

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The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Interim Period*

LA 303

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Area Of Disposal, Used	21	acres	Instantaneous Maximum	Jan-Dec	Measurement	1 x Year	1
Crop Yield	Monitor Only	ton/ac	Calendar Year Total	Jan-Dec	Measurement	1 x Year	4
Flow Application Rate	0.35	MGacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	7
Nitrogen, Total Annual Loading Rate	150	lbacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	3
Organic Matter, Total In Soil	Monitor Only	%	Single Value	Jan-Dec	Composite	1 x Year	5
pH, 1 To 1 Soil To Water	Monitor Only	SU	Single Value	Jan-Dec	Composite	1 x Year	6
Phosphorus, BRAY-1 Ext In Soil	200	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Phosphorus, Olson Ext in Soil	180	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Potassium, NH4AC, Exch In Soil	Monitor Only	lb/acr	Single Value	Jan-Dec	Composite	1 x Year	5
Protein, Crop, Crude	Monitor Only	%	Single Value	Jan-Dec	Measurement	1 x Year	2
Salts, Water Soluble In Soil	3.0	mmh/cm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	5

SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Arsenic, Total (as As)	36	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Arsenic, Total (as As)	50	ug/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Bicarbonates (HCO3)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Bicarbonates (HCO3)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
BOD, Carbonaceous 05 Day (20 Deg C)	25	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
BOD, Carbonaceous 05 Day (20 Deg C)	50	mg/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Chloride, Total	Monitor Only	mg/L	Calendar Month Average	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	
Chlorine, Total Residual	0.038	mg/L	Daily Maximum	Jan-Dec	Grab	1 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	

Green Plains Otter Tail Limits and Monitoring Requirements

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The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Interim Period*

SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Hardness, Calcium & Magnesium, Calculated (as CaCO ₃)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Calculation	1 x Month	
Hardness, Calcium & Magnesium, Calculated (as CaCO ₃)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	Calculation	1 x Month	
Iron, Dissolved (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	
Iron, Dissolved (as Fe)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	2 x Month	
Iron, Total (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	
Iron, Total (as Fe)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	2 x Month	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Manganese, Dissolved (as Mn)	Monitor Only	ug/L	Calendar Month Maximum	Jan, July	24-Hour Flow Composite	1 x Month	
Manganese, Total (as Mn)	Monitor Only	ug/L	Calendar Month Maximum	Jan, July	24-Hour Flow Composite	1 x Month	
Mercury, Dissolved (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	Jan, July	Grab	1 x Month	
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	Jan, July	Grab	1 x Month	
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan, July	24-Hour Flow Composite	1 x Month	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan, July	24-Hour Flow Composite	1 x Month	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Jan, July	24-Hour Flow Composite	1 x Month	
pH, Field	9.0	SU	Instantaneous Maximum	Jan-Dec	Grab	1 x Week	
pH, Field	6.0	SU	Instantaneous Minimum	Jan-Dec	Grab	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Phosphorus, Total (as P)	Monitor Only	kg/mo	Calendar Month Total	Jan-Dec	24-Hour Flow Composite	1 x Month	
Phosphorus, Total (as P)	Monitor Only	kg/yr	Calendar Year To Date Total	Jan-Dec	Calculation	1 x Month	
Potassium, Total (as K)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Potassium, Total (as K)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Solids, Total Suspended (TSS)	30	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	

Green Plains Otter Tail Limits and Monitoring Requirements

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The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Interim Period*

SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Solids, Total Suspended (TSS)	60	mg/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Suspended (TSS), grab (Mercury)	Monitor Only	mg/L	Calendar Month Maximum	Jan, July	Grab	1 x Month	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Average	Jan-Dec	Grab	1 x Week	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Grab	1 x Week	
Sulfate, Total (as SO4)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Sulfate, Total (as SO4)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Temperature, Water (F)	Monitor Only	Deg F	Daily Maximum	Jan-Dec	Measurement	1 x Week	
Temperature, Water (F)	86	Deg F	Monthly Average of Daily Maximum	Jan-Dec	Measurement	1 x Week	

SD 002

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	25	mg/L	Calendar Month Average	Jan-Dec	Grab	1 x Day	
BOD, Carbonaceous 05 Day (20 Deg C)	66	mg/L	Daily Maximum	Jan-Dec	Grab	1 x Day	
Duration of Discharge	Monitor Only	day/mo	Calendar Month Total	Jan-Dec	Measurement	1 x Day	
Ethanol (Ethyl Alcohol)	Monitor Only	ug/L	Calendar Month Maximum	Jan, Apr, Jul, Oct	Grab	1 x Month	
Flow	Monitor Only	mgd	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day	
Flow	0.050	mgd	Calendar Month Average Intervention	Jan-Dec	Measurement, Continuous	1 x Day	
Flow	Monitor Only	MG	Calendar Month Total	Jan-Dec	Measurement, Continuous	1 x Day	
Organics, Gasoline Range as gasoline, Total	Monitor Only	ug/L	Calendar Month Maximum	Jan, Apr, Jul, Oct	Grab	1 x Month	
pH, Field	9.0	SU	Instantaneous Maximum	Jan-Dec	Grab	1 x Day	
pH, Field	6.0	SU	Instantaneous Minimum	Jan-Dec	Grab	1 x Day	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Grab	1 x Month	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	Grab	1 x Month	
Solids, Total Suspended (TSS)	30	mg/L	Calendar Month Average	Jan-Dec	Grab	1 x Day	
Solids, Total Suspended (TSS)	79	mg/L	Daily Maximum	Jan-Dec	Grab	1 x Day	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Average	Jan-Dec	Grab	1 x Day	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Grab	1 x Day	

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Interim Period*

SW 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Iron, Dissolved (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Measurement	1 x Month	
Iron, Total (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Measurement	1 x Month	
Manganese, Dissolved (as Mn)	Monitor Only	ug/L	Calendar Month Average	Jan, July	Measurement	1 x Month	
Manganese, Total (as Mn)	Monitor Only	ug/L	Calendar Month Average	Jan, July	Measurement	1 x Month	

WS 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Chloride, Total	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Chloride, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Flow	16	MG	Calendar Year To Date Total	Jan-Dec	Measurement, Continuous	1 x Day	
Flow	0	MG	Calendar Month Total	Nov-Apr	Measurement, Continuous	1 x Day	
Flow	Monitor Only	MG	Calendar Month Total	May-Oct	Measurement, Continuous	1 x Day	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
pH, Field	Monitor Only	SU	Calendar Month Maximum	Jan-Dec	Grab	1 x Week	
pH, Field	Monitor Only	SU	Calendar Month Minimum	Jan-Dec	Grab	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Interim Period*

WS 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Sodium Adsorption Ratio (SAR)	8.5	ratio	Calendar Month Average Intervention	Jan-Dec	Calculation	1 x Week	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Average	Jan-Dec	Grab	1 x Week	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Grab	1 x Week	

WS 002

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Mass Transported From Facility	Monitor Only	ton/yr	Calendar Year Total	Jan-Dec	Measurement, Continuous	1 x Year	

WS 003

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day	
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	1 x Day	

Period: *Limits Applicable in the Final Period*

LA 301

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Area Of Disposal, Used	9.0	acres	Instantaneous Maximum	Jan-Dec	Measurement	1 x Year	1
Crop Yield	Monitor Only	ton/ac	Calendar Year Total	Jan-Dec	Measurement	1 x Year	4
Flow Application Rate	0.35	MGacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	7
Nitrogen, Total Annual Loading Rate	150	lbacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	3
Organic Matter, Total In Soil	Monitor Only	%	Single Value	Jan-Dec	Composite	1 x Year	5
pH, 1 To 1 Soil To Water	Monitor Only	SU	Single Value	Jan-Dec	Composite	1 x Year	6
Phosphorus, BRAY-1 Ext In Soil	200	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Phosphorus, Olson Ext in Soil	180	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Potassium, NH4AC, Exch In Soil	Monitor Only	lb/acr	Single Value	Jan-Dec	Composite	1 x Year	5

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Final Period*

LA 301

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Protein, Crop, Crude	Monitor Only	%	Single Value	Jan-Dec	Measurement	1 x Year	2
Salts, Water Soluble In Soil	3.0	mmh/cm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	5

LA 302

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Area Of Disposal, Used	16	acres	Instantaneous Maximum	Jan-Dec	Measurement	1 x Year	1
Crop Yield	Monitor Only	ton/ac	Calendar Year Total	Jan-Dec	Measurement	1 x Year	4
Flow Application Rate	0.35	MGacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	7
Nitrogen, Total Annual Loading Rate	150	lbacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	3
Organic Matter, Total In Soil	Monitor Only	%	Single Value	Jan-Dec	Composite	1 x Year	5
pH, 1 To 1 Soil To Water	Monitor Only	SU	Single Value	Jan-Dec	Composite	1 x Year	6
Phosphorus, BRAY-1 Ext In Soil	200	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Phosphorus, Olson Ext in Soil	180	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Potassium, NH4AC, Exch In Soil	Monitor Only	lb/acr	Single Value	Jan-Dec	Composite	1 x Year	5
Protein, Crop, Crude	Monitor Only	%	Single Value	Jan-Dec	Measurement	1 x Year	2
Salts, Water Soluble In Soil	3.0	mmh/cm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	5

LA 303

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Area Of Disposal, Used	21	acres	Instantaneous Maximum	Jan-Dec	Measurement	1 x Year	1
Crop Yield	Monitor Only	ton/ac	Calendar Year Total	Jan-Dec	Measurement	1 x Year	4
Flow Application Rate	0.35	MGacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	7
Nitrogen, Total Annual Loading Rate	150	lbacyr	Calendar Year Total	Jan-Dec	Calculation	1 x Year	3
Organic Matter, Total In Soil	Monitor Only	%	Single Value	Jan-Dec	Composite	1 x Year	5
pH, 1 To 1 Soil To Water	Monitor Only	SU	Single Value	Jan-Dec	Composite	1 x Year	6
Phosphorus, BRAY-1 Ext In Soil	200	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Phosphorus, Olson Ext in Soil	180	ppm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	8
Potassium, NH4AC, Exch In Soil	Monitor Only	lb/acr	Single Value	Jan-Dec	Composite	1 x Year	5

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Final Period*

LA 303

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Protein, Crop, Crude	Monitor Only	%	Single Value	Jan-Dec	Measurement	1 x Year	2
Salts, Water Soluble In Soil	3.0	mmh/cm	Instantaneous Maximum Intervention	Jan-Dec	Composite	1 x Year	5

SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Arsenic, Total (as As)	21	ug/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Arsenic, Total (as As)	33	ug/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Bicarbonates (HCO ₃)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Bicarbonates (HCO ₃)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
BOD, Carbonaceous 05 Day (20 Deg C)	25	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
BOD, Carbonaceous 05 Day (20 Deg C)	50	mg/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Chloride, Total	Monitor Only	mg/L	Calendar Month Average	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	
Chlorine, Total Residual	0.038	mg/L	Daily Maximum	Jan-Dec	Grab	1 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, Calculated (as CaCO ₃)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Calculation	1 x Month	
Hardness, Calcium & Magnesium, Calculated (as CaCO ₃)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	Calculation	1 x Month	
Iron, Dissolved (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	
Iron, Dissolved (as Fe)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	2 x Month	
Iron, Total (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	2 x Month	
Iron, Total (as Fe)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	2 x Month	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Manganese, Dissolved (as Mn)	Monitor Only	ug/L	Calendar Month Maximum	Jan, July	24-Hour Flow Composite	1 x Month	

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Final Period*

SD 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Manganese, Total (as Mn)	Monitor Only	ug/L	Calendar Month Maximum	Jan, July	24-Hour Flow Composite	1 x Month	
Mercury, Dissolved (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	Jan, July	Grab	1 x Month	
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	Jan, July	Grab	1 x Month	
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan, July	24-Hour Flow Composite	1 x Month	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan, July	24-Hour Flow Composite	1 x Month	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Jan, July	24-Hour Flow Composite	1 x Month	
pH, Field	9.0	SU	Instantaneous Maximum	Jan-Dec	Grab	1 x Week	
pH, Field	6.0	SU	Instantaneous Minimum	Jan-Dec	Grab	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Phosphorus, Total (as P)	Monitor Only	kg/mo	Calendar Month Total	Jan-Dec	24-Hour Flow Composite	1 x Month	
Phosphorus, Total (as P)	Monitor Only	kg/yr	Calendar Year To Date Total	Jan-Dec	Calculation	1 x Month	
Potassium, Total (as K)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Potassium, Total (as K)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Solids, Total Suspended (TSS)	30	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Suspended (TSS)	60	mg/L	Daily Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Suspended (TSS), grab (Mercury)	Monitor Only	mg/L	Calendar Month Maximum	Jan, July	Grab	1 x Month	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Average	Jan-Dec	Grab	1 x Week	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Grab	1 x Week	
Sulfate, Total (as SO4)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Month	
Sulfate, Total (as SO4)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Month	
Temperature, Water (F)	Monitor Only	Deg F	Daily Maximum	Jan-Dec	Measurement	1 x Week	
Temperature, Water (F)	86	Deg F	Monthly Average of Daily Maximum	Jan-Dec	Measurement	1 x Week	

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Final Period*

SD 002

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	25	mg/L	Calendar Month Average	Jan-Dec	Grab	1 x Day	
BOD, Carbonaceous 05 Day (20 Deg C)	66	mg/L	Daily Maximum	Jan-Dec	Grab	1 x Day	
Duration of Discharge	Monitor Only	day/mo	Calendar Month Total	Jan-Dec	Measurement	1 x Day	
Ethanol (Ethyl Alcohol)	Monitor Only	ug/L	Calendar Month Maximum	Jan, Apr, Jul, Oct	Grab	1 x Month	
Flow	Monitor Only	mgd	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day	
Flow	0.050	mgd	Calendar Month Average Intervention	Jan-Dec	Measurement, Continuous	1 x Day	
Flow	Monitor Only	MG	Calendar Month Total	Jan-Dec	Measurement, Continuous	1 x Day	
Organics, Gasoline Range as gasoline, Total	Monitor Only	ug/L	Calendar Month Maximum	Jan, Apr, Jul, Oct	Grab	1 x Month	
pH, Field	9.0	SU	Instantaneous Maximum	Jan-Dec	Grab	1 x Day	
pH, Field	6.0	SU	Instantaneous Minimum	Jan-Dec	Grab	1 x Day	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Grab	1 x Month	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	Grab	1 x Month	
Solids, Total Suspended (TSS)	30	mg/L	Calendar Month Average	Jan-Dec	Grab	1 x Day	
Solids, Total Suspended (TSS)	79	mg/L	Daily Maximum	Jan-Dec	Grab	1 x Day	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Average	Jan-Dec	Grab	1 x Day	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Grab	1 x Day	

SW 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Iron, Dissolved (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Measurement	1 x Month	
Iron, Total (as Fe)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	Measurement	1 x Month	
Manganese, Dissolved (as Mn)	Monitor Only	ug/L	Calendar Month Average	Jan, July	Measurement	1 x Month	
Manganese, Total (as Mn)	Monitor Only	ug/L	Calendar Month Average	Jan, July	Measurement	1 x Month	

WS 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
BOD, Carbonaceous 05 Day (20 Deg C)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	

Green Plains Otter Tail

Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Final Period*

WS 001

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Calcium, Total (as Ca)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Chloride, Total	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Chloride, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Flow	16	MG	Calendar Year To Date Total	Jan-Dec	Measurement, Continuous	1 x Day	
Flow	0	MG	Calendar Month Total	Nov-Apr	Measurement, Continuous	1 x Day	
Flow	Monitor Only	MG	Calendar Month Total	May-Oct	Measurement, Continuous	1 x Day	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Magnesium, Total (as Mg)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrite Plus Nitrate, Total (as N)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Ammonia, Total (as N)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Nitrogen, Kjeldahl, Total	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
pH, Field	Monitor Only	SU	Calendar Month Maximum	Jan-Dec	Grab	1 x Week	
pH, Field	Monitor Only	SU	Calendar Month Minimum	Jan-Dec	Grab	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Phosphorus, Total (as P)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Sodium Adsorption Ratio (SAR)	8.5	ratio	Calendar Month Average Intervention	Jan-Dec	Calculation	1 x Week	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Sodium, Total (as Na)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Average	Jan-Dec	24-Hour Flow Composite	1 x Week	
Solids, Total Dissolved (TDS)	Monitor Only	mg/L	Calendar Month Maximum	Jan-Dec	24-Hour Flow Composite	1 x Week	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Average	Jan-Dec	Grab	1 x Week	
Specific Conductance, Field	Monitor Only	umh/cm	Calendar Month Maximum	Jan-Dec	Grab	1 x Week	

Green Plains Otter Tail
Limits and Monitoring Requirements

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

The Permittee shall comply with the limits and monitoring requirements as specified below.

Period: *Limits Applicable in the Final Period*

WS 002

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Mass Transported From Facility	Monitor Only	ton/yr	Calendar Year Total	Jan-Dec	Measurement, Continuous	1 x Year	

WS 003

Parameter	Limit	Units	Limit Type	Effective Period	Sample Type	Frequency	Notes
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Average	Jan-Dec	Measurement, Continuous	1 x Day	
Mercury, Total (as Hg)	Monitor Only	ng/L	Calendar Month Maximum	Jan-Dec	Measurement, Continuous	1 x Day	

Notes:

- 1 -- As measure of acreage to which waste is applied.
- 2 -- As percent dry mass total Kjeldahl nitrogen. Report the date each time a crop is harvested. If a crop is harvested more than once during the growing season, this characteristic shall be determined for each cutting.
- 3 -- Calculate as flow-weighted sum of total annual mass Kjeldahl nitrogen and nitrate-plus-nitrite nitrogen applied to site, divided by the acreage of the site. Limit applies to the sum of all sources of nitrogen applied to the site.
- 4 -- Report in dry tons/acre. Report the date each time a crop is harvested. If a crop is harvested more than once during the growing season, this characteristic shall be determined for each cutting.
- 5 -- Sample before irrigation or application of commercial or other supplemental fertilizer. The composite shall consist of a mixture of 15-20 subsamples taken from a 0 to 8-inch core. At least one composite sample shall be collected for each 40 acres.
- 6 -- Sample before irrigation or application of commercial or other supplemental fertilizer. The composite shall consist of a mixture of 15-20 subsamples taken from a 0 to 8-inch core. At least one composite sample shall be collected for each 40 acres. Note that the pH results determine whether the Bray P-1 or Olson soil phosphorus test is conducted.
- 7 -- The Permittee is limited to 1.3 inches applied during a single irrigation event, with at least three days rest between irrigation events. Monitor the volume of wastewater that is applied to the sprayfield and report this value in the Annual Report.
- 8 -- The soil test method used for extractable phosphorus in soil is either the Bray P-1 test, or the Olson test; the Olson procedure should be used if the soil pH is 7.4 or higher. Sample before irrigation or application of commercial or other supplemental fertilizer. The composite shall consist of a mixture of 15-20 subsamples taken from a 0 to 8-inch core. At least one composite sample shall be collected for each 40 acres.

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Chapter 1. Compliance Schedule

1. Compliance Schedule

- 1.1 The Permittee must comply with and attain the outfall SD001 arsenic final limits by 180 days after permit issuance.

Chapter 2. Facility Specific Definitions

1. Definitions

- 1.1 Please refer to the 'Permit Users Manual' included with the permit for standard definitions.

Chapter 3. Whole Effluent Toxicity (WET) Testing - Acute

1. General Requirements

- 1.1 This permit does not include an acute whole effluent toxicity limit; however the facility is required to conduct acute toxicity tests for outfall SD001. Results of acute toxicity tests will be evaluated against a monitoring threshold value of 0.9999 TUa.
- 1.2 The Permittee shall conduct annual acute toxicity test batteries on outfall SD001 beginning with the first full calendar quarter following the issuance date of the permit. The first set of annual acute WET battery results are due on the last day of the first full calendar quarter following permit issuance.

Each of the other annual acute WET battery test results are due on an annual basis within the same quarter the first acute WET test battery results were submitted. (For example, if the permit is issued April 28, the first test battery results are due by September 30th and each set of annual test battery results are due by September 30th of each of the proceeding years for the life of the permit).

- 1.3 The Limits and Monitoring Requirements section of this permit requires monitoring at outfall SD001 for certain parameters other than toxicity. During those times when the toxicity testing is required, this monitoring shall be conducted on samples taken at the same time as the samples used for toxicity testing.
- 1.4 If the Permittee changes from the use of the authorized Fremont Set of chemical additives to the authorized Nalco Set of chemical additives, the Permittee shall notify the MPCA in writing upon the date of this change.

This written notification shall make clear that the change to the Nalco Additives Set triggers an additional WET test under the terms of the permit.

- 1.5 The Permittee shall conduct an additional acute toxicity test battery on outfall SD001 beginning with the first full calendar month following a change from the authorized Fremont Set of chemical additives to the authorized Nalco Set of chemical additives.

The results from this additional WET test are due 60 days after the change to the Nalco Additives Set. (For example, if the change to the Nalco Additives Set is October 28, these results are due by December 27.)

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Chapter 3. Whole Effluent Toxicity (WET) Testing - Acute

2. Species and Procedural Requirements

- 2.1 The Permittee shall alternate the toxicity test sampling between dates when the Fremont Biodispersant 2 and Antimicrobial 7287 application wastewater is and is not being discharged through outfall SD001. (That is, for the test sampling during Fremont Biodispersant 2 and Antimicrobial 7287 application, at least one of the effluent samples used for testing shall be collected immediately after tower blowdown resumes following the Fremont Biodispersant 2 and Antimicrobial 7287 application.) The Permittee shall clearly indicate on the toxicity test results submitted to the MPCA whether or not the toxicity test sampling occurred during a date of Fremont Biodispersant 2 and Antimicrobial 7287 application wastewater discharge.

If the Permittee is using the Nalco Set instead of the Fremont Set of chemical additives, this alternating test sampling does not apply.

- 2.2 Tests shall be conducted in accordance with procedures outlined in EPA-821-R-02-012 "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" - Fifth Edition (Acute Manual) and any revisions to the Manual. Any test that is begun with an effluent sample that exceeds a total ammonia concentration of 5 mg/L shall use the carbon dioxide-controlled atmosphere technique to control pH drift.
- 2.3 Test organisms for each test battery shall include the fathead minnow (*Pimephales promelas*)-Method 2001.0, *Ceriodaphnia dubia*-Method 2002.0, and *Daphnia magna*-Method 2021.0.
- 2.4 Static renewal acute serial dilution tests of the effluent shall consist of a control, 12, 25, 50, 75 and 100 percent effluent.
- 2.5 All effluent samples shall be flow proportioned, 24-hour composite samples. Test solutions shall be renewed daily. Testing of the effluent shall begin within 36 hours of sample collection. Receiving water collected from the Otter Tail River at station SW001, upstream of and outside of the influence of discharge, shall be used for dilution and controls.
- 2.6 Any other circumstances not addressed in the previous requirements or that require deviation from that specified in the previous requirements shall first be approved by the MPCA.

3. Quality Control and Report Submittals

- 3.1 Any test that does not meet quality control measures, or results which the Permittee believes reflect an artifact of testing shall be repeated within two (2) weeks. These reports shall contain information consistent with the report preparation section of the Acute Manual. The MPCA shall make the final determination regarding test validity.

4. Positive Toxicity Result for WET

- 4.1 Should a test exceed 0.9999 TUa for whole effluent toxicity based on results from the most sensitive test species, the Permittee shall conduct two repeat test batteries on all species. The repeat tests are to be completed within forty-five (45) days after completion of the positive test. These tests will be used to determine if toxicity exceeding 0.9999 TUa remains present for any test species. If no toxicity is present above 0.9999 TUa for any test species, the Permittee shall return to the test frequency specified by the permit. If the repeat test batteries indicate toxicity above 0.9999 TUa for any test species, the Permittee shall submit for MPCA review a plan for conducting a Toxicity Reduction Evaluation (TRE) including the Facility Performance Review (to be submitted to the MPCA WQ Submittals Center within 60 days after the toxicity discovery date), and at a minimum, provide quarterly reports, starting from the date of TRE submittal, regarding progress towards the identity, source, and any plans for the removal of the toxicity. The TRE shall be consistent with EPA guidance or subsequent procedures approved by the MPCA in attempting to identify and remove the source of the toxicity. Routinely scheduled acute toxicity test batteries required in this permit section shall be suspended for the duration of the TRE. The return to routine acute toxicity testing is subject to successful completion of conformation testing, as determined by the MPCA. Amendments to the initial TRE shall be approved by MPCA staff and the schedules identified therein.

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Chapter 3. Whole Effluent Toxicity (WET) Testing - Acute

5. WET Data and Test Acceptability Criteria (TAC) Submittal

- 5.1 All WET test data and TAC must be submitted to the MPCA by the dates required by this section of the permit using the following form(s) and associated instruction forms: Minnesota Pollution Control Agency Acute Toxicity Test Report. Data not submitted on the correct form(s), or submitted incomplete, will be returned to the permittee and deemed incomplete until adequately submitted on the designated form (identified above). Data should be submitted to:

MPCA
Attn: WQ Submittals Center
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

6. Permit Re-opening for WET

- 6.1 Based on the results of the testing, the permit may be modified to include additional toxicity testing and a whole effluent toxicity limit.

7. Whole Effluent Toxicity Requirement Definitions

- 7.1 "Acute Whole Effluent Toxicity (WET) Toxicity Test" is a static renewal test conducted on an exponentially diluted series of effluent. The purpose is to calculate the proportion of effluent that causes 50 percent mortality/immobility of aquatic organisms at 48 or 96 hours. An LC50/EC50 (lethal/immobile concentration) less than or equal to 100 percent effluent constitutes a positive for toxicity.
- 7.2 "Acute toxic unit (TUa)" is the reciprocal of the effluent dilution that causes the acute effect by the end of the acute exposure period. For example, a TUa equals (100% effluent)/(48 or 96 hour LC50 in %).
- 7.3 "Test" refers to an individual species.
- 7.4 "Test Battery" consists of WET testing of all test species for the specified test. For acute WET testing, all test species includes Fathead minnows, daphnia magna, and ceriodaphnia dubia.

Chapter 4. Total Residual Oxidants - Non-Domestic

1. General Requirements

- 1.1 "Daily Maximum" for Total Residual Chlorine (TRC) concentration limits means:
- a. The value of a single sample in a 24-hour period if the concentration of TRC in that sample is 0.038 mg/L or less.
 - b. If the concentration of TRC in the first sample is greater than 0.038 mg/L reporting the average of two to twelve samples analyzed in a 24-hour period is allowed. The second sample must be taken two hours after the first sample and subsequent samples are to be taken at one-hour intervals thereafter, not to exceed a total of twelve samples in a 24-hour period. Values below the Reportable Limit for TRC are assumed to be zero for averaging purposes only.
 - c. The average value of multiple daily TRC effluent sample analyses must meet the 0.038 mg/L limit to be in compliance.
- 1.2 Total Residual Chlorine must be analyzed immediately. This means within 15 minutes or less of sample collection.
- 1.3 A Method Detection Limit (MDL) must be established for this parameter.

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Chapter 4. Total Residual Oxidants - Non-Domestic

1. General Requirements

The Reportable Limit must be established for this parameter. This should be based on the Method Detection Limit and laboratory, analyst, and equipment used in the analysis. The Reportable Limit cannot be greater than 0.038 mg/L.

- 1.4 The Method Detection Limit and Reportable Limit should be reassessed when the method, equipment, laboratory, or analyst changes.
- 1.5 Monitoring results below the Reportable Limit should be reported as "<" the Reportable Limit. For example, if the Reportable Limit is 0.01 mg/L and a parameter is not detected at a value of 0.01 mg/L or greater, the concentration shall be reported as "<0.01 mg/L." The symbol "<" means "less than."
- 1.6 The equipment should be checked against a known standard at least monthly.

Chapter 5. Surface Water Stations

1. Requirements for Specific Stations

- 1.1 SW 001: The Permittee shall Submit a monthly DMR monthly by 21 days after the end of each calendar month following permit issuance.

2. Sampling Location

- 2.1 Samples for Station SW001 shall be taken in the Otter Tail River upstream of and outside of the influence of discharge outfall SD001.
- 2.2 Samples shall be taken at mid-stream, mid-depth. Record location, date, time and results for each sample on the supplemental Discharge Monitoring Report form.

3. Winter Sampling Conditions

- 3.1 The Permittee shall sample flows at the designated monitoring stations including when this requires removing ice to sample the water. If the station is completely frozen throughout a designated sampling month, the Permittee shall check the "No Flow" box on the Discharge Monitoring Report (DMR) and note the ice conditions in Comments on the DMR.

4. Sampling Protocol

- 4.1 Sample water shall be preserved according to lab instructions and delivered to a certified lab within the minimum holding times.

5. Discharge Monitoring Reports

- 5.1 The Permittee shall submit monitoring results in accordance with the limits and monitoring requirements for this station. If flow conditions are such that no sample could be acquired, the Permittee shall check the "No Flow" box and note the conditions on the Discharge Monitoring Report (DMR).

Chapter 6. Surface Discharge Stations

1. Sampling Location

- 1.1 Samples and measurements required by this permit shall be representative of the monitored activity.

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Chapter 6. Surface Discharge Stations

2. Requirements for Specific Stations

- 2.1 SD 001: Samples for outfall SD001 shall be taken: in the manhole, located approximately two miles downstream from the facility, in the ditch off of Highway 210, or in the pipe that conveys the wastewater flow to outfall SD001; or at a point after the SD001 individual plant wastewater streams have fully mixed, for example within the Main Process Building just prior to the point where the total combined effluent enters the sub-surface pipe to the outfall. The sample taken shall be representative of the combined waste streams.
- 2.2 SD 001: At least one of the samplings each month at SD 001 shall be taken during a regular softener regeneration discharge event, if regenerate discharge occurs during that month. Indicate on the Discharge Monitoring Report form when a sampling event during a regular softener discharge event has occurred.
- 2.3 SD 001, SD 002: The Permittee shall Submit a monthly DMR monthly by 21 days after the end of each calendar month following permit issuance.
- 2.4 SD 002: Monitoring for outfall SD002 shall be conducted in the outfall manhole immediately downstream of the pond, during periods when the stormwater pond is discharging.
- 2.5 SD 002: Duration of discharge shall be reported as a whole number for each day during which discharge occurs.

3. Mercury Limits and Monitoring Requirements

- 3.1 Permittees are required to sample for TSS (grab sample) at the same time that Total/Dissolved Mercury samples are taken. All results must be recorded on DMRs.
- 3.2 Total and Dissolved Mercury samples must be analyzed using EPA Method 1631 with clean techniques method 1669 and any revisions to those methods. Should another mercury analytical method that has a reportable quantitation level that allows for low-level sample characterization be approved by the EPA and certified by the Minnesota Department of Health, the Permittee is authorized to use that method.
- 3.3 The Permittee shall submit the QA/QC sheets and trip blank sheets associated with each mercury sample for outfall SD001 with the mercury DMR results.

4. General Requirements

- 4.1 The thermal loading of the discharge shall not raise the temperature of the receiving water greater than five degrees Fahrenheit above natural in the stream based on the monthly average of the maximum daily temperatures, except in no case shall the temperature exceed the daily average temperature of 86 degrees.

5. Surface Discharges

- 5.1 Floating solids or visible foam shall not be discharged in other than trace amounts.
- 5.2 Oil or other substances shall not be discharged in amounts that create a visible color film.
- 5.3 The Permittee shall install and maintain outlet protection measures at the discharge stations to prevent erosion.

6. Winter Sampling Conditions

- 6.1 The Permittee shall sample flows at the designated monitoring stations including when this requires removing ice to sample the water. If the station is completely frozen throughout a designated sampling month, the Permittee shall check the "No Discharge" box on the Discharge Monitoring Report (DMR) and note the ice conditions in Comments on the DMR.

7. Special Requirements

- 7.1 The facility cooling tower system shall have a bleed lock-out period of at least eight hours after Biodispersant 2 and Antimicrobial 2787 are applied. During this bleed lock-out period, no wastewater shall be discharged from the cooling tower system.

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Chapter 6. Surface Discharge Stations

7. Special Requirements

- 7.2 The Calendar Year to Date Total Phosphorus in units of kg/year is calculated as follows: For each month, multiply the total volume of effluent flow (in million gallons) by the monthly average concentration of effluent Phosphorus (in mg/L) and by a 3.785 conversion factor to get Phosphorus in units of kg/month. Then add all monthly values from the first month in the effective period to the end date of the reporting period. For example, if the "effective period" is Jan-Dec and the reporting period ends June 30th, add the monthly values from January through June and report that value as the Calendar Year to Date Total.

8. Discharge Monitoring Reports

- 8.1 The Permittee shall submit monitoring results for discharges in accordance with the limits and monitoring requirements for this station. If no discharge occurred during the reporting period, the Permittee shall check the "No Discharge" box on the Discharge Monitoring Report (DMR).

Chapter 7. Waste Stream Stations

1. Requirements for Specific Stations

- 1.1 WS 001: Samples for Station WS001 shall be taken at a point representative of the stormwater waste stream flow prior to the spray irrigation sites.
- 1.2 WS 001: The Permittee shall Submit a monthly DMR monthly by 21 days after the end of each calendar month following permit issuance.
- 1.3 WS 002: Measurements for station WS002 shall be taken as the mass of filter backwash residual solids that is transported from the facility for landfill disposal.

The Permittee shall note in "Comments" field of the DMR the location of the landfill(s) disposal during the calendar year.

- 1.4 WS 002: The Permittee shall Submit an annual DMR annually by January 22 of each year following permit issuance.
- 1.5 WS 003: Values for station WS003 shall be recorded as the low-level mercury content analyses certified for each batch of acid used, during the month, in the water system discharging to outfall SD001. The Permittee may obtain these results from the supplier of the acid.
- 1.6 WS 003: The permittee shall Submit a monthly DMR monthly by 21 days after the end of each calendar month following permit issuance.

2. Sampling Frequency

- 2.1 Sampling for station WS001 is required only during periods of discharge to the irrigation sites. If there is no discharge during the reporting period, the Permittee shall check the "No Discharge" box on the Discharge Monitoring Report (DMR).

Chapter 8. Water Treatment Plant, NPDES/SDS

1. Residual Solids Management

- 1.1 The Permittee shall provide for the effective management and/or disposal of residual solids, or other substances resulting from treatment of water.
- 1.2 The Permittee shall dispose of residual solids in such a manner and at such locations that disposal practices shall not result in unlawful pollution of the air, surface water or ground water, or create nuisance conditions.

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Chapter 8. Water Treatment Plant, NPDES/SDS

1. Residual Solids Management

- 1.3 Facilities disposing of water filter backwash solids shall follow the guidance document titled "Guidelines - Disposal Methods for Water Filter Backwash Solids."
- 1.4 Stockpiling residual solids is prohibited unless authorized by the MPCA. If the Permittee proposes to stockpile residual solids, the Permittee shall submit a description of the type and amount of solids to be stockpiled and the proposed location of the stockpiles for review and approval.

2. Residual Solids Management Annual Report

- 2.1 The Permittee shall submit a Water Treatment Plant Residual Solids Annual Report due 31 days after the end of each calendar year following permit issuance. The annual report form is located on the internet at <http://www.pca.state.mn.us/> or by request from the MPCA.
- 2.2 The Water Treatment Plant Residual Solids Annual Report shall include:
 - a. notification of the quantity of solids removed and the method and location of disposal; and
 - b. analytical results, if applicable.

Chapter 9. Ethanol

1. Authorization

- 1.1 The major modification or reissuance of this permit may be required for proposed new makeup water source(s) other than production Wells #1 and #2. If the Permittee proposes to supply makeup water from a source other than the wells at Wells #1 and #2, the Permittee shall notify the MPCA in writing at least 180 days before the planned starting date of the proposed new makeup water flow, and shall include at least the following:
 - a. copies of all written and electronic communications between the Permittee and the Minnesota Department of Natural Resources regarding the proposed source;
 - b. complete data to represent the water quality of the proposed source, with the test parameters included as approved by the MPCA;
 - c. the proposed average and maximum flow rates of the proposed new source, and of Wells #1 and #2 after flow would begin from the new source; and
 - d. any proposed changes in water and related solids management at the facility different than those described in the application for this permit, including chemical uses, wastewater flows and concentrations.

2. Prohibited Discharges

- 2.1 This permit does not authorize the discharge of boiler waters, industrial process wastes (including, but not limited to, wet cake, stillage, syrup, infected batches), sewage, wash water, scrubber water, spills, oil, hazardous substances, or equipment/vehicle cleaning and maintenance wastewaters to ditches, wetlands or other surface waters of the state.
- 2.2 This permit prohibits the discharge of any still, tank, pipe, boiler or filter cleaning wastes.
- 2.3 This permit prohibits the discharge of RO membrane cleaning wastes, including all waters and wastes associated with the Membrane Cleaning (CIP) System.
- 2.4 The Permittee shall prevent the routing of pollutants from the facility to a municipal wastewater treatment system in any manner unless authorized by the pretreatment standards of the MPCA and the municipal authority.
- 2.5 The Permittee shall not transport pollutants to a municipal wastewater treatment system that will interfere with the operation of the treatment system or cause pass-through violations of effluent limits or water quality standards.

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Chapter 9. Ethanol

2. Prohibited Discharges

- 2.6 The Permittee must develop and implement appropriate best management practices to ensure that discharges of non-contact cooling water are not contaminated by failing/leaking heat exchangers, ammonia compressors, etc.

There shall be no discharge of wastes from the physical cleaning of the cooling system. Cleaning wastewaters from periodic and/or routine maintenance of the cooling system and/or from cleaning the insides of the tubes/heat exchangers are not authorized for discharge under this permit.

3. General Requirements

- 3.1 EPA Method 8260B, and any revision to that method, shall be used for analysis of ethanol; analytical method detection level shall not exceed 100 micrograms per liter.

Analysis must meet a Limit of Quantitation (LOQ), or Method Detection Limit, for the Gasoline Range Organics analysis of 0.1 milligram per liter (mg/L), consistent with the Wisconsin DNR Modified GRO Method, dated September, 1995, and any revisions to that method.

Should other ethanol or GRO analytical method that has a reportable quantitation level that allows for sample characterization, to the same or lesser detection levels as those stated above, be approved by the EPA and certified by the Minnesota Department of Health, the Permittee is authorized to use that method.

- 3.2 Wet cake and modified wet cake stored outside at the facility are limited to the fully walled and roofed concrete pad. The amount of wet cake and modified wet cake stored shall not exceed 1000 tons. No measurable drainage shall occur from the wet cake and modified wet cake.
- 3.3 Based on the evaluation for the potential of migration from the site, the Permittee shall design, construct, and operate the storage facility to meet the requirements in items a-c, below:
- a. Migration of contaminants into the adjacent subsurface soil, groundwater, or surface water at any time during the active life, or the closure period, of the facility must be prevented.
 - b. Run on and runoff of stormwater must be controlled. The Permittee must implement management practices designed to control run on and runoff of stormwater from the storage area. The Permittee must design, construct, operate, and maintain a stormwater management system capable of collecting and controlling the volume of contaminated stormwater resulting from a 24-hour, 25-year storm unless otherwise directed by the Agency.
 - c. Collection and holding facilities, such as tanks or basins, associated with the run on and runoff control systems must be managed to maintain the design capacity of the system. Disposal of wastes and wastewaters generated from these facilities must be managed appropriately.
- 3.4 Industrial byproducts, such as wet cake and DDGS, shall be managed so as to minimize adverse effects resulting from odors, noise and aerosol drift. The Permittee shall provide reasonable assurance that the management of industrial byproducts will not cause nuisance conditions.

Operational and structural controls, or some combination thereof, shall be considered in providing reasonable assurance. Operational controls include methods such as timing outdoor storage to minimize inconvenience to neighboring residents and to minimize the potential for human contact.

If the measures or equipment intended to create reasonable assurance no longer function as intended, corrective action (which may include additional maintenance or modifications of the management system) shall be taken by the Permittee. The Permittee shall submit a written description of the corrective actions taken to eliminate the nuisance conditions to the MPCA within five days of discovery of the incident. Other corrective action may be required by the MPCA as needed to comply with the requirements of this part.

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Chapter 9. Ethanol

3. General Requirements

- 3.5 Materials such as stillage, syrup, wet cake, distillers grains and oils generated by the facility that will not be reused in the production process nor be used for livestock feed or fuel (for example, due to contamination, spoilage, infection or poor grade) shall be disposed of at a landfill authorized to accept the waste, or at a publicly owned treatment works (POTW) consistent with the requirements of the NPDES/SDS permit for the POTW.

The Permittee shall notify the MPCA staff within 24 hours when more than 100 gallons per day of such off-grade, spoiled, contaminated or infected materials (those that will not be reused in the production process nor used for livestock feed or fuel) are generated. This notification shall include at least the following information:

- a. Name and basic description of the unusable material generated;
- b. Origin of the unusable material in the production process;
- c. Volume of the unusable material generated;
- d. Physical and chemical characterization of the unusable material;
- e. Explanation of why the material is being landfilled or handled by a POTW; and
- f. The name and location of the facility that will ultimately dispose of the waste.

If an appropriate disposal facility has not yet been secured at the time of the notification, the Permittee shall notify the MPCA staff within 24 hours of securing an appropriate method for disposal.

- 3.6 The Permittee may submit, for MPCA review and approval, an Ethanol Byproducts Contingency Management and Disposal Plan (Contingency Plan) if the Permittee proposes disposal methods other than those identified above. This Contingency Plan must be approved in writing by the MPCA prior to implementation, and shall be submitted to the MPCA at least 180 days before the proposed implementation date.

This Contingency Plan shall consist of:

- a) For proposed land application of the material, a complete NPDES/SDS permit application to the MPCA for industrial by-product land application.
- b) For other than proposed land application of the material, complete information as determined by MPCA in order to evaluate the proposed Contingency Plan, including but not limited to plans, specifications, and other technical information that is necessary to determine whether the proposal will meet the applicable statutes and rules.

4. Application for Permit Reissuance

- 4.1 The permit application shall include analytical data as part of the application for reissuance of this permit. These analyses shall be done on individual samples taken during the twelve-month period before the reissuance application is submitted. The application shall identify the sampling date(s).

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Chapter 9. Ethanol

4. Application for Permit Reissuance

4.2 The permit application shall include analytical data for the following parameters at outfall SD001:

- a. carbonaceous biochemical oxygen demand, chemical oxygen demand, total organic carbon, temperature, ammonia, nitrate-nitrite, total Kjeldahl nitrogen;
- b. bicarbonates, boron, fluoride, sulfate, total dissolved solids, conductivity;
- c. bromate, bromide, bromoform, bromodichloromethane, chlorodibromomethane, dichlorobromomethane, chloroform, chlorate, chloride, chlorite, perchlorate;
- d. acrylamide, acrylonitrile, dibromoacetonitrile, ethylene glycol, and 2,2-dibromo-3-nitrilopropionamide (DBNPA);
- e. total suspended solids, total phosphorus;
- f. arsenic, cobalt, copper, molybdenum, selenium, uranium, vanadium and zinc (all in total form, with reporting limit less than or equal to 2 ug/L);
- g. radon, radium-226, radium-228, gross alpha (all in total form pCi/L);
- h. hardness as calcium and magnesium and total salinity; and
- i. ethanol and gasoline range organics.

4.3 The permit application shall include analytical data for the following parameters at outfall SD002:

- a. carbonaceous biochemical oxygen demand, chemical oxygen demand, total organic carbon, temperature, ammonia, nitrate-nitrite, total Kjeldahl nitrogen;
- b. bicarbonates, boron, chloride, sulfate, total dissolved solids, conductivity;
- c. total suspended solids, total phosphorus;
- d. hardness as calcium and magnesium and total salinity; and
- e. ethanol and gasoline range organics.

Chapter 10. Industrial Spray Irrigation

1. Authorization

- 1.1 This permit does not authorize the discharge of pollutants to the saturated zone, nor to tile line systems that discharge to waters of the state directly or through the saturated zone.
- 1.2 Wastewaters that are land-applied shall not include boiler, ion exchange softening, reverse osmosis reject brine, cooling system or cleaning residual flows.

2. Operator Certification

- 2.1 The Permittee shall employ at least one Type V operator as required in Minn. R. 7048.0500, subp. 1, on site at the Permittee's operations, who will be responsible for the day-to-day operations of the wastewater treatment disposal system.

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Chapter 10. Industrial Spray Irrigation

2. Operator Certification

- 2.2 All industrial spray irrigation activities must be done by or under the supervision of a Type V certified operator. All information submitted to the MPCA related to industrial spray irrigation, such as annual reports, discharge monitoring reports, or submittals required by this permit must be completed and signed by a Type V certified operator. General correspondence such as letters, inquiries and comments do not need to be signed by a Type V certified operator.
- 2.3 If the Permittee chooses to meet operator certification requirements through a contractual agreement, the Permittee shall provide a copy of the contract to the MPCA. The contract shall include the certified operator's name; certificate number; company name if appropriate; evidence that the operation is being adequately supervised by a properly certified operator; the period covered by the contract and provisions for renewal; the duties and responsibilities of the certified operator; the duties and responsibilities of the permittee; and provisions for notifying the MPCA 30 days in advance of termination if the contract is terminated prior to the expiration date.
- 2.4 The Permittee shall notify the MPCA within 30 days of a change in operator certification or contract status.

3. Land Application Sprayfield Management Plan

- 3.1 To address the specific operations of the spray irrigation fields; optimize the performance of the treatment system; and, to maintain compliance with Minn. Stat. chs. 115 and 116, as amended, and Minn. R. chs. 7001, 7050, 7053 and 7060, the Permittee shall prepare and implement an MPCA-approved Sprayfield Management Plan.

The Permittee shall submit a Sprayfield Management Plan for MPCA review and approval by 120 days after permit issuance.

- 3.2 If the MPCA has not responded to the plan within 60 days of its receipt with comments or requested changes to the plan, the submitted plan will become the facility's operating Sprayfield Management Plan.

If the MPCA determines that the operating Sprayfield Management Plan is not effective in preventing permit violations, the Permittee may be required by the MPCA to revise their Sprayfield Management Plan.

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Chapter 10. Industrial Spray Irrigation

3. Land Application Sprayfield Management Plan

3.3 The Sprayfield Management Plan shall include the following elements, at a minimum:

- a. Facility information, to include the following:
 - i. Sprayfield facility description and maps;
 - ii. Locations of all monitoring locations, such as tile discharges, monitoring wells, etc.; and,
 - iii. General description of sprayfield operation.
- b. A description of the management of wastewater application, including the following:
 - i. Irrigation scheduling (daily, monthly, annually);
 - ii. Irrigation intensity;
 - iii. Loading rates (hydraulic and nutrient);
 - iv. Load/rest cycle;
 - v. Runoff collection, if applicable;
 - vi. Drain tile discharge or collection, if applicable;
 - vii. Process control or test method for tile line discharges required by the Limits and Monitoring section of this permit, and,
 - viii. Soil-moisture monitoring system.
- c. The procedure to account for all sources of nitrogen to the land application site(s), including but not limited to commercial fertilizer, manure, silage, sewage or wastewater treatment solids and residual solids;
- d. A description of crop management practices, as described by this chapter.
- e. Identify areas susceptible to runoff and identify management practices to prevent and control runoff.
- f. Description of the inspection and maintenance program for pipe line breaks and associated irrigation equipment, as required by this chapter.
- g. A 'Spill Prevention and Response Procedure', as described by this chapter.
- h. A 'Contingency Plan', as described by this chapter.
- i. A 'Monitoring Plan', as described by this chapter.
- j. A 'Ground Water Monitoring Plan', as described by this chapter, if ground water monitoring is required by this permit.

3.4 The description of crop management practices shall include at least the following elements:

- a. List of cover crop type(s);
- b. Description of crop establishment and maintenance procedures;
- c. Schedule for crop harvest and removal;
- d. Description of the methods for measuring crop yield; and,
- e. Methods for conducting the crop survey required by the Limits and Monitoring section of this permit.

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Chapter 10. Industrial Spray Irrigation

3. Land Application Sprayfield Management Plan

3.5 A 'Spill Prevention and Response Procedure' shall be prepared and implemented, and shall include the following elements, at a minimum:

- a. Identification of where spills have occurred and where they have the potential to occur;
- b. Determination and identification of drainage points for potential spill areas, and develop appropriate spill prevention and containment measures for these areas;
- c. Detailed description of procedures for notifying state, local, and company personnel in the event of a spill shall be developed and made available to appropriate personnel;
- d. Detailed procedures for containing and cleaning up spills shall be developed and made available to appropriate personnel;
- e. A list of all spill control equipment including the equipment location; and,
- f. An employee training program to inform appropriate personnel of notification and spill response procedures.

3.6 A 'Contingency Plan' for managing the spray irrigation system during time periods when irrigation is not possible due to adverse climatic conditions, equipment failure, or in the event the management requirements of the 'Site Management, Limitations and Restrictions' part of this chapter are violated, shall be prepared and implemented.

The plan should include alternatives such as:

- a. Storage tanks or lagoons;
- b. Additional land;
- c. Set-aside corners or other unused parcels of land;
- d. Transporting wastewater;
- e. Processing shutdown; and,
- f. Treatment facilities.

3.7 A 'Monitoring Plan' shall be prepared and implemented, and shall contain the following information, at a minimum:

- a. Sampling point identification;
- b. Sampling protocol for all monitoring points;
- c. Sampling schedule;
- d. List of parameters to be analyzed;
- e. Standard test methods; and,
- f. Reporting limits.

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Chapter 10. Industrial Spray Irrigation

3. Land Application Sprayfield Management Plan

- 3.8 The Permittee shall comply with the Sprayfield Management Plan for the facility approved in writing by the MPCA, or subsequent revisions to this Plan, as approved in writing by the MPCA.

The Permittee shall obtain written approval of the MPCA before modifying a previously approved Sprayfield Management Plan.

4. Site Management, Limitations, and Restrictions

Hydraulic Loading Rates

- 4.1 The Permittee is limited to 1.3 inches applied during a single irrigation event, with at least three days rest between irrigation events.
- 4.2 Hydraulic loading rate limits are set to prevent ponding and runoff from land application sites. The limitations specified in this part shall not cause any other application limits of this chapter or the 'Limits and Monitoring' section of this permit to be exceeded.

All of the following limitations apply to the spray irrigation of industrial wastewater:

- a. No runoff of industrial waste water from the application site is allowed.
- b. Industrial waste water application shall be limited to prevent the runoff of any industrial waste water mixed with rain water.
- c. Industrial waste water may not be sprayed during any rainfall event that causes runoff from the site.
- d. Uncontaminated storm water may be allowed to drain from a spray irrigation field.
- e. Industrial waste water shall not be applied when the cover crop is dormant as a result of frost or below freezing temperatures.

Miscellaneous Management Practices/Restrictions

- 4.3 All of the following standards apply to the spray irrigation of industrial wastewater.
- a. The Permittee shall operate each spray field in a load and rest cycle. The discharge shall be evenly distributed to individual sections of the spray field and allow for sufficient resting periods to maintain the absorptive capacity of the soil.
 - b. The spray irrigation system cover crop shall be cut and removed at least twice a year to stimulate growth of vegetation and to remove nutrients from the system. If forage crops are grown, a crop survey must be conducted by a crop expert to determine the percent of all predominant varieties, percent broad leaves, and percent other grasses.
 - c. The discharge of industrial waste water to any authorized land application site shall not have physical or chemical characteristics that prevent the proper operation of the land disposal system. The discharge shall be free of material that interferes with the operation of spray nozzles or orifices.
 - d. The Permittee shall conduct a visual inspection of each tile line discharge at least once per day for changes that indicate a potential exceedance of a tile line limit or intervention limit. The daily tile line discharge observations shall be documented in accordance with the 'Records' part of this chapter.

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Chapter 10. Industrial Spray Irrigation

4. Site Management, Limitations, and Restrictions

- 4.4 Nuisance Conditions. Spray irrigation of wastewater shall be performed so as to minimize adverse effects resulting from odors, noise and aerosol drift. The permittee shall provide reasonable assurance that the land application of wastewater will not cause nuisance conditions. Operational and structural controls, or some combination thereof, may be considered in providing reasonable assurance, and shall be specified in the facility's Sprayfield Management Plan, as required by this chapter.

Operational controls include methods such as timing spraying to minimize inconvenience to neighboring residents and to minimize the potential for human contact; and, increasing setback distances. Structural controls include methods such as innovative structural design; use of a weather station with an anemometer; the use of drop nozzle irrigation to minimize spray drift toward public land or access ways; and, aeration.

In the event that the measures or equipment intended to create reasonable assurance no longer function as intended, corrective action (which may include additional maintenance or modifications of the treatment system) shall be taken by the Permittee. The Permittee shall submit a written description of the corrective actions taken to eliminate the nuisance conditions to the MPCA within five (5) days of discovery of the incident. Other corrective action may be required by the Commissioner, as necessary to comply with the requirements of this part.

- 4.5 Wastewater shall not be applied after the cover crop has become dormant as a result of frost or below freezing temperatures.
- 4.6 A perennial cover crop shall be maintained at the land application site(s) throughout the growing season.
- 4.7 Wastewater shall be applied so as not to harm vegetation and so that prolonged saturated soil conditions do not develop due to the application. Wastewater shall not be applied during precipitation periods.
- 4.8 The Permittee shall prevent the surface runoff of wastewater, and precipitation runoff mixed with wastewater, from the land application site(s). The Permittee shall provide runoff collection and re-application systems as appropriate to prevent the discharge of surface runoff.

5. Facilities Operation

- 5.1 The Permittee shall at all times maintain in good working order and operate as efficiently as possible all facilities or systems of control installed or used to achieve compliance with the terms and conditions of this permit.

Proper operation and maintenance includes effective performance; adequate funding; adequate operator staffing and training; and, adequate laboratory and process controls, including appropriate quality assurance procedures.

- 5.2 The Permittee is responsible for insuring system reliability and shall install leak detection equipment and/or implement routine inspection and maintenance programs to prevent pipe line breaks and other associated equipment failures that may endanger human health, public drinking water supplies or the environment. The Permittee shall maintain a record of all inspections, maintenance, and tests conducted, and these records shall be made available to the MPCA upon request.
- 5.3 Maintenance of the treatment facility that results in impairment of treatment efficiency of the disposal system and/or degradation of water quality shall be scheduled as much as possible during non-critical water quality periods and shall be carried out in a manner approved by the MPCA.
- 5.4 Necessary in-plant control tests shall be conducted at a frequency adequate to ensure continuous efficient operation of the treatment facility.
- 5.5 The Permittee shall provide an adequate operating staff which is duly qualified under Minn. R. ch. 9400 and, if applicable, as determined by the MPCA pursuant to Minn. R. 7001.0150, to carry out the operation, maintenance and testing functions required to insure compliance with the conditions of this permit.

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Chapter 10. Industrial Spray Irrigation

6. General Requirements

- 6.1 Installation, calibration and maintenance records must be maintained by the company for all devices selected and shall be capable of recording flows with a maximum deviation of less than plus or minus ten percent from the true application rate throughout the range of expected discharge application volumes.
- 6.2 If a tank is used for storage prior to spray irrigation, the tank must be emptied of other materials, including fuel, process substances and utility system substances, before the stormwater is directed to the tank.
- 6.3 No runoff of wastewater is allowed. All tile line inlets shall be covered prior to spray events and for several days thereafter to prevent any wastewater from entering the tile inlets.
- 6.4 The Permittee shall immediately notify the duty officer and the Minnesota Pollution Control Agency if it is discovered that wastewater has entered a tile inlet.
- 6.5 The Permittee shall notify the Minnesota Department of Public Safety Duty Officer at (800) 422-0798 or (651) 649-5451 within one hour of discovering runoff of wastewater or wastewater mixed with rainwater or snowmelt from the site that may endanger human health, public drinking water supplies or the environment. The Permittee shall submit a written description of the corrective actions taken to the MPCA within five days of discovery of the incident.

7. Records

- 7.1 The Permittee shall maintain a daily record of the operations and observations of the irrigation system at the facility, which shall be available at the facility for review by MPCA staff.

At a minimum, daily operational records shall be maintained pertaining to flows, areas of irrigation, inches of wastewater applied, and nitrogen loading. Also, visual observations shall be performed to determine any ponding, runoff, tile line discharges, and crop conditions.

8. Compliance Responsibility

- 8.1 If the soil phosphorus intervention limit for a land application site is exceeded, the site shall not be used for land application by the Permittee until sample results show limits are met.
- 8.2 An exceedance of the salts intervention limit for a land application site requires the following actions:
 - 1) Resample the site within two days of receiving sample results.
 - 2) Evaluate the significance of the exceedance and the source or cause of the constituents exceeding the intervention limit.
 - 3) Evaluate the need for immediate corrective action to prevent pollutant concentrations from exceeding the intervention limits.
 - 4) Evaluate the need for changes in wastewater effluent monitoring, including but not limited to sampling frequencies, constituents, analyzed installation of additional monitoring points, and reduction of field loadings.
 - 5) Within thirty days after obtaining the resample results in which the intervention limit was exceeded, submit a written report, for the MPCA's approval describing the evaluations and conclusions, and schedule of actions taken or planned to eliminate exceedance of the intervention limit.

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Chapter 10. Industrial Spray Irrigation

8. Compliance Responsibility

8.3 If an intervention limit for SAR is exceeded at station WS001, the Permittee shall submit, for MPCA review and approval, a corrective action plan as a supplement to the Annual Report required by the Annual Report part of this chapter.

The plan shall include detailed information pertaining to:

- a. How salts in the wastewater can be reduced;
 - b. The impacts of the exceedance on soils, crop health/vigor, and ground-water quality; and,
 - c. Proposed changes in operation to mitigate any problems identified.
- 8.4 Nitrogen land application rate limits apply to the sum of all sources of nitrogen applied to a permitted application site.
- 8.5 If nitrogen is applied to a permitted land application site from other sources including commercial fertilizer, manure, silage, sewage or wastewater treatment solids and sludges, then these other nitrogen sources shall be included in the sum of nitrogen applied to determine compliance with application rate limits at that site.
- 8.6 The nitrogen application rate shall be calculated as the sum of the total annual mass Kjeldahl nitrogen and nitrate-plus-nitrite nitrogen applied to the site, divided by the acreage of the site.
- 8.7 If a limit for the Nitrogen Application Rate is exceeded, the Permittee shall submit a corrective action plan. The corrective action plan must include detailed information on how nitrogen loading will be managed both on a short and long term basis so that the limit for nitrogen loading is not exceeded and a detailed evaluation and summary of the following information:
- a. Ground water quality trends from monitoring wells for the spray field management area where the exceedance occurred.
 - b. An evaluation of nutrient loading from wastewater relative to crop uptake and yield for all sprayfield management areas over the last five (5) years.
 - c. Tile line discharge quality over the last five (5) years.
 - d. Other information that can assist in providing a more complete evaluation of the possible impacts the exceedance may have on the environment. Examples of this type of information may include soil nitrate concentrations, weather conditions, timing of applications, nitrogen mineralization or loss study results, and so forth.

The corrective plan must be submitted as part of the 'Annual Report' required by the Annual Report part of this chapter.

9. Annual Report

9.1 The Permittee shall Submit an Industrial Spray Irrigation Annual Report by February 1 of each year following permit issuance.

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Chapter 10. Industrial Spray Irrigation

9. Annual Report

9.2 The Industrial Spray Irrigation Annual Report must include the following information:

- a. A description of the treatment system, including any changes made during the year.
- b. A description of system operation during the past year, including the following:
 - i. Nutrient and hydraulic loading;
 - ii. Irrigation scheduling and intensity;
 - iii. Crop harvesting; and,
 - iv. Problems encountered and any remedial actions.
- c. A description of system maintenance during the past year, including the following:
 - i. Crop information; and,
 - ii. Irrigation equipment.
- d. A summarization of monitoring results obtained during the past year, including the following:
 - i. Ground water monitoring;
 - ii. Soils monitoring;
 - iii. Effluent monitoring; and,
 - iv. Crop monitoring information.
- e. An analysis of the information submitted, and recommendations for changes, including the following:
 - i. Analysis of the year's operation; and,
 - ii. Proposed changes for the coming year's operation.

10. Definitions

- 10.1 "Aquifer" means unconsolidated material or rock capable of producing water to supply a well.
- 10.2 "Groundwater" means water contained below the surface of the earth in the saturated zone including, without limitation, all waters whether under confined, unconfined, or perched conditions, in near-surface unconsolidated sediment or regolith, or in rock formations deeper underground.
- 10.3 "Industrial Spray Irrigation" means the act of supplying industrial wastewater for agricultural and horticultural purposes to land, crops, or plants by means of pipes, hoses, sprinklers, drippers, ditches, furrows, or other devices that are connected directly to a source of process waste water.
- 10.4 "Sodium Adsorption Ratio (SAR)" means a ratio of specific available cations in the soil solution which indicates if the accumulation of sodium in the soil exchange complex will lead to a degradation of the soil structure and thus a sharp reduction in infiltration and permeability rates. Concentrations are expressed in milliequivalents/liter (meq/l).
- 10.5 "Sprayfield" means the area of land that receives the actual application of wastewater. This area does not include buffer zones, setbacks or other land where waste water is not applied.
- 10.6 "Type V Certified Operator or Inspector" means a person certified according to Minn. R. ch. 7048 for land application. A Type V facility is any disposal facility that applies on the land any nonhazardous liquid waste from commercial, industrial, or agricultural operations.

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Chapter 11. Spray Irrigation/Soils

1. Sampling Location

- 1.1 Samples for stations LA301 (Zone 1 Irrigation Site), station LA302 (Zone 2 Irrigation Site) and station LA303 (Zone 3 Irrigation Site) shall be representative of the three respective sites.

2. Soil Samples

- 2.1 Soil samples shall be taken in the spring before the first irrigation and before the first application of commercial or other supplemental fertilizer for that year.
- 2.2 Soil samples shall be a composite of a mixture of 15 to 20 equally proportioned subsamples taken from a 0- to 8-inch core. At least one composite sample shall be collected for each 40 acres on the permitted land application sites.
- 2.3 The composite soil samples from each application site shall be monitored annually for texture and reported in USDA units.

3. Application Rates

- 3.1 Nitrogen and sodium land application rate limits apply to the sum of all sources of nitrogen or sodium applied to a permitted application site.
- 3.2 If nitrogen or sodium are applied to a permitted land application site from other sources including commercial fertilizer, manure, silage, sewage or wastewater treatment solids and sludges, then these other nitrogen or sodium sources shall be included in the sum of nitrogen or sodium applied to determine compliance with application rate limits at that site.
- 3.3 The nitrogen application rate shall be calculated as the sum of the total annual mass Kjeldahl nitrogen and nitrate-plus-nitrite nitrogen applied to the site, divided by the acreage of the site.

4. General Requirements

- 4.1 The crop must be harvested at least twice per year. The date(s) the crop is harvested must be reported.
- 4.2 The crops shall be monitored annually by the permittee as specific below:

Characteristics	Sample Type	Units
Yield	N/A	Tons/Acre
Crude Protein	Grab	Percent
Crop Survey*	Visual Estimate of stand	Percent of Stand

*If forage crops are grown, a crop survey must be conducted by a crop expert to determine the percent of all predominant varieties, percent broadleaves, and percent other grasses.

The Yield and Crude Protein shall be determined during cutting.

Chapter 12. Stormwater Management

1. Authorization

- 1.1 This permit does not authorize the construction or installation of pipeline facilities, or underground or above ground storage tanks.
- 1.2 If the Permittee reaches the intervention limit of 50,000 gallons per day or more stormwater discharge, the Permittee shall spray irrigate according to the requirements of this permit, or pump the excess stormwater into the ethanol process so that it does not discharge from the facility. This constitutes the Contingency Plan for excess stormwater, for example during very high runoff events.

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Chapter 12. Stormwater Management

2. Allowable Non-Stormwater Discharges

- 2.1 The following non-stormwater discharges are authorized by this permit provided that appropriate Best Management Practices (BMPs) are utilized to minimize erosion and the discharges of sediment where necessary:
- a. Emergency fire-fighting activities.
 - b. Fire hydrant and fire suppression system flushings.
 - c. Potable water line flushings.
 - d. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids.
 - e. Landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with manufacturer's instructions.
 - f. Pavement wash waters where no detergents are used and no spills or leaks of potential pollutants such as fertilizers, salts, or toxic and hazardous materials have occurred unless all spilled material has been removed.
 - g. Routine external building washdown that does not use detergents, solvents, or degreasers.
 - h. Uncontaminated groundwater or spring water.
 - i. Foundation or footing drains where flows are not contaminated.
 - j. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., piped cooling tower blowdown or drains).

3. Prohibited Discharges

- 3.1 The following discharges are not authorized by this permit:
- a. Non-stormwater discharges containing inks, paints, other hazardous or non-hazardous substances, etc. resulting from an on-site spill, including materials collected in drip pans.
 - b. Washwater from material handling and processing areas.
 - c. Washwater from drum, tank or container rinsing and cleaning.
- 3.2 This permit does not authorize the discharge or disposal of fuel "contact" wastewater from sources such as loading racks and sumps, of tank condensate, or of hydrostatic test or cleaning waters from piping and tanks.
- 3.3 No waste streams other than stormwater shall be discharged through outfall SD002.
- 3.4 The Permittee shall not discharge from outfall SD002 for at least four days after a runoff event.
- 3.5 This permit does not authorize the discharge of stormwater associated with an industrial activity if the pollutant loading in the waste stream does not meet the minimum secondary treatment limits for Carbonaceous Biological Oxygen Demand (5 day test) and/or Total Suspended Solids.

4. Water Quality Standards

- 4.1 The Permittee shall operate and maintain the facility and shall control runoff, including stormwater, from the facility to prevent the exceedance of water quality standards specified in Minnesota Rules, chs. 7050 and 7060.
- 4.2 The Permittee shall limit and control the use of materials at the facility that may cause exceedances of ground water standards specified in Minnesota Rules, ch. 7060. These materials include, but are not limited to, detergents and cleaning agents, solvents, chemical dust suppressants, lubricants, fuels, oils and fertilizers.

5. Stormwater Pollution Prevention Plan

- 5.1 The Permittee shall comply with the facility March 23, 2012, Stormwater Pollution Prevention Plan.

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Chapter 12. Stormwater Management

5. Stormwater Pollution Prevention Plan

5.2 The Permittee shall develop and implement a Stormwater Pollution Prevention Plan (Plan) to address the specific conditions at the industrial facility. The goal of the Plan is to eliminate or minimize contact of stormwater with significant materials that may result in pollution of the runoff. If contact cannot be eliminated or reduced, stormwater that has contacted significant material should be treated before it is discharged from the site.

5.3 At a minimum, the SWPPP must include:

- a. a description of appropriate Best Management Practices (BMPs) (including structural and non-structural) for protection of surface and groundwater quality at the facility and a schedule for implementing the practices;
- b. a drainage map for the entire facility;
- c. an inventory of exposed significant materials;
- d. an evaluation of the facility areas with exposure of significant materials to stormwater;
- e. an evaluation of all discharge conveyances from the site; a preventative maintenance program;
- f. a spill prevention and response procedure; and
- g. procedures to be followed by designated staff employed by the Permittee to implement the SWPPP.

5.4 Complete a drainage map. The map should indicate the following items at or adjacent to the facility:

- a. drainage areas and directions of stormwater runoff (indicated by arrows);
- b. discharge outfalls from the site (structures that carry stormwater runoff from the facility such as ditches or storm sewers);
- c. the name and location of waters of the state that receive facility stormwater runoff (if waters of the state are too distant from the facility to be indicated on the site map, indicate the name, direction and shortest distance to the lake, river, stream or wetland that receives runoff from your site);
- d. areas where significant materials are exposed to stormwater;
- e. locations of storm sewer inlets and an indication of which, if any, structures have floor drains or loading dock drains that are connected to storm sewers; and
- f. locations and types of Best Management Practices (BMPs) currently installed at the facility to reduce or eliminate pollutants to stormwater.

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Chapter 12. Stormwater Management

5. Stormwater Pollution Prevention Plan

- 5.5 Complete an inventory of exposed significant materials. Indicate the types of significant materials handled or stored at the site that may potentially contact stormwater. The following are examples of materials that, if exposed to stormwater, must be included in the inventory:
- a. raw materials, such as corn feedstock, fuels; solvents; petroleum products; detergents; plastic pellets; materials used in food processing or production; stockpiled sand, salt or coal;
 - b. by-products or intermediate products, such as wood dust, chips or bark; screened limestone, taconite or gravel by-product, recycled blacktop;
 - c. finished materials, such as ethanol;
 - d. waste products, such as ashes, sludge, solid and liquid wastes, slag, cleaning wastes, off-spec and unusable byproducts; boiler, cooling tower and filter wastes;
 - e. outdoor storage of salt, pellets, coal, drums and containers; access roads, rail cars and tracks; areas where the transfer of substances in bulk occurs; and areas where machinery operates;
 - f. hazardous substances designated under section 101(14) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA);
 - g. any chemical the facility is required to report under section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA).
- 5.6 Evaluate facility areas for exposure of significant materials to stormwater. In creating the inventory of exposed significant materials, the Permittee must, at a minimum, evaluate the following areas at the industrial site (as well as other areas where appropriate) to determine whether or not significant materials are exposed in these areas:
- a. vehicle and equipment maintenance, parking and storage areas including fueling and washing/cleaning areas, to determine if there is discolored soil in these areas as a result of fuel and lubricant leaks and spills;
 - b. liquid storage tanks and other bulk material stockpile areas;
 - c. loading and unloading areas;
 - d. outdoor manufacturing, processing or storage areas and industrial plant yards, to determine if there is discolored soil in these areas as a result of leaked or spilled solvents, fuels, or lubricants;
 - e. dust or particulate generating areas including dust collection devices that may release dust;
 - f. rooftops contaminated by industrial activity or operation of a pollution control device;
 - g. on-site waste disposal areas, such as waste ponds, dumpsters, solid waste storage or management areas; and
 - h. exposed (non-vegetated) soil areas where there is a potential for erosion to occur.
- 5.7 The SWPPP must describe measures to prevent or minimize contamination of the storm water runoff from fueling and fuel storage areas. The facility shall consider covering the fueling area, using spill and overflow protection and cleanup equipment, minimizing runoff of stormwater to the fueling area, using dry cleaning methods, collecting the storm water runoff and providing treatment or recycling or other equivalent measures.

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Chapter 12. Stormwater Management

5. Stormwater Pollution Prevention Plan

- 5.8 Basins constructed at the plant site for the purpose of collection of product spills, raw materials spills, or other wastes other than stormwater runoff, shall be constructed using synthetic liners or sealed concrete to eliminate any seepage from such basins.
- 5.9 Describe appropriate BMPs, including structural and non-structural BMPs, that will be used at the facility to minimize or eliminate pollution of stormwater at the site. The description must include an objective for each BMP, as well as a description of how to evaluate proper functioning of the BMP and any maintenance requirements of the BMP. BMPs should target significant materials and areas identified in this chapter. The following general categories of BMPs shall be considered and one or more shall be incorporated into the facility's Plan if significant materials are exposed to stormwater on-site:
- a. Source reduction: reduce or eliminate the significant materials that are exposed to stormwater. Materials management practices should be evaluated to determine whether inventories of exposed materials can be reduced or eliminated. This can include clean-up of equipment yards, periodic checking of dust control equipment to ensure minimal accumulation of dust in the area of control equipment, removal and treatment of petroleum contaminated soil, consolidation of materials from multiple areas into one area, and training employees regarding proper handling and disposal of materials. Significant materials may also be moved indoors or covered with a tarp or structure to eliminate contact with precipitation.
 - b. Diversion: divert stormwater drainage away from exposed significant materials through use of curbing, berms, sewers or other forms of drainage control or elevate exposed significant material above surrounding drainage.
 - c. Treatment: where contact of stormwater with significant materials is unavoidable, use treatment devices to reduce the concentration and amount of pollutants in the discharge. Such devices include oil/water separators, stormwater detention/retention ponds, and vegetative swales.
- 5.10 Evaluate all discharge conveyances from the site (storm sewers, pipes, tile lines, ditches, etc.) to determine if liquids other than stormwater are being discharged from these devices. This should be done during dry weather when stormwater discharge is not occurring. The evaluation should cover sewer inlets and floor drains to determine which inlets/drains are connected to sanitary sewer lines, storm sewer lines, or septic tanks/drainage fields; appropriate methods such as dye or smoke testing or video imaging should be used to determine the source of discharges.
- The Plan must certify that discharges from the site have been evaluated for the presence of non-stormwater discharges. The certification shall indicate the date of testing, location of testing, describe the method used to determine the source of discharges and the results of testing. Discharge of non-stormwater (such as sanitary sewer or floor drain connections to storm sewers) is not authorized by this permit; before such discharge may continue, authorization under an appropriate NPDES permit must be obtained.
- 5.11 Develop a preventive maintenance program. The program must require regular inspection and maintenance of stormwater management devices (e.g. cleaning oil/water separators and catch basins), as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants (e.g. hydraulic leaks, torn bag-house filters) to surface waters.
- 5.12 Develop a spill prevention and response procedure. In order to develop this procedure, Permittees should evaluate where spills have occurred and where they have the potential to occur. Determine drainage points for potential spill areas and develop appropriate spill prevention and containment measures, should a spill occur. Detailed procedures for cleaning-up spills shall be identified and made available to appropriate personnel. If your facility has any other spill contingency plan that satisfies the above requirements, that plan may be incorporated by reference into this Plan to satisfy this requirement.
- 5.13 Identify personnel responsible for managing and implementing the Plan as well as those responsible for the reporting requirements of this permit. This should include the facility contact person as indicated on the permit application. Identified personnel must be available at reasonable times of operation.

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Chapter 12. Stormwater Management

6. Spill Prevention and Response Procedure

- 6.1 The Permittee shall have developed and maintain a Spill, Prevention Control and Countermeasure (SPCC) Plan in conformance with and in compliance with the applicable conditions of 40 CFR Part 112 or Minnesota rules and regulations, whichever are more stringent and appropriate.
- 6.2 The SPCC Plan shall be a carefully thought-out plan, prepared in accordance with good engineering practices, and which has the full approval of management at a level with authority to commit the necessary resources.
- 6.3 All spilled product and other spilled wastes potentially subject to stormwater contact shall be immediately cleaned up and disposed of according to all applicable regulations or SPCC plans. Use of detergents, emulsifiers, or dispersants to clean up spilled product is prohibited except where necessary to comply with state or federal safety regulations (i.e., requirement for non-slippery work surface) except where the cleanup practice does not result in a discharges and does not leave residues exposed to future storm events. In all cases, initial cleanup shall be done by physical removal and chemical usage shall be minimized.

7. Employee Training Program

- 7.1 The Permittee must develop and implement an employee training program to inform appropriate personnel of the components and goals of the SWPPP. At a minimum, training must address:
 - a. spill/leak prevention and response;
 - b. good housekeeping;
 - c. petroleum product management;
 - d. process chemical management;
 - e. fueling procedures;
 - f. proper procedures for using fertilizer, herbicides, and pesticides;
 - g. erosion and sedimentation controls;
 - h. inspections;
 - i. preventative maintenance;
 - j. runoff management; and
 - k. materials management practices.

The SWPPP must identify periodic dates for such training as well as personnel responsible for managing and implementing the SWPPP and those responsible for the reporting requirements of this permit. This must include the facility contact person as indicated on the permit application. Identified personnel must be available at reasonable times of operation.

Guidance regarding employee training programs is available on the web at:
<http://www.pca.state.mn.us/index.php/water/water-types-and-programs/stormwater/industrial-stormwater/industrial-stormwater.html>.

8. Temporary Protection and Permanent Cover

- 8.1 The Permittee shall provide and maintain temporary protection or permanent cover for the exposed areas at the facility.
- 8.2 Temporary protection methods are used to prevent erosion on a short-term basis, such as the placement of mulching straw, wood fiber blankets, wood chips, erosion control netting, or temporary seeding.
- 8.3 Permanent cover or final stabilization methods are used to prevent erosion, such as the placement of rip rap, sodding, or permanent seeding or planting. Permanent seeding and planting must have a uniform perennial vegetation cover of at least 70 percent density to constitute final stabilization.

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Chapter 12. Stormwater Management

9. Sedimentation Basin Design and Construction

- 9.1 The Permittee is authorized to use designed industrial stormwater ponds/sedimentation basins for stormwater management. Stormwater ponds/sedimentation basins must be designed by a registered professional engineer and installed under the direct supervision of a registered professional engineer. If a new stormwater pond/sedimentation basin will be constructed, the Permittee must follow the appropriate MPCA guidance for the design and construction of the basin.
- 9.2 The basin shall provide at least 1800 cubic feet, per acre drained, of hydraulic storage volume below the top of the outlet riser pipe.
- 9.3 Inlet(s) and outlet(s) shall be designed to prevent short circuiting and the discharge of floating debris.
- 9.4 The inlet(s) shall be placed at an elevation at least above one-half of the basin design hydraulic storage volume.
- 9.5 The outlet(s) shall consist of a perforated riser pipe wrapped with filter fabric and covered with crushed gravel. The perforated riser pipe shall be designed to allow complete drawdown of the basin(s).
- 9.6 Permanent erosion control, such as rip rap, splash pads or gabions shall be installed at the outlet(s) to prevent downstream erosion.
- 9.7 The basins shall be designed to allow for regular removal of accumulated sediment by a backhoe or other suitable equipment.

10. Inspection and Maintenance

- 10.1 The Permittee must develop and implement an inspection schedule that includes a minimum of one facility inspection per calendar week. A total of six monthly inspections shall occur during runoff events, with at least one being performed during snow melt. Inspections must be conducted by appropriately trained personnel at the facility. The purpose of inspections is to: 1) determine whether structural and non-structural BMPs require maintenance or changes, and 2) evaluate the completeness and accuracy of the SWPPP.

Inspection results and documentation must remain on-site whenever Permittee staff are available on the site and must be available upon request. Inspections may be documented using an MPCA industrial stormwater site inspection form.

- 10.2 Inspections must be documented and must include the following information:

- a. inspection date and time;
- b. weather conditions;
- c. inspector name;
- d. findings; and
- e. a description of any necessary corrective actions and a schedule for corrective action completion.

A copy of all inspection documentation must be stored with the SWPPP, and available upon request.

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Chapter 12. Stormwater Management

10. Inspection and Maintenance

- 10.3 The following compliance items will be inspected, and documented where appropriate:
- a. evaluate the facility to determine that the Plan accurately reflects site conditions as described in this chapter, and document any inaccuracies;
 - b. evaluate the facility to determine whether new exposed materials have been added to the site since completion of the Plan, and document any new significant materials;
 - c. during the inspection conducted during the runoff event, observe the runoff to determine if it is discolored or otherwise visibly contaminated, and document observations; and,
 - d. determine if the non-structural and structural BMPs as indicated in the Plan are installed and functioning properly.
- 10.4 If the findings of a site inspection indicate that BMPs are not meeting the objectives as identified in this chapter, corrective actions must be initiated within 30 days and the BMP restored to full operation as soon as field conditions allow.
- 10.5 When the depth of sediment collected in the final sedimentation basin above the outfall reaches one-half of the riser height, or one-half of the basin design hydraulic storage volume, the Permittee shall drain the basin and remove the sediment within three days of discovery. No outflow from the sedimentation basin shall occur while sediment is being removed from that basin. The sediment removed from the basin shall be disposed of at a site which drains to sedimentation basin(s) at the facility.
- 10.6 Wet cake and modified wet cake that are spilled during loading shall be scraped back into the pad immediately. The Permittee shall inspect for spilled wet cake and perform necessary cleanup before loading the next vehicle.
- 10.7 DDGS shall be managed in enclosed structures so as to have no exposure to stormwater, and measures shall be in place to prevent DDGS from being released (including by wind and vehicle tracking) from these structures to areas where the DDGS may come into contact with stormwater.
- 10.8 The Permittee shall minimize vehicle tracking of gravel, soil or mud onto paved surfaces at the facility.
- 10.9 The Permittee shall remove tracked material from the road surface and return it to the facility within one (1) day of discovery so that the materials drain to sedimentation basin(s) at the facility.

11. Reporting

- 11.1 The Permittee shall Submit a Stormwater Annual Report by March 31 of each year following permit issuance.
- 11.2 Each Stormwater Annual Report shall cover, for the previous calendar year, at a minimum, the following information:
1. A summary of inspection dates, findings, and any BMP maintenance conducted by the Permittee during the course of the reporting year;
 2. A confirmation that the SWPPP accurately reflects facility conditions; and
 3. A list of all spills and leaks (as defined in Minn. Stat. ch. 115.061) that occurred at the facility during the reporting year.
- 11.3 The Permittee shall, upon request of the Agency, submit within a reasonable time the information and reports that are relevant to compliance with this Chapter, including the Plan, inspection reports, annual reports, original laboratory sheets from analyses conducted on the waste stream, and BMP plans and specifications.

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Chapter 12. Stormwater Management

12. Records

- 12.1 The Plan shall be retained for the duration of the permit. A copy of the Plan shall remain on the permitted site whenever Permittee staff are available on the site, and be available upon request. The Permittee shall maintain the following records for the period of permit coverage:
- a. dates of inspections;
 - b. findings of inspections;
 - c. corrective actions taken;
 - d. documentation of all changes to the Plan; and,
 - e. a copy of annual reports.

13. Notification

- 13.1 If the Permittee discharges stormwater into a municipal storm sewer, the Permittee shall notify the operator of the municipal storm sewer of the existence of this permit.

14. Definitions

- 14.1 "Non-stormwater discharge" means any discharge not comprised entirely of stormwater discharges authorized by a NPDES permit.
- 14.2 "Runoff" means any liquid that drains over land from any part of a facility.

Chapter 13. Total Facility Requirements

1. General Requirements

General Requirements

- 1.1 Incorporation by Reference. The following applicable federal and state laws are incorporated by reference in this permit, are applicable to the Permittee, and are enforceable parts of this permit: 40 CFR pts. 122.41, 122.42, 136, 403 and 503; Minn. R. pts. 7001, 7041, 7045, 7050, 7052, 7053, 7060, and 7080; and Minn. Stat. Sec. 115 and 116.
- 1.2 Permittee Responsibility. The Permittee shall perform the actions or conduct the activity authorized by the permit in compliance with the conditions of the permit and, if required, in accordance with the plans and specifications approved by the Agency. (Minn. R. 7001.0150, subp. 3, item E)
- 1.3 Toxic Discharges Prohibited. Whether or not this permit includes effluent limitations for toxic pollutants, the Permittee shall not discharge a toxic pollutant except according to Code of Federal Regulations, Title 40, sections 400 to 460 and Minnesota Rules 7050, 7052, 7053 and any other applicable MPCA rules. (Minn. R. 7001.1090, subp.1, item A)
- 1.4 Nuisance Conditions Prohibited. The Permittee's discharge shall not cause any nuisance conditions including, but not limited to: floating solids, scum and visible oil film, acutely toxic conditions to aquatic life, or other adverse impact on the receiving water. (Minn. R. 7050.0210 subp. 2)
- 1.5 Property Rights. This permit does not convey a property right or an exclusive privilege. (Minn. R. 7001.0150, subp. 3, item C)

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.6 Liability Exemption. In issuing this permit, the state and the MPCA assume no responsibility for damage to persons, property, or the environment caused by the activities of the Permittee in the conduct of its actions, including those activities authorized, directed, or undertaken under this permit. To the extent the state and the MPCA may be liable for the activities of its employees, that liability is explicitly limited to that provided in the Tort Claims Act. (Minn. R. 7001.0150, subp. 3, item O)
- 1.7 The MPCA's issuance of this permit does not obligate the MPCA to enforce local laws, rules, or plans beyond what is authorized by Minnesota Statutes. (Minn. R. 7001.0150, subp.3, item D)
- 1.8 Liabilities. The MPCA's issuance of this permit does not release the Permittee from any liability, penalty or duty imposed by Minnesota or federal statutes or rules or local ordinances, except the obligation to obtain the permit. (Minn. R. 7001.0150, subp.3, item A)
- 1.9 The issuance of this permit does not prevent the future adoption by the MPCA of pollution control rules, standards, or orders more stringent than those now in existence and does not prevent the enforcement of these rules, standards, or orders against the Permittee. (Minn. R. 7001.0150, subp.3, item B)
- 1.10 Severability. The provisions of this permit are severable and, if any provisions of this permit or the application of any provision of this permit to any circumstance are held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.
- 1.11 Compliance with Other Rules and Statutes. The Permittee shall comply with all applicable air quality, solid waste, and hazardous waste statutes and rules in the operation and maintenance of the facility.
- 1.12 Inspection and Entry. When authorized by Minn. Stat. Sec. 115.04; 115B.17, subd. 4; and 116.091, and upon presentation of proper credentials, the agency, or an authorized employee or agent of the agency, shall be allowed by the Permittee to enter at reasonable times upon the property of the Permittee to examine and copy books, papers, records, or memoranda pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit; and to conduct surveys and investigations, including sampling or monitoring, pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit. (Minn. R. 7001.0150, subp.3, item I)
- 1.13 Control Users. The Permittee shall regulate the users of its wastewater treatment facility so as to prevent the introduction of pollutants or materials that may result in the inhibition or disruption of the conveyance system, treatment facility or processes, or disposal system that would contribute to the violation of the conditions of this permit or any federal, state or local law or regulation.

Sampling

- 1.14 Representative Sampling. Samples and measurements required by this permit shall be conducted as specified in this permit and shall be representative of the discharge or monitored activity. (40 CFR 122.41 (j)(1))
- 1.15 Additional Sampling. If the Permittee monitors more frequently than required, the results and the frequency of monitoring shall be reported on the Discharge Monitoring Report (DMR) or another MPCA-approved form for that reporting period. (Minn. R. 7001.1090, subp. 1, item E)
- 1.16 Certified Laboratory. A laboratory certified by the Minnesota Department of Health shall conduct analyses required by this permit. Analyses of dissolved oxygen, pH, temperature, specific conductance, and total residual oxidants (chlorine, bromine) do not need to be completed by a certified laboratory but shall comply with manufacturers specifications for equipment calibration and use. (Minn. Stat. Sec. 144.97 through 144.98 and Minn. R. 4740.2010 and 4740.2050 through 4740.2120) (Minn. R. 4740.2010 and 4740.2050 through 2120)
- 1.17 Sample Preservation and Procedure. Sample preservation and test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and Minn. R. 7041.3200.

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.18 Equipment Calibration: Flow meters, pumps, flumes, lift stations or other flow monitoring equipment used for purposes of determining compliance with permit shall be checked and/or calibrated for accuracy at least twice annually. (Minn. R. 7001.0150, subp. 2, items B and C)
- 1.19 Maintain Records. The Permittee shall keep the records required by this permit for at least three years, including any calculations, original recordings from automatic monitoring instruments, and laboratory sheets. The Permittee shall extend these record retention periods upon request of the MPCA. The Permittee shall maintain records for each sample and measurement. The records shall include the following information (Minn. R. 7001.0150, subp. 2, item C):
- a. The exact place, date, and time of the sample or measurement;
 - b. The date of analysis;
 - c. The name of the person who performed the sample collection, measurement, analysis, or calculation; and
 - d. The analytical techniques, procedures and methods used; and
 - e. The results of the analysis.
- 1.20 Completing Reports. The Permittee shall submit the results of the required sampling and monitoring activities on the forms provided, specified, or approved by the MPCA. The information shall be recorded in the specified areas on those forms and in the units specified. (Minn. R. 7001.1090, subp. 1, item D; Minn. R. 7001.0150, subp. 2, item B)

Required forms may include:

DMR Supplemental Form

Individual values for each sample and measurement must be recorded on the DMR Supplemental Form which, if required, will be provided by the MPCA. DMR Supplemental Forms shall be submitted with the appropriate DMRs. You may design and use your own supplemental form; however it must be approved by the MPCA. Note: Required summary information **MUST** also be recorded on the DMR. Summary information that is submitted **ONLY** on the DMR Supplemental Form does not comply with the reporting requirements.

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Chapter 13. Total Facility Requirements

1. General Requirements

1.21 Submitting Reports. DMRs and Supplementals shall be submitted to:

MPCA
Attn: Discharge Monitoring Reports
520 Lafayette Road North
St. Paul, Minnesota 55155-4194.

DMRs, DMR supplemental forms and related attachments may be electronically submitted via the MPCA Online Services Portal after authorization is approved. When electronically submitted, the paper DMR submittal requirement is waived.

DMRs and DMR Supplemental Forms shall be postmarked or electronically submitted by the 21st day of the month following the sampling period or as otherwise specified in this permit. Electronic DMR submittal must be complete on or before 11:59 PM of the 21st day of the month following the sampling period or as otherwise specified in this permit. A DMR shall be submitted for each required station even if no discharge occurred during the reporting period. (Minn. R. 7001.0150, subps. 2.B and 3.H)

Other reports required by this permit shall be postmarked by the date specified in the permit to:

MPCA
Attn: WQ Submittals Center
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

1.22 Incomplete or Incorrect Reports. The Permittee shall immediately submit an amended report or DMR to the MPCA upon discovery by the Permittee or notification by the MPCA that it has submitted an incomplete or incorrect report or DMR. The amended report or DMR shall contain the missing or corrected data along with a cover letter explaining the circumstances of the incomplete or incorrect report. (Minn. R. 7001.0150 subp. 3, item G)

1.23 Required Signatures. All DMRs, forms, reports, and other documents submitted to the MPCA shall be signed by the Permittee or the duly authorized representative of the Permittee. Minn. R. 7001.0150, subp. 2, item D. The person or persons that sign the DMRs, forms, reports or other documents must certify that he or she understands and complies with the certification requirements of Minn. R. 7001.0070 and 7001.0540, including the penalties for submitting false information. Technical documents, such as design drawings and specifications and engineering studies required to be submitted as part of a permit application or by permit conditions, must be certified by a registered professional engineer. (Minn. R. 7001.0540)

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.24 Detection Level. The Permittee shall report monitoring results below the reporting limit (RL) of a particular instrument as "<" the value of the RL. For example, if an instrument has a RL of 0.1 mg/L and a parameter is not detected at a value of 0.1 mg/L or greater, the concentration shall be reported as "<0.1 mg/L." "Non-detected," "undetected," "below detection limit," and "zero" are unacceptable reporting results, and are permit reporting violations. (Minn. R. 7001.0150, subp. 2, item B)

Where sample values are less than the level of detection and the permit requires reporting of an average, the Permittee shall calculate the average as follows:

- a. If one or more values are greater than the level of detection, substitute zero for all nondetectable values to use in the average calculation.
 - b. If all values are below the level of detection, report the averages as "<" the corresponding level of detection.
 - c. Where one or more sample values are less than the level of detection, and the permit requires reporting of a mass, usually expressed as kg/day, the Permittee shall substitute zero for all nondetectable values. (Minn. R. 7001.0150, subp. 2, item B)
- 1.25 Records. The Permittee shall, when requested by the Agency, submit within a reasonable time the information and reports that are relevant to the control of pollution regarding the construction, modification, or operation of the facility covered by the permit or regarding the conduct of the activity covered by the permit. (Minn. R. 7001.0150, subp. 3, item H)
- 1.26 Confidential Information. Except for data determined to be confidential according to Minn. Stat. Sec. 116.075, subd. 2, all reports required by this permit shall be available for public inspection. Effluent data shall not be considered confidential. To request the Agency maintain data as confidential, the Permittee must follow Minn. R. 7000.1300.

Noncompliance and Enforcement

- 1.27 Subject to Enforcement Action and Penalties. Noncompliance with a term or condition of this permit subjects the Permittee to penalties provided by federal and state law set forth in section 309 of the Clean Water Act; United States Code, title 33, section 1319, as amended; and in Minn. Stat. Sec. 115.071 and 116.072, including monetary penalties, imprisonment, or both. (Minn. R. 7001.1090, subp. 1, item B)
- 1.28 Criminal Activity. The Permittee may not knowingly make a false statement, representation, or certification in a record or other document submitted to the Agency. A person who falsifies a report or document submitted to the Agency, or tampers with, or knowingly renders inaccurate a monitoring device or method required to be maintained under this permit is subject to criminal and civil penalties provided by federal and state law. (Minn. R. 7001.0150, subp.3, item G., 7001.1090, subps. 1, items G and H and Minn. Stat. Sec. 609.671)
- 1.29 Noncompliance Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (40 CFR 122.41(c))

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.30 Effluent Violations. If sampling by the Permittee indicates a violation of any discharge limitation specified in this permit, the Permittee shall immediately make every effort to verify the violation by collecting additional samples, if appropriate, investigate the cause of the violation, and take action to prevent future violations. If the permittee discovers that noncompliance with a condition of the permit has occurred which could endanger human health, public drinking water supplies, or the environment, the Permittee shall within 24 hours of the discovery of the noncompliance, orally notify the commissioner and submit a written description of the noncompliance within 5 days of the discovery. The written description shall include items a. through e., as listed below. If the Permittee discovers other non-compliance that does not explicitly endanger human health, public drinking water supplies, or the environment, the non-compliance shall be reported during the next reporting period to the MPCA with its Discharge Monitoring Report (DMR). If no DMR is required within 30 days, the Permittee shall submit a written report within 30 days of the discovery of the noncompliance. This description shall include the following information:
- a. a description of the event including volume, duration, monitoring results and receiving waters;
 - b. the cause of the event;
 - c. the steps taken to reduce, eliminate and prevent reoccurrence of the event;
 - d. the exact dates and times of the event; and
 - e. steps taken to reduce any adverse impact resulting from the event. (Minn. R. 7001.0150, subp. 3k)
- 1.31 Unauthorized Releases of Wastewater Prohibited. Except for conditions specifically described in Minn. R. 7001.1090, subp. 1, items J and K, all unauthorized bypasses, overflows, discharges, spills, or other releases of wastewater or materials to the environment, whether intentional or not, are prohibited. However, the MPCA will consider the Permittee's compliance with permit requirements, frequency of release, quantity, type, location, and other relevant factors when determining appropriate action. (40 CFR 122.41 and Minn. Stat. Sec 115.061)

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Chapter 13. Total Facility Requirements

1. General Requirements

1.32 Discovery of a release. Upon discovery of a release, the Permittee shall:

- a. Take all reasonable steps to immediately end the release.
- b. Notify the Minnesota Department of Public Safety Duty Officer at 1(800)422-0798 or (651)649-5451 (metro area) immediately upon discovery of the release. You may contact the MPCA during business hours at 1(800)657-3864 or (651)296-6300 (metro area).
- c. Recover as rapidly and as thoroughly as possible all substances and materials released or immediately take other action as may be reasonably possible to minimize or abate pollution to waters of the state or potential impacts to human health caused thereby. If the released materials or substances cannot be immediately or completely recovered, the Permittee shall contact the MPCA. If directed by the MPCA, the Permittee shall consult with other local, state or federal agencies (such as the Minnesota Department of Natural Resources and/or the Wetland Conservation Act authority) for implementation of additional clean-up or remediation activities in wetland or other sensitive areas.
- d. Collect representative samples of the release. The Permittee shall sample the release for parameters of concern immediately following discovery of the release. The Permittee may contact the MPCA during business hours to discuss the sampling parameters and protocol. In addition, Fecal Coliform Bacteria samples shall be collected where it is determined by the Permittee that the release contains or may contain sewage. If the release cannot be immediately stopped, the Permittee shall consult with MPCA regarding additional sampling requirements. Samples shall be collected at least, but not limited to, two times per week for as long as the release continues.
- e. Submit the sampling results as directed by the MPCA. At a minimum, the results shall be submitted to the MPCA with the next DMR.

1.33 Upset Defense. In the event of temporary noncompliance by the Permittee with an applicable effluent limitation resulting from an upset at the Permittee's facility due to factors beyond the control of the Permittee, the Permittee has an affirmative defense to an enforcement action brought by the Agency as a result of the noncompliance if the Permittee demonstrates by a preponderance of competent evidence:

- a. The specific cause of the upset;
- b. That the upset was unintentional;
- c. That the upset resulted from factors beyond the reasonable control of the Permittee and did not result from operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or increases in production which are beyond the design capability of the treatment facilities;
- d. That at the time of the upset the facility was being properly operated;
- e. That the Permittee properly notified the Commissioner of the upset in accordance with Minn. R. 7001.1090, subp. 1, item I; and
- f. That the Permittee implemented the remedial measures required by Minn. R. 7001.0150, subp. 3, item J.

Operation and Maintenance

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.34 The Permittee shall at all times properly operate and maintain the facilities and systems of treatment and control, and the appurtenances related to them which are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. The Permittee shall install and maintain appropriate backup or auxiliary facilities if they are necessary to achieve compliance with the conditions of the permit and, for all permits other than hazardous waste facility permits, if these backup or auxiliary facilities are technically and economically feasible Minn. R. 7001.0150. subp. 3, item F.
- 1.35 In the event of a reduction or loss of effective treatment of wastewater at the facility, the Permittee shall control production or curtail its discharges to the extent necessary to maintain compliance with the terms and conditions of this permit. The Permittee shall continue this control or curtailment until the wastewater treatment facility has been restored or until an alternative method of treatment is provided. (Minn. R. 7001.1090, subp. 1, item C)
- 1.36 Solids Management. The Permittee shall properly store, transport, and dispose of biosolids, septage, sediments, residual solids, filter backwash, screenings, oil, grease, and other substances so that pollutants do not enter surface waters or ground waters of the state. Solids should be disposed of in accordance with local, state and federal requirements. (40 CFR 503 and Minn. R. 7041 and applicable federal and state solid waste rules)
- 1.37 Scheduled Maintenance. The Permittee shall schedule maintenance of the treatment works during non-critical water quality periods to prevent degradation of water quality, except where emergency maintenance is required to prevent a condition that would be detrimental to water quality or human health. (Minn. R. 7001.0150. subp. 3, item F and Minn. R. 7001.0150. subp. 2, item B)
- 1.38 Control Tests. In-plant control tests shall be conducted at a frequency adequate to ensure compliance with the conditions of this permit. (Minn. R. 7001.0150. subp. 3, item F and Minn. R. 7001.0150. subp. 2, item B)

Changes to the Facility or Permit

- 1.39 Permit Modifications. Except as provided under Minnesota Statutes, section 115.07, subdivisions 1 and 3, no person required by statute or rule to obtain a permit may construct, install, modify, or operate the facility to be permitted, nor shall a person commence an activity for which a permit is required by statute or rule until the agency has issued a written permit for the facility or activity. (Minn. R. 7001.0030)

Permittees that propose to make a change to the facility or discharge that requires a permit modification must follow Minn. R. 7001.0190. If the Permittee cannot determine whether a permit modification is needed, the Permittee must contact the MPCA prior to any action. It is recommended that the application for permit modification be submitted to the MPCA at least 180 days prior to the planned change.

- 1.40 Water quality monitoring for pH and specific conductivity shall be conducted in the field, within one hour of sample collection.

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.41 The Permittee shall obtain authorization under this permit for adequate wastewater treatment capability before a production capacity expansion that would result in the generation of increased wastewater or pollutant levels.

The following changes may require a permit modification, and shall be proposed to the MPCA before implementation:

- a. Proposed changes to the permit "Permitted Facility Description," including an increase in production capacity, the addition of additional wastewater pond or spray irrigation acreage, and the increased use or new use of a chemical additive.
 - b. Changes in the characteristics, concentrations or frequency of the wastewater flow. These changes may include: an increase in design discharge flow greater than 200,000 gallons/day; an increase in the mass loading discharge of a toxic pollutant that is likely to increase the concentration of the pollutant in the receiving water by more than one percent over the baseline receiving water quality; significant rerouting of wastewater for land disposal; or significant changes in the levels of indicator characteristics.
 - c. Changes in industrial byproducts or residual solids use and disposal practices.
- 1.42 Construction. Construction may begin at the Permittee's own risk once the Permittee submits plans and specifications to the MPCA unless:
- a. the action taken is prohibited by federal law or regulation;
 - b. the Permittee is a municipality constructing a wastewater system with a design flow of 0.200 million gallons per day or less;
 - c. the action taken is subject to environmental review under chapter 116D, and prohibited from commencing construction until that process is completed;
 - d. the action taken is subject to a grant or loan agreement under chapter 446A;
 - e. the action taken requires a construction storm water permit under rules of the agency; or
 - f. the action taken requires a subsurface sewage treatment system permit under rules of the agency.

In the cases specified in a. through f. above, no construction shall begin until the Permittee receives written approval of plans and specifications from the MPCA.

In all cases, the Permittee is prohibited from operating the system or discharging pollutants into the waters of the state until a written permit for the discharge is granted by MPCA and until plans and specifications for the disposal system have been approved, unless the MPCA waives the submission of plans and specifications. (Minn. Stat. 115.07, subd. 1 and 3)

- 1.43 Plans, specifications and MPCA approval are not necessary when maintenance dictates the need for installation of new equipment, provided the equipment is the same design size and has the same design intent. For instance, a broken pipe, lift station pump, aerator, or blower can be replaced with the same design-sized equipment without MPCA approval.

If the proposed construction is not expressly authorized by this permit, it may require a permit modification. If the construction project requires an Environmental Assessment Worksheet under Minn. R. 4410, no construction shall begin until a negative declaration is issued and all approvals are received or implemented.

- 1.44 Report Changes. The Permittee shall give advance notice as soon as possible to the MPCA of any substantial changes in operational procedures, activities that may alter the nature or frequency of the discharge, and/or material factors that may affect compliance with the conditions of this permit. (Minn. R. 7001.0150, subp. 3, item M)

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.45 This permit authorizes two separate sets of chemical additives, outlined in the Facility Description. At any given time, only one set of these additives shall be used. The Permittee shall maintain a daily record of the additives used.
- 1.46 Chemical Additives. The Permittee shall receive prior written approval from the MPCA before increasing the use of a chemical additive authorized by this permit, or using a chemical additive not authorized by this permit, in quantities or concentrations that have the potential to change the characteristics, nature and/or quality of the discharge.

The Permittee shall request approval for an increased or new use of a chemical additive at least 60 days, or as soon as possible, before the proposed increased or new use.

This written request shall include at least the following information for the proposed additive:

- a. The process for which the additive will be used;
 - b. Material Safety Data Sheet (MSDS) which shall include aquatic toxicity, human health, and environmental fate information for the proposed additive. The aquatic toxicity information shall include at minimum the results of: a) a 48-hour LC50 or EC50 acute study for a North American freshwater planktonic crustacean (either Ceriodaphnia or Daphnia sp.) and b) a 96-hour LC50 acute study for rainbow trout, bluegill or fathead minnow or another North American freshwater aquatic species other than a planktonic crustacean;
 - c. A complete product use and instruction label;
 - d. The commercial and chemical names and Chemical Abstract Survey (CAS) number for all ingredients in the additive (If the MSDS does not include information on chemical composition, including percentages for each ingredient totaling to 100%, the Permittee shall contact the supplier to have this information provided); and
 - e. The proposed method of application, application frequency, concentration, and daily average and maximum rates of use. (Minn. R. 7001.0170)
- 1.47 Upon review of the information submitted regarding the proposed chemical additive, the MPCA may require additional information be submitted for consideration. This permit may be modified to restrict the use or discharge of a chemical additive and include additional influent and effluent monitoring requirements.
- Approval for the use of an additive shall not justify the exceedance of any effluent limitation nor shall it be used as a defense against pollutant levels in the discharge causing or contributing to the violation of a water quality standard.
- 1.48 MPCA Initiated Permit Modification, Suspension, or Revocation. The MPCA may modify or revoke and reissue this permit pursuant to Minn. R. 7001.0170. The MPCA may revoke without reissuance this permit pursuant to Minn. R. 7001.0180.
- 1.49 TMDL Impacts. Facilities that discharge to an impaired surface water, watershed or drainage basin may be required to comply with additional permits or permit requirements, including additional restriction or relaxation of limits and monitoring as authorized by the CWA 303(d)(4)(A) and 40 CFR 122.44.1.2.i., necessary to ensure consistency with the assumptions and requirements of any applicable US EPA approved wasteload allocations resulting from Total Maximum Daily Load (TMDL) studies.
- 1.50 Permit Transfer. The permit is not transferable to any person without the express written approval of the Agency after compliance with the requirements of Minn. R. 7001.0190. A person to whom the permit has been transferred shall comply with the conditions of the permit. (Minn. R., 7001.0150, subp. 3, item N)

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Chapter 13. Total Facility Requirements

1. General Requirements

- 1.51 Facility Closure. The Permittee is responsible for closure and post-closure care of the facility. The Permittee shall notify the MPCA of a significant reduction or cessation of the activities described in this permit at least 180 days before the reduction or cessation. The MPCA may require the Permittee to provide to the MPCA a facility Closure Plan for approval.

Facility closure that could result in a potential long-term water quality concern, such as the ongoing discharge of wastewater to surface or ground water, may require a permit modification or reissuance.

The MPCA may require the Permittee to establish and maintain financial assurance to ensure performance of certain obligations under this permit, including closure, post-closure care and remedial action at the facility. If financial assurance is required, the amount and type of financial assurance, and proposed modifications to previously MPCA-approved financial assurance, shall be approved by the MPCA. (Minn. Stat. Sec. 116.07, subd. 4)

- 1.52 Permit Reissuance. If the Permittee desires to continue permit coverage beyond the date of permit expiration, the Permittee shall submit an application for reissuance at least 180 days before permit expiration. If the Permittee does not intend to continue the activities authorized by this permit after the expiration date of this permit, the Permittee shall notify the MPCA in writing at least 180 days before permit expiration.

If the Permittee has submitted a timely application for permit reissuance, the Permittee may continue to conduct the activities authorized by this permit, in compliance with the requirements of this permit, until the MPCA takes final action on the application, unless the MPCA determines any of the following (Minn. R. 7001.0040 and 7001.0160):

- a. The Permittee is not in substantial compliance with the requirements of this permit, or with a stipulation agreement or compliance schedule designed to bring the Permittee into compliance with this permit;
- b. The MPCA, as a result of an action or failure to act by the Permittee, has been unable to take final action on the application on or before the expiration date of the permit;
- c. The Permittee has submitted an application with major deficiencies or has failed to properly supplement the application in a timely manner after being informed of deficiencies.