

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0126713
Owner:	Liberty Power Corporation
Address:	354 Davis Road, Oakville, ON L6J2X1
Continuing Authority:	The Empire District Electric Company
Address:	P.O. Box 127, Joplin, MO 64802
Facility Name:	State Line Combined Cycle Power Plant
Facility Address:	2299 S. State Line Ave., Joplin, MO 64804
Legal Description:	See following page(s)
UTM Coordinates:	See following page(s)
Receiving Stream:	See following page(s)
First Classified Stream and ID:	See following page(s)
USGS Basin & Sub-watershed No.:	See following page(s)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

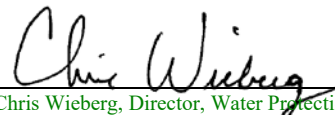
Power generation for sale; SIC# 4911; NAICS# 221112

This permit authorizes only wastewater and stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Sections 640.013, 621.250, and 644.051.6 of the Law.

<u>September 1, 2018</u>	<u>August 1, 2019</u>
Effective Date	Modification Date

<u>March 31, 2023</u>
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #001 – Power Plant – SIC# 4911; NAICS# 221112

Discharge of the miscellaneous steam cycle drains, chemical waste pump, demineralization/reverse osmosis reject water (new 2019 mod), cooling tower blowdown, steam cycle blowdown & quench, Unit 2-3 transformer containment and cooling tower (CT) drains, and stormwater runoff. Treatment: oil water separator, neutralization, chlorination/de-chlorination.

Legal Description: NE ¼, NW ¼, Sec 14, T27N, R34W Jasper County
UTM Coordinates: X = 356671, Y = 4103635
Receiving Stream: Short Creek
First Classified Stream and ID: KS Short Creek (P) (Losing stream) 303(d)
USGS Basin & Sub-watershed No.: Short Creek – Spring River (11070207-0904)
Design Flow: 1.307 MGD
Average Flow: 0.218 MGD

OUTFALL #002 – Power Plant – SIC# 4911; NAICS# 221112

Southern stormwater runoff. Treatment: oil water separator, settling pond.

Legal Description: NW ¼, SW ¼, Sec 14, T27N, R34W Jasper County
UTM Coordinates: X = 356484, Y = 4103151
Receiving Stream: Tributary to Short Creek
First Classified Stream and ID: Short Creek (P) (Losing stream) 303(d) in KS
USGS Basin & Sub-watershed No.: Short Creek – Spring River (11070207-0904)
Design flow: 7.077 MGD
Average Flow: 0.099 MGD

OUTFALL #003 – Power Plant – SIC# 4911; NAICS# 221112

Northern stormwater runoff. Treatment: settling.

Legal Description: NW ¼, NW ¼, Sec 14, T27N, R34W Jasper County
UTM Coordinates: X=356306, Y= 4103641
Receiving Stream: Tributary to Short Creek
First Classified Stream and ID: Short Creek (P) (Losing stream) 303(d) in KS
USGS Basin & Sub-watershed No.: Short Creek – Spring River (11070207-0904)
Design Flow: 8.455 MGD
Actual Flow: dependent upon precipitation

OUTFALL #004 – Power Plant – SIC# 4911; NAICS# 221112

Discharge from Emergency Cooling Water Storage. No treatment.

Legal Description: NW ¼, NW ¼, Sec 23, T27N, R34W Newton County
UTM Coordinates: X = 356374, Y = 4102280
Receiving Stream: Tributary to 8-20-13 MUDD V1.0
First Classified Stream and ID: Short Creek (P) (Losing stream) 303(d) in KS
USGS Basin & Sub-watershed No.: Short Creek – Spring River (11070207-0904)
Design Flow: 7.4 MGD

PERMITTED FEATURE CT1 (New) – Power Plant – SIC# 4911; NAICS# 221112

Cooling tower blowdown monitoring point; exits through outfall #001.

Legal Description: NW ¼, NW ¼, Sec 14, T27N, R34W Jasper County
UTM Coordinates: X=356676, Y= 4103529

FEATURE SM1 (Moved) – Downstream Stream Monitoring Point

In-stream monitoring for temperature: moved from old Highway 66 Bridge in Kansas to edge of facility property at 20th street and state line road.

Legal Description: NW ¼, SW ¼, Sec 14, T27N, R34W, Cherokee County, KS
UTM Coordinates: X = 356204, Y = 4104001
Stream: 8-20-13 MUDD V1.0
USGS Basin & Sub-watershed No.: Short Creek – Spring River (11070207-0904)

Domestic waste goes to Galena, KS Wastewater Treatment Plant (KS0048135)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #001 <i>main outfall</i>	TABLE A-1 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on September 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	once/day	24 hr. total
Temperature	°F	109.5		94.6	once/day	measured
CONVENTIONAL						
Chlorine/Bromine, Total Residual Φ	µg/L	17 (ML130)		8 (ML130)	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
pH ^Ω	SU	6.5 to 9.0		6.5 to 9.0	once/month	grab
Total Suspended Solids	mg/L	100		30	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2018</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
NUTRIENTS						
Nitrogen, Total (TN)	mg/L	*		*	once/quarter ◇	grab
Phosphorus, Total (TP)	mg/L	*		*	once/quarter ◇	grab
OTHER						
Chloride	mg/L	*		*	once/quarter ◇	grab
Sulfate	mg/L	*		*	once/quarter ◇	grab
Chloride Plus Sulfate	mg/L	*		*	once/quarter ◇	grab
Fluoride	mg/L	*		*	once/quarter ◇	grab
Surfactants	mg/L	*		*	once/quarter ◇	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2019</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Whole Effluent Toxicity, Chronic See Special Condition #1	TU _c	*			once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>YEARLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2019</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #CT1 cooling tower blowdown	TABLE A-2 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on September 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL					
Flow	MGD	*	*	once/month	24 hour total
CONVENTIONAL					
Chlorine/Bromine Free Available Φ	μg/L	500	200	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2018</u> .					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #CT1 <i>cooling tower blowdown</i>		TABLE A-3 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS			
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on September 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
126 PRIORITY POLLUTANTS					
(001) Acenaphthene	µg/L	☐	-	once/year	grab
(002) Acrolein	µg/L	☐	-	once/year	grab
(003) Acrylonitrile	µg/L	☐	-	once/year	grab
(004) Benzene	µg/L	☐	-	once/year	grab
(005) Benzidine	µg/L	☐	-	once/year	grab
(006) Carbon tetrachloride (tetrachnolomethane)	µg/L	☐	-	once/year	grab
(007) Chlorobenzene	µg/L	☐	-	once/year	grab
(008) 1,2,4-trichlorobenzene	µg/L	☐	-	once/year	grab
(009) Hexachlorobenzene	µg/L	☐	-	once/year	grab
(010) 1,2-dichloroethane	µg/L	☐	-	once/year	grab
(011) 1,1,1-trichloroethane	µg/L	☐	-	once/year	grab
(012) Hexachloroethane	µg/L	☐	-	once/year	grab
(013) 1,1-dichloroethane	µg/L	☐	-	once/year	grab
(014) 1,1,2-trichloroethane	µg/L	☐	-	once/year	grab
(015) 1,1,2,2,-tetrachloroethane	µg/L	☐	-	once/year	grab
(016) Chloroethane	µg/L	☐	-	once/year	grab
(018) Bis(2-chloroethyl) ether	µg/L	☐	-	once/year	grab
(019) 2-chloroethyl vinyl ether (mixed)	µg/L	☐	-	once/year	grab
(020) 2-chloronaphthalene	µg/L	☐	-	once/year	grab
(021) 2,4,6-trichlorophenol	µg/L	☐	-	once/year	grab
(022) Parachlorometa cresol	µg/L	☐	-	once/year	grab
(023) Chloroform (trichloromethane)	µg/L	☐	-	once/year	grab
(024) 2-chlorophenol	µg/L	☐	-	once/year	grab
(025) 1,2-dichlorobenzene	µg/L	☐	-	once/year	grab
(026) 1,3-dichlorobenzene	µg/L	☐	-	once/year	grab
(027) 1,4-dichlorobenzene	µg/L	☐	-	once/year	grab
(028) 3,3-dichlorobenzidine	µg/L	☐	-	once/year	grab
(029) 1,1-dichloroethylene	µg/L	☐	-	once/year	grab
(030) 1,2-trans-dichloroethylene	µg/L	☐	-	once/year	grab
(031) 2,4-dichlorophenol	µg/L	☐	-	once/year	grab
(032) 1,2-dichloropropane	µg/L	☐	-	once/year	grab
(033) 1,2-dichloropropylene (1,2-dichloropropene)	µg/L	☐	-	once/year	grab
(034) 2,4-dimethylphenol	µg/L	☐	-	once/year	grab
(035) 2,4-dinitrotoluene	µg/L	☐	-	once/year	grab
(036) 2,6-dinitrotoluene	µg/L	☐	-	once/year	grab
(037) 1,2-diphenylhydrazine	µg/L	☐	-	once/year	grab
(038) Ethylbenzene	µg/L	☐	-	once/year	grab
(039) Fluoranthene	µg/L	☐	-	once/year	grab
(040) 4-chlorophenyl phenyl ether	µg/L	☐	-	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #CT1 cooling tower blowdown	TABLE A-4 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on September 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
126 PRIORITY POLLUTANTS					
(041) 4-bromophenyl phenyl ether	µg/L	☐	-	once/year	grab
(042) Bis(2-chloroisopropyl) ether	µg/L	☐	-	once/year	grab
(043) Bis(2-chloroethoxy) methane	µg/L	☐	-	once/year	grab
(044) Methylene chloride (dichloromethane)	µg/L	☐	-	once/year	grab
(045) Methyl chloride (chloromethane)	µg/L	☐	-	once/year	grab
(046) Methyl bromide (bromomethane)	µg/L	☐	-	once/year	grab
(047) Bromoform (tribromomethane)	µg/L	☐	-	once/year	grab
(048) Dichlorobromomethane	µg/L	☐	-	once/year	grab
(051) Chlorodibromomethane	µg/L	☐	-	once/year	grab
(052) Hexachlorobutadiene	µg/L	☐	-	once/year	grab
(053) Hexachlorocyclopentadiene	µg/L	☐	-	once/year	grab
(054) Isophorone	µg/L	☐	-	once/year	grab
(055) Naphthalene	µg/L	☐	-	once/year	grab
(056) Nitrobenzene	µg/L	☐	-	once/year	grab
(057) 2-nitrophenol	µg/L	☐	-	once/year	grab
(058) 4-nitrophenol	µg/L	☐	-	once/year	grab
(059) 2,4-dinitrophenol	µg/L	☐	-	once/year	grab
(060) 4,6-dinitro-o-cresol	µg/L	☐	-	once/year	grab
(061) N-nitrosodimethylamine	µg/L	☐	-	once/year	grab
(062) N-nitrosodiphenylamine	µg/L	☐	-	once/year	grab
(063) N-nitrosodi-n-propylamine	µg/L	☐	-	once/year	grab
(064) Pentachlorophenol	µg/L	☐	-	once/year	grab
(065) Phenol	µg/L	☐	-	once/year	grab
(066) Bis(2-ethylhexyl) phthalate	µg/L	☐	-	once/year	grab
(067) Butyl benzyl phthalate	µg/L	☐	-	once/year	grab
(068) Di-N-Butyl Phthalate	µg/L	☐	-	once/year	grab
(069) Di-n-octyl phthalate	µg/L	☐	-	once/year	grab
(070) Diethyl Phthalate	µg/L	☐	-	once/year	grab
(071) Dimethyl phthalate	µg/L	☐	-	once/year	grab
(072) 1,2-benzanthracene (benzo(a) anthracene)	µg/L	☐	-	once/year	grab
(073) Benzo(a)pyrene (3,4-benzo-pyrene)	µg/L	☐	-	once/year	grab
(074) 3,4-benzofluoranthene (benzo(b) fluoranthene)	µg/L	☐	-	once/year	grab
(075) 11,12-benzofluoranthene (benzo(k) fluoranthene)	µg/L	☐	-	once/year	grab
(076) Chrysene	µg/L	☐	-	once/year	grab
(077) Acenaphthylene	µg/L	☐	-	once/year	grab
(078) Anthracene	µg/L	☐	-	once/year	grab
(079) 1,12-benzoperylene (benzo(ghi) perylene)	µg/L	☐	-	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #CT1 cooling tower blowdown	TABLE A-5 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on September 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
126 PRIORITY POLLUTANTS					
(080) Fluorene	µg/L	☐	-	once/year	grab
(081) Phenanthrene	µg/L	☐	-	once/year	grab
(082) 1,2,5,6-dibenzanthracene (dibenzo(a,h)anthracene)	µg/L	☐	-	once/year	grab
(083) Indeno (1,2,3-cd) pyrene (2,3-o-phenylene pyrene)	µg/L	☐	-	once/year	grab
(084) Pyrene	µg/L	☐	-	once/year	grab
(085) Tetrachloroethylene	µg/L	☐	-	once/year	grab
(086) Toluene	µg/L	☐	-	once/year	grab
(087) Trichloroethylene	µg/L	☐	-	once/year	grab
(088) Vinyl chloride (chloroethylene)	µg/L	☐	-	once/year	grab
(089) Aldrin	µg/L	☐	-	once/year	grab
(090) Dieldrin	µg/L	☐	-	once/year	grab
(091) Chlordane (technical mixture and metabolites)	µg/L	☐	-	once/year	grab
(092) 4,4'-DDT	µg/L	☐	-	once/year	grab
(093) 4,4'-DDE (p,p-DDX)	µg/L	☐	-	once/year	grab
(094) 4,4'-DDD (p,p-TDE)	µg/L	☐	-	once/year	grab
(095) Alpha-endosulfan	µg/L	☐	-	once/year	grab
(096) Beta-endosulfan	µg/L	☐	-	once/year	grab
(097) Endosulfan sulfate	µg/L	☐	-	once/year	grab
(098) Endrin	µg/L	☐	-	once/year	grab
(099) Endrin aldehyde	µg/L	☐	-	once/year	grab
(100) Heptachlor	µg/L	☐	-	once/year	grab
(101) Heptachlor epoxide (BHC-hexachlorocyclohexane)	µg/L	☐	-	once/year	grab
(102) Alpha-BHC	µg/L	☐	-	once/year	grab
(103) Beta-BHC	µg/L	☐	-	once/year	grab
(104) Gamma-BHC (lindane)	µg/L	☐	-	once/year	grab
(105) Delta-BHC	µg/L	☐	-	once/year	grab
(106) PCB-1242 (Arochlor 1242)	µg/L	☐	-	once/year	grab
(107) PCB-1254 (Arochlor 1254)	µg/L	☐	-	once/year	grab
(108) PCB-1221 (Arochlor 1221)	µg/L	☐	-	once/year	grab
(109) PCB-1232 (Arochlor 1232)	µg/L	☐	-	once/year	grab
(110) PCB-1248 (Arochlor 1248)	µg/L	☐	-	once/year	grab
(111) PCB-1260 (Arochlor 1260)	µg/L	☐	-	once/year	grab
(112) PCB-1016 (Arochlor 1016)	µg/L	☐	-	once/year	grab
(113) Toxaphene	µg/L	☐	-	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #CT1 cooling tower blowdown	TABLE A-6 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS				
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on September 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:					
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
126 PRIORITY POLLUTANTS					
(114) Antimony, Total Recoverable	µg/L	Ξ	-	once/year	grab
(115) Arsenic, Total Recoverable	µg/L	Ξ	-	once/year	grab
(116) Asbestos, as total fibers	fibers/L	Ξ	-	once/year	grab
(117) Beryllium, Total Recoverable	µg/L	Ξ	-	once/year	grab
(118) Cadmium, Total Recoverable	µg/L	Ξ	-	once/year	grab
(119) Chromium, Total Recoverable	µg/L	200	200	once/year	grab
(120) Copper, Total Recoverable	µg/L	Ξ	-	once/year	grab
(121) Cyanide, Total	µg/L	Ξ	-	once/year	grab
(122) Lead, Total Recoverable	µg/L	Ξ	-	once/year	grab
(123) Mercury, Total Recoverable	µg/L	Ξ	-	once/year	grab
(124) Nickel, Total Recoverable	µg/L	Ξ	-	once/year	grab
(125) Selenium, Total Recoverable	µg/L	Ξ	-	once/year	grab
(126) Silver, Total Recoverable	µg/L	Ξ	-	once/year	grab
(127) Thallium, Total Recoverable	µg/L	Ξ	-	once/year	grab
(128) Zinc, Total Recoverable	µg/L	1000	1000	once/year	grab
(129) 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD)	µg/L	Ξ	-	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.					

OUTFALL #004 <i>emergency discharge</i>	TABLE A-8 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on September 1, 2018 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL						
Flow	MGD	*		*	Ψ	24 hr. total
Precipitation	inches	*		*	Ψ	measured
CONVENTIONAL						
Oil & Grease	mg/L	15		10	Ψ	grab
pH ^Ω	SU	6.5 to 9.0	6.5 to 9.0	Ψ	grab	
Total Suspended Solids	mg/L	100	30	Ψ	grab	
MONITORING REPORTS SHALL BE SUBMITTED BY THE 28 TH DAY OF THE MONTH FOLLOWING DISCHARGE. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

- * Monitoring requirement only.
- ** Monitoring requirement with associated benchmark. See Special Conditions.
- ∞ All samples shall be collected from a discharge resulting from a precipitation event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable precipitation event. If a discharge does not occur within the reporting period, report as no discharge. The total amount of precipitation should be noted from the event from which the samples were collected.
- € Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The monthly average calculation for *E. coli* is expressed as a geometric mean.
- Ω The facility will report the minimum and maximum values. pH is not to be averaged.
- Ψ Permittee will sample daily upon discharge. If no discharge, no report is required. The facility will report all discharges by the 28th day of the month following discharge.
- Φ (a) This permit contains a Total Residual Chlorine (TRC) /Bromine (TRB) limit. This effluent limit is below the minimum quantification level (ML) of the most sensitive EPA approved CLTRC methods. The Department has determined the current acceptable ML is 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.

(b) For the Free Available Chlorine/Free Available Bromine limit, the facility must sample for free available chlorine/bromine during periods of application to the cooling tower; sampling more than once per month is not required unless necessary to meet permit limits. See special condition #2. All samples collected from cooling tower blowdown must be taken without the influence of stormwater and prior to commingling with any other wastewater.
- ≡ Annually, the facility will sample or certify this pollutant is not present in the cooling tower discharge via sampling or providing a narrative. Sampling must occur prior to mixing of any other waste streams. The facility will report “0” for each non-detected or certified absent pollutant. See special condition #4. All samples collected from cooling tower blowdown must be taken without the influence of stormwater and prior to commingling with any other wastewater.

◇ Quarterly sampling

MINIMUM QUARTERLY SAMPLING REQUIREMENTS			
QUARTER	MONTHS	QUARTERLY EFFLUENT PARAMETERS	REPORT IS DUE
First	January, February, March	Sample at least once during any month of the quarter	April 28 th
Second	April, May, June	Sample at least once during any month of the quarter	July 28 th
Third	July, August, September	Sample at least once during any month of the quarter	October 28 th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28 th

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I and Part III standard conditions dated August 1, 2014 and March 1, 2015, respectively, and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. Chronic Whole Effluent Toxicity (WET) tests shall be conducted as follows:
 - (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the most recent edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 7-day, static, renewal toxicity tests with the following species:
 - The fathead minnow, *Pimephales promelas* (Survival and Growth Test Method 1000.0).
 - The daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
 - (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The Allowable Effluent Concentration (AEC) is 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
 - (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
 - (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of chronic toxic units ($TU_c = 100/IC_{25}$) reported according to the *Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* chapter on report preparation and test review. The 25 percent Inhibition Effect Concentration (IC_{25}) is the toxic or effluent concentration that would cause 25 percent reduction in mean young per female or in growth for the test populations.
2. 40 CFR 423.13(c)(2): Neither free available chlorine [or bromine] nor total residual chlorine [or bromine] may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the [Department] the units in a particular location cannot operate at or below this level of chlorination.
3. 40 CFR 423.13(a): There shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly [historically] used for transformer fluid.
4. 40 CFR 423.13(d)(1): The facility shall not discharge any of the 126 priority pollutants (listed in Appendix A) in cooling tower blowdown in any detectable amount except for total recoverable chromium (daily maximum and monthly average limit of 200 µg/L) and total recoverable zinc (daily maximum and monthly average limit of 1000 µg/L). The facility will submit the analytical data and attach a report detailing the findings of this special condition annually and report the values as found on tables A-5, A-6, A-7, and A-8. Report "0" for any pollutant not detected by the most sensitive analytical method in 40 CFR Part 136. The attached report must include the laboratory's detection limit of each pollutant and a copy of the quality check report included with the laboratory narrative. The facility will directly sample a discharge from the cooling towers during a blowdown event prior to mixing with any other effluent.

Alternatively, the facility may certify the pollutants (except for Cr and Zn) are not discharged in the blowdown by reporting "0" and attaching a narrative explaining the reported value of zero. The facility must sample for total recoverable chromium and total recoverable zinc. SDS sheets of the chemicals used in the cooling towers should be submitted.
5. The facility is not permitted to discharge chemical metal cleaning wastes [40 CFR 423.13(e)] under this permit.

C. SPECIAL CONDITIONS (CONTINUED)

6. Electronic Discharge Monitoring Report (eDMR) Submission System
 - (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
 - (b) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
 - (1) Schedule of Compliance Progress Reports;
 - (2) Any additional report required by the permit excluding bypass reporting.After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date.
 - (c) Other actions. The following shall be submitted electronically after such a system has been made available by the Department:
 - (1) General Permit Applications/Notices of Intent to discharge (NOIs);
 - (2) Notices of Termination (NOTs);
 - (3) No Exposure Certifications (NOEs);
 - (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
 - (5) Bypass reporting.
 - (d) Electronic Submissions. To access the eDMR system, use the following link in your web browser: <https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>.
 - (e) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.
7. The purpose of the Stormwater Pollution Prevention Plan (SWPPP) and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.
8. The facility's SIC code(s) or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a SWPPP which must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. The SWPPP must be reviewed and updated every five years or as site conditions change (see Part III: Antidegradation Analysis and SWPPP sections in the fact sheet). The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in February 2009 (www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf). The SWPPP must include:
 - (a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
 - (b) The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
 - i. Operational deficiencies must be corrected within seven (7) calendar days.
 - ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
 - iii. Major structural deficiencies must be reported to the regional office within seven (7) days of discovery. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including the general timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. The permittee will work with the regional office to determine the best course of action, including but not limited to temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
 - iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs.
 - v. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to Department and EPA personnel upon request.
 - (c) A provision for designating an individual to be responsible for environmental matters.
 - (d) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the Department.

C. SPECIAL CONDITIONS (CONTINUED)

9. This permit stipulates pollutant benchmarks applicable to your discharge. The benchmarks do not constitute direct numeric effluent limitations; therefore, a benchmark exceedance alone is not a permit violation. Benchmark monitoring and visual inspections shall be used to determine the overall effectiveness of SWPPP and to assist you in knowing when additional corrective action may be necessary to protect water quality. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce that pollutant in your stormwater discharge(s).

Any time a benchmark exceedance occurs a Corrective Action Report (CAR) must be completed. A CAR is a document that records the efforts undertaken by the facility to improve BMPs to meet benchmarks in future samples. CARs must be retained with the SWPPP and available to the Department upon request. If the efforts taken by the facility are not sufficient and subsequent exceedances of a benchmark occur, the facility must contact the Department if a benchmark value cannot be achieved. Failure to take corrective action to address a benchmark exceedance and failure to make measureable progress towards achieving the benchmarks is a permit violation.

10. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
- (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances.
 - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater. Any spills should be noted in the SWPPP.
 - (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property to comply with general water quality criteria, effluent limits, or benchmarks. This could include the use of straw bales, silt fences, or sediment basins, if needed.
 - (f) Ensure adequate provisions are provided to prevent and to protect embankments from erosion.
11. To protect the general criteria found at 10 CSR 20-7.031(4), before releasing water accumulated in secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen. If the presence of odor or sheen is indicated, the water shall be treated using an appropriate method or disposed of in accordance with legally approved methods, such as being sent to a wastewater treatment facility. Following treatment, the water shall be tested for oil and grease, benzene, toluene, ethylbenzene, and xylene using 40 CFR part 136 methods. All pollutant levels must be below the most protective, applicable standards for the receiving stream, found in 10 CSR 20-7.031 Table A. Records of all testing and treatment of water accumulated in secondary containment shall be stored in the SWPPP to be available on demand to Department and EPA personnel.
12. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.
13. All outfalls and permitted features must be clearly marked in the field.

C. SPECIAL CONDITIONS (CONTINUED)

14. Changes in Discharges of Toxic Pollutant

In addition to the reporting requirements under §122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

- (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
 - (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
 - (4) One milligram per liter (1 mg/L) for antimony;
 - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
 - (6) The notification level established by the Department in accordance with 40 CFR 122.44(f).
- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/L);
 - (2) One milligram per liter (1 mg/L) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
 - (4) The level established by the Director in accordance with §122.44(f).

15. Report as no-discharge when a discharge does not occur during the report period. It is a violation of this permit to report no-discharge when a discharge has occurred.

16. Reporting of Non-Detects

- (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
- (b) The permittee shall not report a sample result as “non-detect” without also reporting the detection limit of the test. Reporting as “non-detect” without also including the detection limit will be considered failure to report, which is a violation of this permit.
- (c) The permittee shall report the “non-detect” result using the less than sign and the minimum detection limit (e.g. <10).
- (d) Where the permit contains a Minimum Level (ML) and the permittee is granted authority in the permit to report zero in lieu of the < ML for a specified parameter (conventional, priority pollutants, metals, etc.), then zero (0) is to be reported for that parameter.
- (e) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
- (f) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).

17. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).

STATE LINE COMBINED CYCLE POWER PLANT

This Statement of Basis (Statement) gives pertinent information regarding modifications to the above listed operating permit with the need for a public comment process. A Statement is not an enforceable part of a Missouri State Operating Permit.

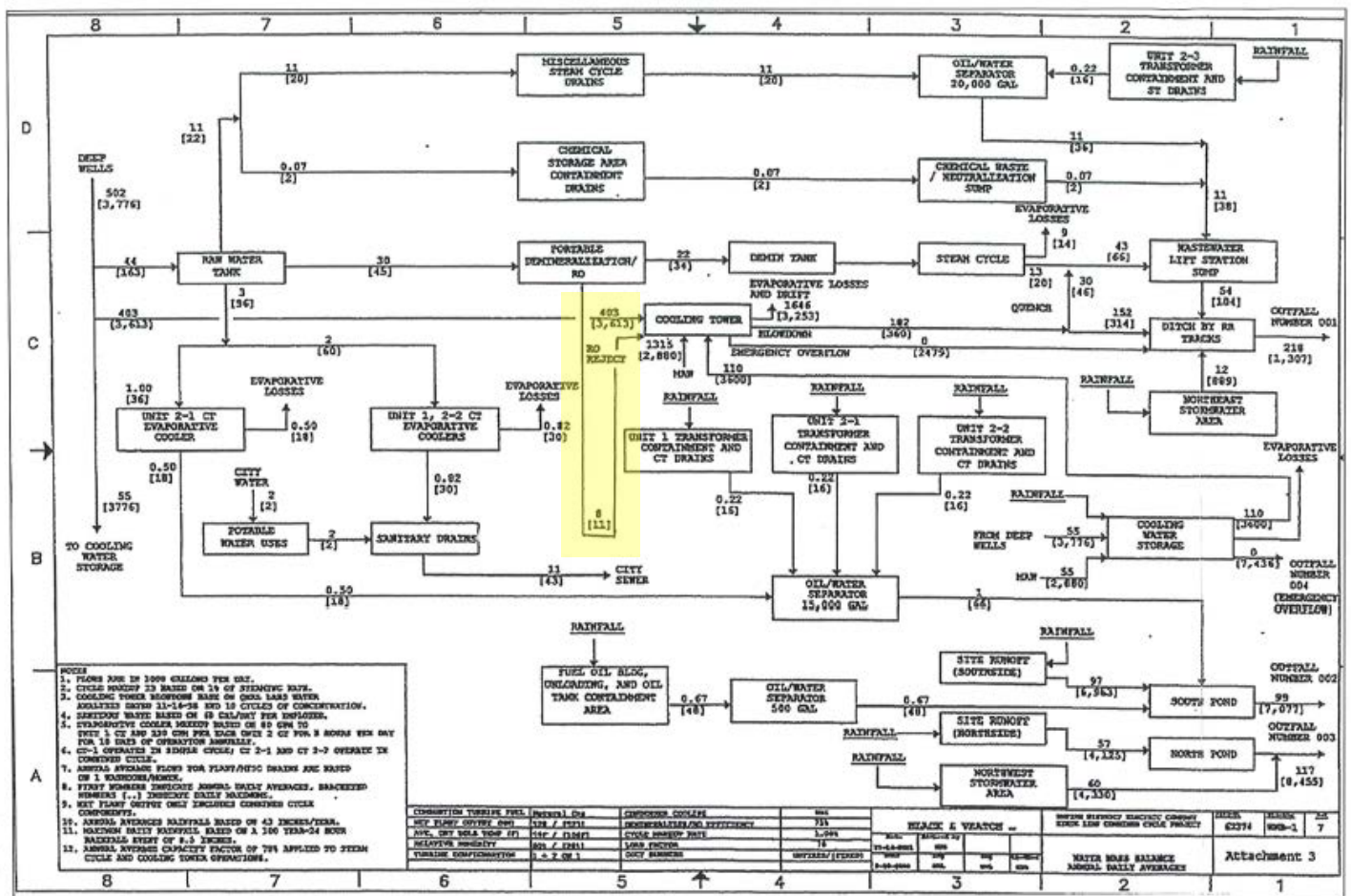
Part I – Facility Information

See page 3. Categorical Industrial; >1 MGD

Part II – Modification Rationale

This operating permit is hereby modified in 2019 to add demineralization /reverse osmosis reject water to outfall #001 description. The permit writer also changed the name of facility, removing “Empire” as shown on page 1 of the application for modification. The engineering section determined the addition of this wastewater did not require an antidegradation review on 3/13/2019. The added wastewater is highlighted on the diagram below.

The charter number for the continuing authority for this facility is F00001872 for the Empire District Electric Company; this number was verified by the permit writer to be associated with the facility; the parent company is located in Canada.



Part III – 2019 Modification Administrative Requirements

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ - The Public Notice period for this operating permit was from 5/24/2019 to 6/24/2019; no comments were received.

The 180 day statutory deadline for issuance is 10/1/2019.

DATE OF FACT SHEET: JUNE 25, 2019.

COMPLETED BY:

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0126713
STATE LINE COMBINED CYCLE POWER PLANT

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollution Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified for less.

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)(A)2.] a factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (MSOP or operating permit) listed below. A factsheet is not an enforceable part of an operating permit.

Part I. FACILITY INFORMATION

Facility Type:	Categorical Industrial
Facility SIC Code(s):	4911
Facility NAICS Code:	221112
Application Date:	09/22/2017
Expiration Date:	03/30/2018

FACILITY DESCRIPTION:

The Empire District Electric Company (Empire District), State Line Combined Cycle Power Plant is an electrical power generating facility engaged in the generation of electricity for distribution and sale. The combined cycle consists of three (3) electrical generating units- two combustion turbines (TS's) (Units 2-1, 2-2) and one steam turbine (Unit 2-3). Additionally, the facility has one (1) simple cycle combustion turbine (Unit 1). The combined cycle portion of the facility is jointly owned by Empire District and Westar Energy, Inc., and is operated by Empire District. The simple-cycle portion of the facility is owned and operated by Empire District. The combined cycle turbines use natural gas as their primary fuel. The simple-cycle combustion turbine may use distillate fuel oil (No. 1, No. 2, or Jet A). Total plant output is a nominal six hundred (600) megawatts. Discharge is to classified sections of Short Creek that are located in Kansas. The distance from outfalls to Short Creek is 1.75 miles.

The facility has a fuel oil (Jet A) storage capacity of approximately 1,470,000 gallons (2-735,000 gallon tanks). These tanks and the secondary containment system were installed in 1995. The tanks are located within a lined secondary containment, sized to contain the fuel contained in both tanks. This containment is operated with a closed drain valve to allow any rain water to be inspected prior to being drained. Additionally, when rain water is actually drained the outflow is further processed through an oil water separator prior to it being routed to a site runoff containment pond which in turn discharges as outfall 002, with is currently monitored for oil & grease.

State Line Combined Cycle Power Plant uses Sodium Bromide as the biocide for the cooling towers which discharge through outfall #001. The analytic method is the same as for TRC; however, the method also detects Bromine as if it was Chlorine.

The facility has seven wells on the property. The facility's cooling water comes from deep wells and from Missouri American Water. For potable uses, the facility uses city water. Sanitary wastes are sent to and treated by the City of Galena, KS POTW.

This permit establishes cooling tower blowdown discharge monitoring and reporting as required by 40 CFR 423.13(d)(1). Continued from special condition #11 in the previous permit but reported to conform to the new eReporting Rule <https://www.epa.gov/compliance/npdes-ereporting> The previous permit did not indicate a testing frequency which is required in this permit as annually as provided by 40 CFR 122.44(i)(2).

The application for renewal indicated outfall #002 contained cooling tower evaporative cooler, cooling tower drains, and transformer drains. However, in an email dated 2/1/2018, the facility representative indicated outfall #002 was only stormwater and will be thusly permitted.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.219 MGD	1.307 MGD	oil water separator, neutralization, chlorination, dechlorination	steam cycle drains, chemical waste sump, cooling tower blowdown, cooling tower drains, steam cycle bed and quench water, transformer drains, minor plant stormwater
#002	0.099 MGD	7.044 MGD	BMPs, oil water separator, settling	stormwater
#003	0.117 MGD	8.455 MGD	BMPs, settling	stormwater
#004	0	7.436 MGD	none	cooling water overflow

FACILITY PERFORMANCE HISTORY & COMMENTS:

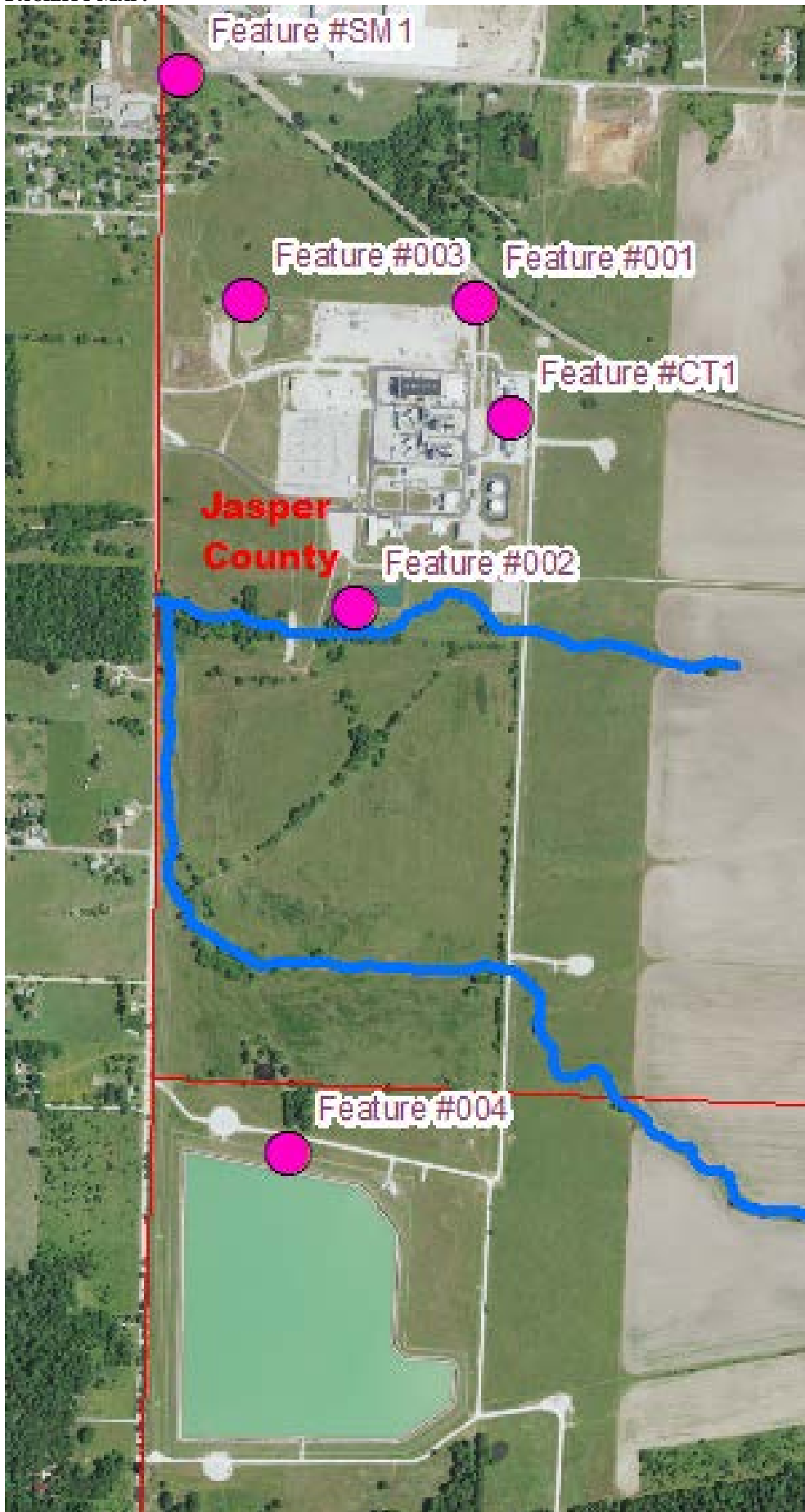
The electronic discharge monitoring reports were reviewed for the last five years; there were no exceedances of permitted limits. Outfall #004 has not discharged in the last five years. Newly classified streams have reduced the distance from the outfall to the first classified streams. An inspection was not found for this facility.

MAJOR WATER USER:

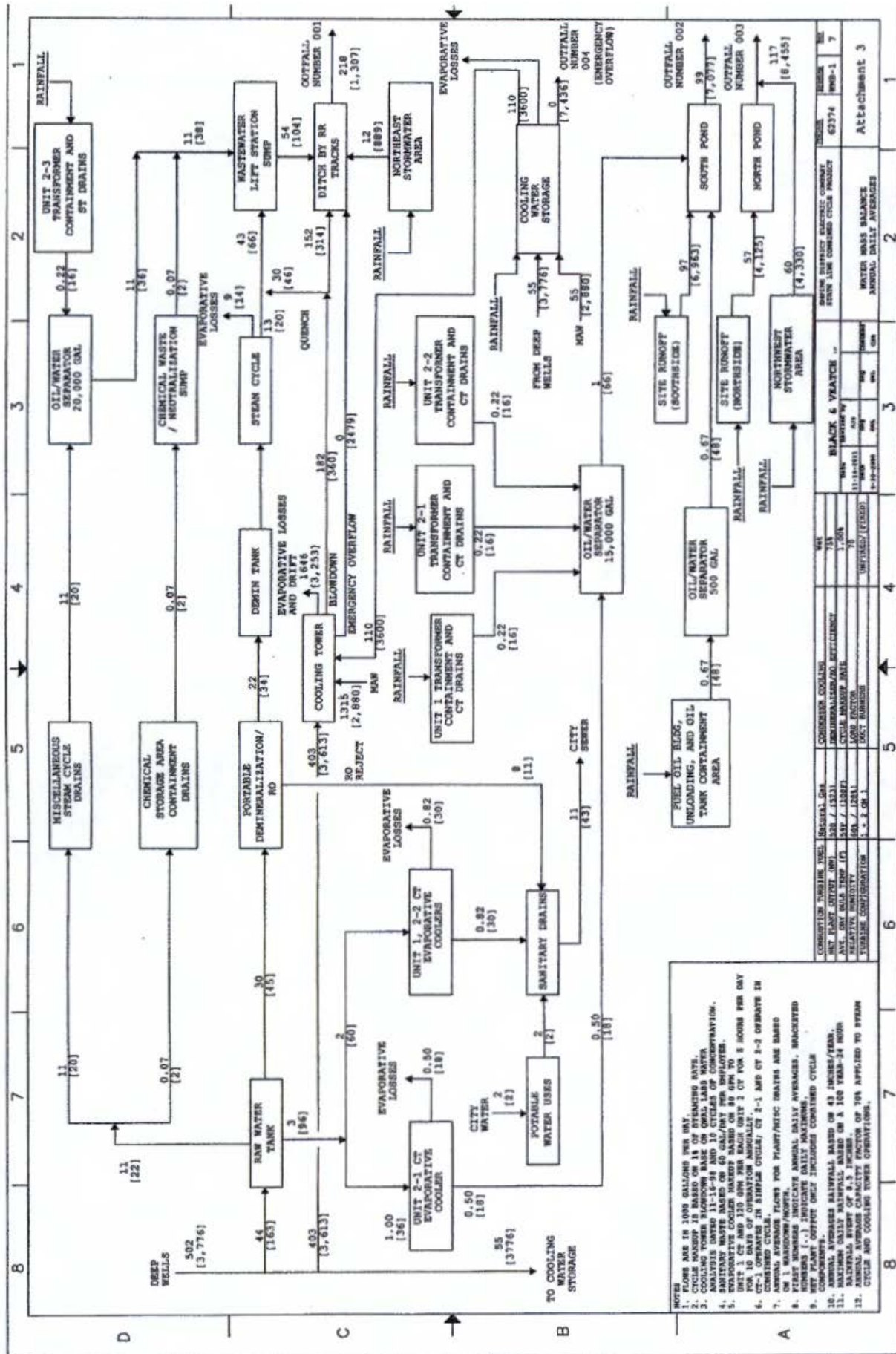
Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statutes Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). <https://dnr.mo.gov/pubs/pub2337.htm>

✓ Applicable; this facility is a major water user and is registered with the state.

FACILITY MAP:



WATER BALANCE DIAGRAM:



Part II. RECEIVING STREAM INFORMATION

RECEIVING WATER BODY'S WATER QUALITY:

Short Creek has water quality data available at the Kansas Department of Health website. <https://maps.kdhe.state.ks.us/kstmdl/>

303(D) LIST:

Section 303(d) of the federal Clean Water Act requires each state identify waters not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock, and wildlife. The 303(d) list helps state and federal agencies keep track of impaired waters not addressed by normal water pollution control programs.

MO: <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>

KS: http://www.kdheks.gov/tmdl/2016/Proposed_Public_List_2016_All_Impaired_Waters.pdf

- ✓ Applicable; Short Creek in the Neosho Basin (HUC 11070207) is listed on the 2016 Kansas 303(d) list for fluoride, selenium, cadmium, copper, lead, zinc, and total phosphorus.
- ✓ This facility was not specifically described as a contributor to the above listed pollutants.
- ✓ The uses impaired by these pollutants are: aquatic life, and water supply (fluoride). Station SC570 in Cherokee Co. KS was the point used for determining the impairment.

TOTAL MAXIMUM DAILY LOAD (TMDL):

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. <http://dnr.mo.gov/env/wpp/tmdl/>

- ✓ Applicable; This facility discharges to streams in Kansas with a TMDL; Short Creek is associated with the Neosho Basin TMDL for fluoride, cadmium, copper, lead, and zinc. http://www.kdheks.gov/tmdl/download/spring_metals.pdf
- ✓ This facility was not named as a source of the above listed pollutants or considered to contribute to the impairment.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

- ✓ As per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], the waters of the state are divided into the following seven categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's effluent limitation table and further discussed in the derivation & discussion of limits section.

Missouri or Mississippi River: ☐
 Lake or Reservoir: ☐
 Losing: ☐
 Metropolitan No-Discharge: ☐
 Special Stream: ☐
 Subsurface Water: ☐
 All Other Waters: ☒

RECEIVING STREAMS TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES**	DISTANCE TO SEGMENT (MILES)	12-DIGIT HUC
#001	Short Creek	n/a	n/a	GEN*	0	Short Creek – Spring River (11070207-0904)
#002	8-20-13 MUDD V1.0	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0	
#003	Short Creek	n/a	n/a	GEN*	0	
#004	Tributary to 8-20-13 MUDD V1.0	n/a	n/a	GEN*	0	
#004	8-20-13 MUDD V1.0	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0.2	

* Short Creek flows into Cherokee Co. Kansas. In Kansas, the stream is identified as #11070207881; this permit has reviewed Kansas' water quality standards and the permit provides protections as required by Missouri and Kansas statues. <http://www.kdheks.gov/tmdl/kswqs.htm>

n/a not applicable

WBID = Waterbody IDentification: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip and Kansas information can be found at http://www.kdheks.gov/befs/download/Current_Surface_Water_Register_Maps.pdf

** As per 10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses to be maintained are in the receiving stream table in accordance with [10 CSR 20-7.031(1)(C)].

Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.:

AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish shellfish and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water

WBC = Whole Body Contact recreation where the entire body is capable of being submerged;

WBC-A = Whole body contact recreation supporting swimming uses and has public access;

WBC-B = Whole body contact recreation supporting swimming;

SCR = Secondary Contact Recreation (like fishing, wading, and boating).

10 CSR 20-7.031(1)(C)3. to 7.:

HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;

IRR = Irrigation for use on crops utilized for human or livestock consumption;

LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply;

IND = Industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Table A currently does not have corresponding habitat use criteria for these defined uses)

WSA = Storm- and flood-water storage and attenuation; **WHP** = Habitat for resident and migratory wildlife species;

WRC = Recreational, cultural, educational, scientific, and natural aesthetic values and uses; **WHC** = Hydrologic cycle maintenance.

10 CSR 20-7.031(6): GRW = Groundwater

MIXING CONSIDERATIONS:

Mixing zone: not allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

Zone of initial dilution: not allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements are recommended at this time.

RECEIVING STREAM MAP:



Part III. RATIONALE AND DERIVATION OF EFFLUENT LIMITATIONS & PERMIT CONDITIONS

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

- ✓ Not applicable; the facility does not discharge to a losing stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:

Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] require a reissued permit to be as stringent as the previous permit with some exceptions. Backsliding (a less stringent permit limitation) is only allowed under certain conditions.

- ✓ Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
 - ✓ Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) which would have justified the application of a less stringent effluent limitation.
 - This permit changes WET testing requirements from pass/fail to monitoring only for toxic units. This change reflects modifications to Missouri's Effluent Regulation found at 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requiring the Department to establish effluent limitations to control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed a pass/fail limitation without collecting sufficient numerical data to conduct an analytical reasonable potential analysis. The permit writer has made a reasonable potential analysis/determination which concluded the facility does not currently have reasonable potential for the acute test but monitoring is required for chronic impacts. Implementation of the toxic unit monitoring requirement will allow the Department to effect numeric criteria in accordance with water quality standards established under CWA §303.
 - ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
 - The previous permit limits for outfall #002 were established when there was process wastewater discharges through the outfall; and outfall #003 were established in error, based on limits process wastewater when in fact none existed; this is a stormwater outfall. This renewal establishes limits and benchmarks appropriate for stormwater discharges. There will be no changes to industrial activities onsite or the composition of the stormwater discharge as a result of this renewal. The benchmark concentrations and required corrective actions within this permit are protective of the receiving stream's uses to be maintained.
 - Monthly averages were not implemented for outfalls #002 and #003 in this permit as the discharge consists of only stormwater which is not continuous pursuant to 40 CFR 122.45(d). Further, average monthly limitations are impracticable measures of non-continuous stormwater discharges because they vary widely in frequency, magnitude, and duration. This permit applies only acute short-term or daily maximum measures which represent stormwater discharges which are acute and sporadic in nature. Discharges of industrial stormwater rarely persist for long durations, making them impracticable to assess using measures with long term exposures or averaging periods. Last, the instream water quality target remains unchanged and the conditions of this permit are protective of both narrative and numeric water quality criteria.
 - The previous permit contained a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality standards in the previous permit. Federal regulations 40 CFR 122.44(d)(1)(iii) requires that in instances where reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination and establishing numeric effluent limitations for specific pollutant parameters, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined that the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality.
 - The previous permit implemented the special condition: "Any sludge that is removed from the cooling water basin shall be analyzed for TCLP. The Department shall be provided a copy of the results along with a disposal plan for review and approval." The permit writer has attached special conditions part III to comply with sludge disposal and rescinded the old special condition.

- The previous permit implemented the special condition: “The Department must be notified any time wastewater (other than domestic) is hauled offsite for treatment or disposal.”
The permit writer has determined this special condition is not required for this permittee; the old special condition was rescinded.
- The previous permit implemented the special condition: “Before releasing water that has accumulated in fuel oil secondary containment areas it must be examined for hydrocarbon odor and presence of sheen. When the presence of hydrocarbons is indicated, and at a minimum of once/quarter, this water must be tested for Total Petroleum Hydrocarbons (TPH). The suggested analytical method for testing TPH is non-Halogenated Organic by Gas Chromatography method 8015 (also known as OA1 and OA2). However, if the permittee so desires to use other approved testing methods (i.e. EPA 1664), they may do so. If the concentration for TPH exceeds 10 mg/L, the water shall be taken to a WWTP for treatment, treated on site, or be taken to a contract hauler.”
The permit writer has determined this special condition is superseded by the new special condition #10.
- The previous permit implemented the special condition: “Using the analytical methods in 40 CFR Part 136, there shall be no detectable amount of the 126 Priority Pollutants contained in chemicals added for cooling tower maintenance as listed in Appendix A to Part 423 [40 CFR 423.15(j)(1)], except as allowed in the regulation for Total Chromium (0.2 mg/L) and Zinc (1.0 mg/L).”
The permit writer has determined this special condition is superseded by tables A-4 through A-8 and new special condition #4.

ANTIDEGRADATION REVIEW:

For process water discharge with new, altered, or expanding discharges, the Department is to document, by means of antidegradation review, if the use of a water body’s available assimilative capacity is justified. In accordance with Missouri’s water quality regulations for antidegradation [10 CSR 20-7.031(3)], degradation may be justified by documenting the socio-economic importance of a discharge after determining the necessity of the discharge. Facilities must submit the antidegradation review request to the Department prior to establishing, altering, or expanding discharges. See <http://dnr.mo.gov/env/wpp/permits/antideg-implementation.htm>

- ✓ Not applicable; the facility has not submitted information proposing expanded or altered process water discharge; no further degradation proposed therefore no further review necessary.

For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the antidegradation analysis performed by the facility, must be implemented and maintained at the facility. Failure to implement and maintain the chosen BMP alternative is a permit violation; see SWPPP.

- ✓ Applicable; the facility must review and maintain stormwater BMPs as appropriate.

BENCHMARKS:

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer. Benchmarks require the facility to monitor, and if necessary, replace and update stormwater control measures. Benchmark concentrations are not effluent limitations. A benchmark exceedance, therefore, is not a permit violation; however, failure to take corrective action is a violation of the permit. Benchmark monitoring data is used to determine the overall effectiveness of control measures and to assist the permittee in knowing when additional corrective actions may be necessary to comply with the limitations of the permit.

Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement determined by the site specific conditions including the receiving water’s current quality. While inspections of the stormwater BMPs occur monthly, facilities with no compliance issues are usually expected to sample stormwater quarterly.

Numeric benchmark values are based on water quality standards or other stormwater permits including guidance forming the basis of Environmental Protection Agency’s (EPA’s) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP). Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States.

- ✓ Applicable; this facility has stormwater-only outfalls with benchmark constraints. The benchmarks listed are consistently achieved in stormwater discharges by a variety of other industries with SWPPPs.

BIOSOLIDS & SEWAGE SLUDGE:

Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for beneficial use (i.e. fertilizer). Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information: <http://extension.missouri.edu/main/DisplayCategory.aspx?C=74> (WQ422 through WQ449).

✓ Not applicable; this condition is not applicable to the permittee for this facility.

CHLORINE/BROMINE BEST PROFESSIONAL JUDGMENT LIMITATIONS:

The facility has stated they are switching from chlorine to bromine for cooling tower disinfection. Both contaminants behave nearly identically in the freshwater environment causing rapid chemical oxidation reactions with available molecules. These halogens are found in the same category of the periodic table, are highly reactive, and neither is found elementally in nature. When determining free available chlorine, the analytical method is the same for both parameters; although no approved method for bromine is found in 40 CFR 136. Detection for chlorine has interferences of other strongly oxidizing molecules and specifically lists bromine presence as interference if only chlorine is to be measured. All field tests measure chlorine, bromine, and any other oxidizing agents present such as iodate, chlorine dioxide, ozone, permanganate, hydrogen peroxide, and disinfection byproducts such as chlorite and chlorate without indemnity, and provide the summation of these parameters in the colorimetric result. Effluent limitation guidelines and Missouri Water Quality Standards do not include bromine; however, given the inherent similarity, the permit writer has determined bromine and chlorine may be considered the same pollutant therefore they are both covered under this permit. The permit writer has determined using chlorine limitations from the effluent limitation guideline at 40 CFR 423 for freely available chlorine, and Missouri Water Quality Standards for total recoverable chlorine to be the best course forward at this time to provide coverage for bromine under technology-based limitations and analysis and calculations for water quality-based limitations. Part IV provides the determination of the limits.

COMPLIANCE AND ENFORCEMENT:

Enforcement is the action taken by the Water Protection Program (WPP) to bring an entity into compliance with the Missouri Clean Water Law, its implementing regulations, and/or any terms and conditions of an operating permit. The primary purpose of the enforcement activity in the WPP is to resolve violations and return the entity to compliance.

✓ Not applicable; the permittee/facility is not currently under Water Protection Program enforcement action.

EFFLUENT LIMITATION GUIDELINE:

Effluent Limitation Guidelines, or ELGs, are found at 40 CFR 400-499. These are limitations established by the EPA based on the SIC code and the type of work a facility is conducting. Most ELGs are for process wastewater and some address stormwater. All are technology based limitations which must be met by the applicable facility at all times.

✓ The facility has an associated Effluent Limit Guideline (ELG). The following table shows the limits in the ELG at 40 CFR 423. Should water-quality derived effluent limits be more protective of the receiving water's quality, the WQS will be used as the limiting factor. Not all of the conditions found below are applicable to all facilities.

PARAMETER	40 CFR 423	DAILY MAXIMUM	MONTHLY AVERAGE	APPLICA- BILITY
Arsenic, Total	BAT – FGD Wastewater	11 µg/L	8 µg/L	no
Chlorine, Free Available	BPT – Cooling Tower Blowdown BPT – Once Through Cooling Water BAT – Once-Through Cooling Water <25 MW	0.5 mg/L	0.2 mg/L	yes
Chlorine, Total Residual	BAT – Once-Through Cooling Water BPT – Once Through Cooling Water >25 MW	0.2 mg/L	n/a	no
Chromium	BAT – Cooling Tower Blowdown	0.2 mg/L	0.2 mg/L	yes
Copper	BPT – Metal Cleaning Wastes	1 mg/L	1 mg/L	no
Iron	BPT – Metal Cleaning Wastes	1 mg/L	1 mg/L	no
Mercury	BAT – FGD Wastewater	0.788 µg/L	0.356 µg/L	no
Nitrate plus Nitrite as N	BAT – FGD Wastewater	17.0 mg/L	4.4 mg/L	no
Oil and Grease	BPT – Low volume wastes, ash transport water, metal cleaning wastes	20 mg/L	15 mg/L	yes
Selenium	BAT – FGD Wastewater	23 µg/L	12 µg/L	no
Sluice Water	BAT – fly ash sluice water BAT – bottom ash sluice water	0	0	no
Total Suspended Solids (TSS)	BPT – Low volume wastes, ash transport water, metal cleaning wastes BPT – Coal Pile Runoff	100 mg/L 50 mg/L	30 mg/L	no no
Zinc	BAT – Cooling Tower Blowdown	1 mg/L	1 mg/L	yes
126 Priority Pollutants	BAT – Cooling Tower Blowdown	0	0	yes

GROUNDWATER MONITORING:

Groundwater is a water of the state according to 10 CSR 20-7.015(1)11, and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

- ✓ This facility is not required to monitor groundwater for the water protection program.

INDUSTRIAL SLUDGE:

Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process wastewater in a treatment works; including but not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment process; scum and solids filtered from water supplies and backwashed; and a material derived from industrial sludge.

- ✓ Permittee is not currently authorized to land apply industrial sludge. Special conditions Part III is attached to guide the permittee should sludge need disposal.

REASONABLE POTENTIAL ANALYSIS (RPA):

Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are (or may be) discharged at a level causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. If the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant [40 CFR Part 122.44(d)(1)(iii)].

- ✓ Applicable; an RPA was conducted on appropriate parameters and was conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request. See Wasteload Allocations (WLA) for Limits in this section.

Parameter	units	Daily Max.	Monthly Average	CMC	RWC Acute	CCC	RWC Chronic	n	Max/Min	CV	MF	RP
Chloride	mg/L	325.63	204.02	860.0	187.50	230.0	187.50	54	136/0.01	0.4	1.38	NO

Units are (µg/L) unless otherwise noted.

n/a Not Applicable

n number of samples; if the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.

CV Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the mean of the same sample set.

CCC continuous chronic concentration

CMC continuous maximum concentration

RWC Receiving Water Concentration: concentration of a toxicant or the parameter in the receiving water after mixing (if applicable)

MF Multiplying Factor; 99% confidence level and 99% probability basis

RP Reasonable Potential: an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

- ✓ Permit writers use the Department's permit writer's manual (<http://dnr.mo.gov/env/wpp/permits/manual/permit-manual.htm>), the EPA's permit writer's manual (<https://www.epa.gov/npdes/npdes-permit-writers-manual>), program policies, and best professional judgment. For each parameter in each permit, the permit writer carefully considers all applicable information regarding: technology based effluent limitations, effluent limitation guidelines, water quality standards, stream flows and uses, and all applicable site specific information and data gathered by the permittee through discharge monitoring reports and renewal (or new) application sampling. Best professional judgment is based on the experience of the permit writer, cohorts in the Department and resources at the EPA, research, and maintaining continuity of permits if necessary. For stormwater permits, the permit writer is required per 10 CSR 6.200(6)(B)2 to consider: A. application and other information supplied by the permittee; B. effluent guidelines; C. best professional judgment of the permit writer; D. water quality; and E. BMPs. Part V provides specific decisions related to this permit.

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. SOC's are allowed under 40 CFR 122.47 providing certain conditions are met.

- ✓ Applicable; the time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(12)]. The facility has been given a schedule of compliance to meet final effluent limits for temperature at outfall #001. Time is required to optimize the cooling towers to meet the water quality limitations.

SECONDARY CONTAINMENT STRUCTURES SPECIAL CONDITION:

The previous permit's special conditions required sampling of total petroleum hydrocarbons (TPH) under the decision model to discharge stormwater having a sheen in secondary containment. The special condition has been revised in all permits beginning in 2015 to include oil and grease and BTEX (benzene, toluene, ethylbenzene, and xylene) sampling of the potentially contaminated stormwater in secondary containment. This change was due to 1) no water quality standards for TPH; and 2) there are no approved methods found in 40 CFR 136 for TPH. The facility need only sample for these constituents prior to release when a sheen or petroleum odor is present.

SPILL REPORTING:

Per 10 CSR 24-3.010, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <http://dnr.mo.gov/env/esp/spillbill.htm>

STORMWATER PERMITTING:

A standard mass-balance equation cannot be calculated for stormwater from this facility because the stormwater flow and flow in the receiving stream cannot be determined for conditions on any given day. The amount of stormwater discharged from the facility will vary based on previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on climatic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc. Decreased permeability increases the flash of the stream.

It is likely sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQs are based on a four-day exposure (except ammonia, which is based on a thirty day exposure). In the event a discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute stormwater discharges from a facility. For these reasons, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(4) and (5)(4)4.B.]. Therefore, industrial stormwater facilities with toxic contaminants do have the potential to cause a violation of acute WQs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above staff are unable to perform statistical Reasonable Potential Analysis (RPA). However, staff will use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to 1) identify sources of pollution or contamination, and 2) select and carry out actions which prevent or control the pollution of storm water discharges.

A SWPPP must be prepared by the permittee if the SIC code is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2). A SWPPP may be required of other facilities where stormwater has been identified as necessitating better management. The purpose of a SWPPP is to comply with all applicable stormwater regulations by creating an adaptive management plan to control and mitigate stream pollution from stormwater runoff. Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

Areas which should be included in the SWPPP are identified in 40 CFR 122.26(b)(14). Once the potential sources of stormwater pollution have been identified, a plan should be formulated to best control the amount of pollutant being released and discharged by each activity or source. This should include, but is not limited to, minimizing exposure to stormwater, good housekeeping measures, proper facility and equipment maintenance, spill prevention and response, vehicle traffic control, and proper materials handling. Once a plan has been developed the facility will employ the control measures determined to be adequate to achieve the benchmark values discussed above. The facility will conduct monitoring and inspections of the BMPs to ensure they are working properly and re-evaluate any BMP not achieving compliance with permitting requirements. For example, if sample results from an outfall show values of TSS above the benchmark value, the BMP being employed is deficient in controlling stormwater pollution. Corrective action should be taken to repair, improve, or replace the failing BMP. This internal evaluation is required at least once per month but should be continued more frequently if BMPs continue to fail. If failures do occur, continue this trial and error process until appropriate BMPs have been established.

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (<http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf>).

Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs that are reasonable and cost effective. The AA evaluation should include practices that are designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why “no discharge” or “no exposure” is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and *Antidegradation Implementation Procedure* (AIP), Section II.B.

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2) financial data of the company and documentation of cost associated with BMPs for review and 3) the SWPPP, which should contain adequate documentation of BMPs employed, failed BMPs, corrective actions, and all other required information. This will allow the Department to conduct a cost analysis on control measures and actions taken by the facility to determine cost-effectiveness of BMPs. The request shall be submitted in the form of an operating permit modification; the application is found at:

<http://dnr.mo.gov/forms/index.html>.

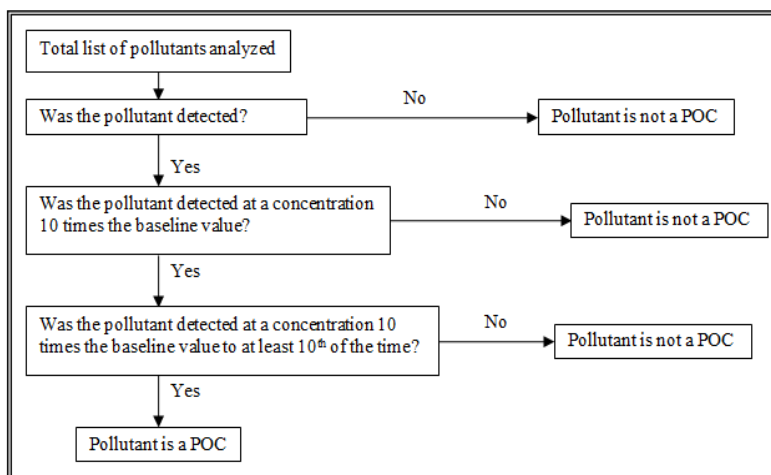
✓ Applicable; a SWPPP shall be developed and implemented for this facility.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

One of the major strategies of the Clean Water Act (CWA) in making “reasonable further progress toward the national goal of eliminating the discharge of all pollutants” is to require effluent limitations based on the capabilities of the technologies available to control those discharges. Technology-based effluent limitations (TBELs) aim to prevent pollution by requiring a minimum level of effluent quality attainable using demonstrated technologies for reducing discharges of pollutants or pollution into the waters of the United States. TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and water quality-based effluent limitations (WQBELs). The NPDES regulations at Title 40 of the Code of Federal Regulations (CFR) 125.3(a) require NPDES permit writers to develop technology-based treatment requirements, consistent with CWA § 301(b) and § 402(a)(1), represent the minimum level of control that must be imposed in a permit. The regulation also indicates that permit writers must include in permits additional or more stringent effluent limitations and conditions, including those necessary to protect water quality. Regardless of the technology chosen to be the basis for limitations, the facility is not required to install the technology, only to meet the established TBEL.

Case-by-case TBELs are developed pursuant to CWA section 402(a)(1), which authorizes the administrator to issue a permit meeting either, 1) all applicable requirements developed under the authority of other sections of the CWA (e.g., technology-based treatment standards, water quality standards) or, 2) before taking the necessary implementing actions related to those requirements, “such conditions as the administrator determines are necessary to carry out the provisions of this Act.” The regulation at §125.3(c)(2) specifically cite this section of the CWA, stating technology-based treatment requirements may be imposed in a permit “on a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable.” Further, §125.3(c)(3) indicates “where promulgated effluent limitations guidelines only apply to certain aspects of the discharger’s operation, or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis to carry out the provisions of the act.” When establishing case-by-case effluent limitations using best professional judgment, the permit writer should cite in the fact sheet or statement of basis both the approach used to develop the limitations, discussed below, and how the limitations carry out the intent and requirements of the CWA and the NPDES regulations.

Baselines to determine contaminants of concern are found in the *Development Document for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry – Final* (EPA 821-R-00-020; August 2000). The baselines represent the treatable concentration of model technology which would effectually treat a pollutant. Chapter 6 Table 6-1 directs the permit writer to multiply the baseline by ten to determine if the parameter is a pollutant of concern. The following table determines the parameters for which a TBEL must be considered; baseline values are retrieved from chapter six.



When developing TBELs for industrial facilities, the permit writer must consider all applicable technology standards and requirements for all pollutants discharged above baseline level. Without applicable effluent guidelines for the discharge or pollutant, permit writers must identify any needed TBELs on a case-by-case basis, in accordance with the statutory factors specified in CWA sections 301(b)(2) and 304(b). The site-specific TBELs reflect the BPJ of the permit writer, taking into account the same statutory factors EPA would use in promulgating a national effluent guideline regulation, but they are applied to the circumstances relating to the applicant. The permit writer also should identify whether state laws or regulations govern TBELs and might require more stringent performance standards than those required by federal regulations. In some cases, a single permit could have TBELs based on effluent guidelines, best professional judgment, state law, and WQBELs based on water quality standards.

For BPT requirements (all pollutants)

- The age of equipment and facilities involved*
- The process(es) employed*
- The engineering aspects of the application of various types of control techniques*
- Process changes*
- Non-water quality environmental impact including energy requirements*
- The total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application

For BCT requirements (conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The reasonableness of the relationship between the costs of attaining a reduction in effluent and the derived effluent reduction benefits
- The comparison of the cost and level of reduction of such pollutants from the discharge of POTWs to the cost and level of reduction of such pollutants from a class or category of industrial sources

For BAT requirements (toxic and non-conventional pollutants)

- All items in the BPT requirements indicated by an asterisk (*) above
- The cost of achieving such effluent reduction

Best Practicable Control Technology Currently Available (BPT) is the first level of technology-based effluent controls for direct dischargers and it applies to all types of pollutants (conventional, nonconventional, and toxic). The Federal Water Pollution Control Act (FWPCA) amendments of 1972 require when EPA establishes BPT standards, it must consider the industry-wide cost of implementing the technology in relation to the pollutant-reduction benefits. EPA also must consider the age of the equipment and facilities, the processes employed, process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and such other factors as the EPA Administrator deems appropriate [CWA §304(b)(1)(B)]. Traditionally, EPA establishes BPT effluent limitations on the basis of the average of the best performance of well-operated facilities in each industrial category or subcategory. Where existing performance is uniformly inadequate, BPT may reflect higher levels of control than currently in place in an industrial category if the agency determines the technology can be practically applied. See CWA sections 301(b)(1)(A) and 304(b)(1)(B). Because the EPA has not promulgated TBELs for the pollutants identified as POCs, the permit writer follows the same format to establish site-specific TBELs. Although the numerical effluent limitations and standards are based on specific processes or treatment technologies to control pollutant discharges, EPA does not require dischargers to use these technologies. Individual facilities may meet the numerical requirements using whatever types of treatment technologies, process changes, and waste management practices they choose.

For each parameter, group of parameters, or outfall treatment process, the facility will summarize the relevant factors below in facility-specific (or waste-stream specific) case-by-case TBEL development. The permittee will supply the required information to the

✓ Not applicable; the permittee is subject to an ELG therefore those technology limitations will be used instead of an individual TBEL POC analysis.

VARIANCE:

Per the Missouri Clean Water Law §644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

✓ Not applicable; this permit is not drafted under premise of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving waters, then the other must be used.

✓ Applicable; wasteload allocations were calculated where relevant using water quality criteria or water quality model results and by applying the dilution equation below:

$$C = \frac{(C_s \times Q_s) + (C_e \times Q_e)}{(Q_e + Q_s)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

- Acute wasteload allocations designated as daily maximum limits (MDL) were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).
- Chronic wasteload allocations designated as monthly average limits (AML) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ).
- Water quality based MDL and AML effluent limitations were calculated using methods and procedures outlined in USEPA's *Technical Support Document For Water Quality-based Toxics Control* or TSD EPA/505/2-90-001; 3/1991.
- Number of Samples "n": In accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For total ammonia as nitrogen, "n = 30" is used.

WLA MODELING:

Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

✓ Not applicable; a WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:

Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, 40 CFR 122.44(d)(1) directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including state narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method to determine discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, when mixed with receiving stream water.

- ✓ Applicable; under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures the provisions in 10 CSR 20-6 and the Water Quality Standards in 10 CSR 20-7 are being met. Under 10 CSR 20-6.010(8)(A)4, the Department may require other terms and conditions it deems necessary to assure compliance with the CWA and related regulations of the Missouri Clean Water Commission. The following Missouri Clean Water Laws (MCWL) apply: §644.051.3. requires the Department to set permit conditions complying with the MCWL and CWA; §644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits); and §644.051.5. is the basic authority to require testing conditions. WET tests are required by all facilities meeting the following criteria:

- ☒ Facility is designated a power generating facility.
- ☒ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts
- ☒ Facility is monitoring for Water Quality-Based Effluent Limitations for toxic substances

Part IV. EFFLUENT LIMITS DETERMINATION

Effluent limitations derived and established in the below effluent limitations table are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required under 40 CFR 122.45(d)(1) for continuous discharges not from a POTW.

GENERAL CRITERIA CONSIDERATIONS:

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants which have been determined to cause, have the reasonable potential to cause, or to contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. The previous permit included the narrative criteria as specific prohibitions placed upon the discharge. These prohibitions were included in the permit absent any discussion of the discharge's reasonable potential to cause or contribute to an excursion of the criterion. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether the discharge has reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). In instances where reasonable potential exists, the permit includes numeric limitations to address the reasonable potential. In instances where reasonable potential does not exist the permit includes monitoring of the discharges potential to impact the receiving stream's narrative criteria. Finally, all of the previous permit narrative criteria prohibitions have been removed from the permit given they are addressed by numeric limits where reasonable potential exists. It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit state that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission.

- (A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates putrescent wastewater would be discharged from the facility.
 - For all outfalls, there is no RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates solids will be discharged from the facility in amounts causing a decrease in beneficial uses.
- (B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.
- For outfalls #002, #003, and #004, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal or during prior sampling for DMR requirements for these outfalls indicates oil will be present in sufficient amounts to impair beneficial uses.
 - For outfall #001, there is RP for oil in sufficient amounts to be unsightly and preventing full maintenance of beneficial uses because disclosures by the permittee at renewal or during prior sampling for DMR requirements for this outfall indicates oil will be present in sufficient amounts to impair beneficial uses. Limitations for oil and grease are continued at this outfall.
 - For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses
- (C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
- For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates unsightly color or turbidity will be present in sufficient amounts to impair beneficial uses.
 - For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates offensive odor will be present in sufficient amounts to impair beneficial uses.
- (D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
- The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants that could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.
- (E) There shall be no significant human health hazard from incidental contact with the water.

- It is the permit writer's opinion that this criterion is the same as (D).

(F) There shall be no acute toxicity to livestock or wildlife watering.

- It is the permit writer's opinion that this criterion is the same as (D).

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.

- For outfalls #002, #003, and #004, there is no RP for physical changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates physical changes that would impair the natural biological community.
- For outfall #001, there is RP for physical changes that would impair the natural biological community because thermal discharges disclosed by the permittee indicates physical changes that would impair the natural biological community. This permit applies limitations on temperature which are protective of this general criterion.
- For outfalls #002, #003, and #004, there is no RP for chemical changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates chemical changes that would impair the natural biological community.
- For outfall #001, there is RP for chemical changes that would impair the natural biological community because disclosures by the permittee at renewal for this outfall indicates chemical changes that would impair the natural biological community. It has previously been established that any chemical changes are covered by the specific numeric effluent limitations established in the permit
- For all outfalls, there is no RP for hydrologic changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates hydrologic changes that would impair the natural biological community.

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

- There are no solid waste disposal activities or any operation that has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

OUTFALL #001 – COOLING TOWER DISCHARGES; INCIDENTAL STORMWATER - MAIN FACILITY OUTFALL

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	ONCE/DAY	MONTHLY	24 Hr. Tot
TEMPERATURE	°F	109.5	94.6	NEW	ONCE/DAY	MONTHLY	GRAB
CONVENTIONAL							
CHLORINE/BROMINE, TOTAL RESIDUAL (SEE ML IN PERMIT)	µg/L	17	8	19, 11	ONCE/MONTH	MONTHLY	GRAB
OIL & GREASE	mg/L	15	10	SAME	ONCE/MONTH	MONTHLY	GRAB
pH ‡	SU	6.5 TO 9.0	6.5 TO 9.0	SAME	ONCE/MONTH	MONTHLY	GRAB
TSS	mg/L	100	30	SAME	ONCE/MONTH	MONTHLY	GRAB
NUTRIENTS							
NITROGEN, TOTAL N (TN)	mg/L	*	*	NEW	ONCE/QUARTER	QUARTERLY	GRAB
PHOSPHORUS, TOTAL P (TP)	mg/L	*	*	NEW	ONCE/QUARTER	QUARTERLY	GRAB
OTHER							
CHLORIDE	mg/L	*	*	SAME	ONCE/QUARTER	QUARTERLY	GRAB
SULFATE	mg/L	*	*	SAME	ONCE/QUARTER	QUARTERLY	GRAB
CHLORIDE PLUS SULFATE	mg/L	*	*	NEW	ONCE/QUARTER	QUARTERLY	GRAB
FLUORIDE	mg/L	*	*	NEW	ONCE/QUARTER	QUARTERLY	GRAB
SURFACTANTS	mg/L	*	*	NEW	ONCE/QUARTER	QUARTERLY	GRAB
WET TEST - CHRONIC	TUc	*	-	P/F	ONCE/YEAR	ANNUALLY	GRAB

- * Monitoring requirement only
- ‡ The facility will report the minimum and maximum pH values; pH is not to be averaged.
- NEW Parameter not previously established in previous state operating permit.
- I interim
- F final
- ‡ # of colonies/100mL; the Monthly Average for *E. coli* is a geometric mean.
- TR total recoverable
- p/f pass/fail

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD).

Hardness

Monitoring not continued. This data is not pertinent to the discharge at the facility.

Temperature

Previous permit was daily monitoring. The EPA has not promulgated an ELG for thermal discharges from direct dischargers; therefore, the department evaluated performance of this facility and has applied the information supplied by the facility to determine technology based effluent limitations (TBELs) for thermal discharges. The site-specific TBELs reflect the best professional judgment (BPJ) of the permit writer, taking into account the same statutory factors EPA would use in promulgating a national effluent guideline regulation, but they are applied to the circumstances relating to the applicant. Although the regulations do not require the use of any particular treatment technology, they do require facilities to achieve effluent limitations that reflect the proper operation of the model technologies selected as the basis for the effluent guidelines and from which the performance data were obtained to generate the limitations. The facility utilizes groundwater and cooling towers to mitigate thermal

discharges. The department has concluded the best technology economically achievable (BAT) for this facility is cooling towers, which are already installed.

Using methods described in the EPA's permit writer's manual chapter 5, the permit writer has derived technology based limitations for this facility. EPA acknowledges process and treatment systems have inherent variability and, therefore, incorporates an allowance for this variation into the limitations specified in the effluent guidelines. That allowance is based on statistical analysis of the data from facilities using the model technologies. By accounting for those reasonable excursions above the long-term average, the limitations in effluent guidelines generally are well above the actual long-term averages. EPA has different objectives in establishing maximum daily and average monthly limitations in effluent guidelines. In establishing maximum daily limitations, the permit writer's objective is to restrict the discharges on a daily basis at a level that is achievable for a facility that targets its treatment at the long-term average. In establishing average monthly limitations, the permit writer's objective is to provide an additional restriction to help ensure that facilities target their average discharges in a manner that will achieve the long-term average. The average monthly limitation requires continuous dischargers to provide ongoing control on a monthly basis that complements controls imposed by the maximum daily limitation. To meet the average monthly limitation, a facility must counterbalance a value near the maximum daily limitation with one or more values well below the maximum daily limitation.

Temperature data was obtained from monitoring period 1/1/2013 through 12/31/2017, which is about 5 years of data. The maximum temperature recorded was 97 °F. When developing the TBEL BPJ limit, the permit writer used an approach consistent with EPA's ELG statistical approach in the older version (c. 1984) of the EPA's permit writer's manual, chapter 5 (as the newer version does not elucidate how to derive the variability index). Specifically, the daily maximum limitation can be calculated by multiplying the long-term average by a daily variability factor. The daily variability factor is a statistical entity defined as the ratio of the estimated 99th percentile of a distribution of daily values divided by the mean of the distribution. Similarly, the monthly variability factor is typically defined as the estimated 95th percentile of the distribution of averages divided by the mean of the monthly averages. The monthly maximum limitation can be calculated similarly except that the variability factor corresponds to the distribution of monthly averages instead of daily concentration measurements. The TBEL limitations are calculated by multiplying the variability index by the percentile.

	DAILY MAXIMUM	MONTHLY AVERAGE
MAXIMUM REPORTED	97 °F	86.9 °F
LONG TERM AVERAGE	85.9 °F	76.9 °F
PERCENTILE	99 th Percentile = 97 °F	95 th Percentile = 85.3 °F
VARIABILITY INDEX	Daily = 1.128	Monthly = 1.126
TBEL CALCULATION	109.5 °F	94.6 °F

After review of the calculated limitations, the permit writer has evaluated the current technological accomplishments of the facility. After data review, the permit writer has determined a daily maximum of **109.5 °F** and a monthly average of **94.6 °F** is immediately applicable as the facility has consistently operated the facility within these constraints. TBEL limitations are not allowed a schedule of compliance.

In accordance with 10 CSR 20-7.031(5)(D), water contaminant sources shall not cause or contribute to stream temperature in excess of ninety degrees Fahrenheit (90 °F). Previous permit had daily monitoring for this parameter. However, the first classified stream is over 2 miles from the facility discharge. The facility samples the unclassified stream prior to mixing with the classified stream and the discharge at that point does not have reasonable potential to cause or contribute to in-stream exceedances of temperature therefore water quality limits are not required. Monitoring of the thermal discharges for this facility was moved from about two miles away (off of the facility property) to the point at which the discharge exits the facility's property. Even with the new monitoring point, the permit writer does not believe the facility to have reasonable potential to cause thermal in-stream exceedances.

CONVENTIONAL:

Chlorine/Bromine, Total Residual (TRC/TRB)

Daily maximum 17 µg/L, monthly average 8 µg/L. Warm-water Protection of Aquatic Life CCC = 10 µg/L, CMC = 19 µg/L [10 CSR 20-7.031, Table A]. Background = 0 µg/L. Data submitted by the permittee was 0.01 µg/L for this parameter for every entry. The permit writer notes this is unlikely correct therefore site specific data was not used in the calculation of permit limits. Because the detection limit is significantly above the permit limits and the facility uses chlorine or bromine in the cooling system, the permit writer has determined RP per RPD. Previous permit limits were 19 µg/L daily maximum and 11 µg/L for monthly average. No schedule as the detection limits for these parameters is typically between 50 and 130 µg/L. Monthly monitoring continued. The facility will use the chlorine parameter to report chlorine/bromine in the eDMR system.

Acute WLA: $C_e = 19 \mu\text{g/L}$

Chronic WLA: $C_e = 10 \mu\text{g/L}$

$LTA_a = 19 (0.321) = 6.1 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]

$LTA_c = 10 (0.527) = 5.3 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]

Use most protective number of LTA_a or LTA_c .

$MDL = 5.3 (3.11) = 16.5 = 17 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]

$AML = 5.3 (1.55) = 8.2 = 8 \mu\text{g/L}$

[CV = 0.6, 95th Percentile, n = 4]

Oil & Grease

Daily maximum 15 mg/L, monthly average 10 mg/L. 10 CSR 20-7.031 Table A. Continued from previous permit; the permit writer has determined there is reasonable potential for this parameter as the facility reported between non-detect and 15 mg/L. Conventional pollutant, in accordance with *Criteria for Designated Uses*; 10 mg/L monthly average (chronic standard). The daily maximum was calculated using the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001). Section 5.4.2 indicates the waste load allocation can be set to the chronic standard. When the chronic standard is multiplied by 1.5, the daily maximum can be calculated. Hence, $10 * 1.5 = 15 \text{ mg/L}$ for the daily maximum.

pH

6.5 to 9.0 SU. The Water Quality Standard at 10 CSR 20-7.031(5)(E) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units. Continued from previous permit.

Total Suspended Solids (TSS)

100 mg/L daily maximum, 30 mg/L monthly average. 40 CFR 423.12(b)(3). BPT; the facility is capable of meeting these limits. Monthly monitoring continued although additional samples may be required to meet the monthly average.

NUTRIENTS:

Nitrogen, Total N (TN)

Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD; this parameter was present in the discharge at 1.5 mg/L; new parameter.

Phosphorous, Total P (TP)

Per 10 CSR 20-7.015(9)(D)7, nutrient monitoring shall be instituted on a quarterly basis for facilities with a design flow greater than 0.1 MGD; this parameter was present in the discharge at 0.44 mg/L; new parameter.

OTHER:

Chloride

Monitoring continued. The facility reported between 18.5 and 136 mg/L for this parameter. There is no RP per RPA. However, the permit writer has determined this parameter is a pollutant of concern therefore monitoring is continued.

Sulfate

Monitoring continued. The facility reported between 65.8 and 635 mg/L for this parameter. See chloride plus sulfate.

Chloride plus Sulfate

Monitoring continued. The facility will report the sum of the daily maximum values for chloride plus sulfate. The summed values (as summed by the permit writer) were between 84.4 and 743 mg/L. No RP per RPD as the values are all below the Missouri Water Quality Standard of 1000 mg/L for the sum of chloride and sulfate.

Fluoride

Monitoring required to determine compliance with Missouri Water quality standards and contributions to the 303(d) impairment in Kansas. The facility reported 2.1 mg/L in the application. Quarterly monitoring required.

Surfactants

Monitoring required to determine quantity of surfactants in the discharge. The permittee must use one of the two methods listed in 40 CFR 136; Table IB—List of Approved Inorganic Test Procedures. The only methods are Standard Methods 5540 C-2011 or ASTM D2330-02. The facility will report in mg/L.

Whole Effluent Toxicity (WET) Test, Chronic

Annual monitoring is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream. Previous permit required acute testing, however, the acute test is not protective of a stream which is dominated by effluent. The standard Allowable Effluent Concentration (AEC) for facilities discharging to unclassified, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] is 100%. The standard dilution series for facilities discharging to unclassified, Class C, Class P (with default mixing considerations), or lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] is 100%, 50%, 25%, 12.5%, & 6.25%.

PERMITTED FEATURE #CT1 – COOLING TOWER BLOWDOWN

COOLING TOWER EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	*, *	ONCE/MONTH	ONCE/MONTH	24 Hr. Tot
CONVENTIONAL							
CHLORINE/BROMINE, FREE AVAIL.	µg/L	500	200	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
METALS							
CHROMIUM, TR	µg/L	200	200	SAME	ONCE/YEAR	ONCE/YEAR	GRAB
ZINC, TR	µg/L	1000	1000	SAME	ONCE/YEAR	ONCE/YEAR	GRAB
OTHER							
126 PRIORITY POLLUTANTS	µg/L	Ξ	Ξ	SAME	ONCE/YEAR	ONCE/YEAR	GRAB

All samples collected from cooling tower blowdown must be taken without the influence of stormwater and prior to commingling with any other wastewater.

- * monitoring requirement only
- † the facility will report the minimum and maximum pH values; pH is not to be averaged
- same limits/conditions same as previous permit
- TR total recoverable
- Ξ see permit and special conditions

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD); daily sampling requirement; the permittee was unsure of the frequency of cooling tower blowdown, daily monitoring required to assess the overall discharges from the cooling towers. The facility has indicated they are installing continuous flow meters on the cooling towers and require a year to perform that operation. The schedule of compliance indicates the facility will determine flow once per month the first year then continuously the following.

CONVENTIONAL:

Chlorine/Bromine, Free Available

40 CFR 423.13(d)(1): 500 µg/L daily maximum, 200 µg/L monthly average; new. The note associated with this parameter states the facility must sample for this parameter during periods of chlorination/bromination. The facility is not required to sample each time the facility chlorinates or applies bromine. Minimum sampling frequency is once per month but additional samples may be taken if needed to meet the monthly average limit. See permit and special conditions. See Part III, Rationale for best professional judgment regarding the chlorine/bromine parameter.

METALS:

Chromium, Total Recoverable

Per the ELG 40 CFR 423.13(d)(1), the discharges from cooling tower blowdown shall not exceed 200 µg/L daily maximum and monthly average. Sampling required. There is no schedule of compliance allowed for this parameter, as it is a technology requirement, and it will be established with annual monitoring and reporting per 40 CFR 122.44(i)(2).

Zinc, Total Recoverable

Per the ELG at 40 CFR 423.13(d)(1), the discharge from cooling tower blowdown shall not exceed 1000 µg/L daily maximum and monthly average. Sampling required. There is no schedule of compliance allowed for this parameter, as it is a technology requirement, and it will be established with annual monitoring and reporting per 40 CFR 122.44(i)(2).

126 PRIORITY POLLUTANTS:

126 Priority Pollutants

40 CFR 423.13(d)(1) This permit continues the requirement the facility either test, for or certify absent, the 126 priority pollutants listed in Appendix A of 40 CFR 423 which are duplicated as tables in the permit. See special condition #4 in the permit. The facility is still required to sample for, and attain limits for, total recoverable chromium, of 200 µg/L, and total recoverable zinc, of 1000 µg/L as shown above. The previous permit did not provide a sampling frequency for the 126 priority pollutants; however, this permit will require annual sampling/certification per 40 CFR 122.44(i)(2).

OUTFALLS #002 AND #003 – STORMWATER ONLY

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAXIMUM LIMIT	BENCH- MARK	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	-	NEW	ONCE/QUARTER	ONCE/QUARTER	24 HR. ESTIMATE
PRECIPITATION	inches	*	-	NEW	ONCE/QUARTER	ONCE/QUARTER	24 HR. TOT
CONVENTIONAL							
COD	mg/L	**	120	NEW	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	mg/L	**	10	15, 10	ONCE/QUARTER	ONCE/QUARTER	GRAB
pH ‡	SU	6.5 TO 9.0	-	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
TSS	mg/L	**	100	100, 30	ONCE/QUARTER	ONCE/QUARTER	GRAB

* Monitoring requirement only

** Monitoring with associated benchmark

‡ The facility will report the minimum and maximum pH values; pH is not to be averaged

NEW Parameter not established in previous operating permit

TR Total Recoverable

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD).

Precipitation

Stormwater Only: Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters. It is not necessary to report all days of precipitation during the quarter because of the readily available on-line data.

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring with a benchmark of 120 mg/L is included using the permit writer's best professional judgment; new parameter. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater that cause an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs. Additionally, a benchmark value will be implemented for this parameter. This benchmark value falls within the range of values implemented in other permits that have similar industrial activities.

Oil & Grease

Monitoring with a daily maximum benchmark of 10 mg/L. Previous permit limits were 15 mg/L daily maximum and 10 mg/L monthly average. There is no RP per RPD therefore limits may be removed. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. It is recommended to perform separate testing for these constituents if they are a known pollutant of concern at the site, i.e. aquatic life toxicity or human health is a concern. Results do not allow for separation of specific pollutants within the test, they are reported, totaled, as "oil and grease". Per 10 CSR 20-7.031 Table A: *Criteria for Designated Uses*; 10 mg/L is the standard for protection of aquatic life. This standard will also be used to protect the general criteria found at 10 CSR 20: 7.031 (4). 10 mg/L is the level at which sheen is expected to form on receiving waters. Oils and greases of different densities will possibly form sheen or unsightly bottom

deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits.

pH

6.5 to 9.0 SU. The Water Quality Standard at 10 CSR 20-7.031(5)(E) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units. Continued from previous permit.

Total Suspended Solids (TSS)

Monitoring with a benchmark of 100 mg/L. Previous permit limits were 100 mg/L daily maximum and 30 mg/L monthly average. The facility reported between non-detect and 100 mg/L at outfall #002 and 8 and 32 mg/L for this parameter at outfall #003; there is no RP per RPD for this parameter therefore limits may be removed in favor of a benchmark. The permittee has settling basins for both outfalls which have been shown to remove suspended solids in the stormwater. <https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#edu> Maintenance of the basins is required to continue to meet the benchmarks established in this permit. There is no water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS that may indicate uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. A benchmark value will be implemented for this parameter. The benchmark value will be set at 100 mg/L. This value is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

OUTFALL #004 – COOLING WATER STORAGE OVERFLOW

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	*, *	Ψ	Ψ	24 Hr. TOT
PRECIPITATION	inches	*	*	NEW	Ψ	Ψ	MEASURED
CONVENTIONAL							
OIL & GREASE	mg/L	15	10	SAME	Ψ	Ψ	GRAB
pH ‡	SU	6.5 TO 9.0	6.5 TO 9.0	SAME	Ψ	Ψ	GRAB
TSS	mg/L	100	30	SAME	Ψ	Ψ	GRAB

* Monitoring requirement only

‡ The facility will report the minimum and maximum pH values; pH is not to be averaged.

NEW Parameter not previously established in previous state operating permit.

Ψ Permittee will sample daily upon discharge. If no discharge, no report is required. The facility will report all discharges by the 28th day of the month following discharge.

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification. The facility will report the total flow in millions of gallons per day (MGD). The facility will determine flow once per day per discharge.

Precipitation

Monitoring only requirement; measuring the amount of precipitation [(10 CSR 20-6.200(2)(C)1.E(VI)] during an event is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters when discharge has occurred.

CONVENTIONAL:

Oil & Grease

Conventional pollutant, in accordance with 10 CSR 20-7.031 Table A: *Criteria for Designated Uses*; 10 mg/L monthly average (chronic standard). The daily maximum was calculated using the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001). Section 5.4.2 indicates the waste load allocation can be set to the chronic standard. When the chronic standard is multiplied by 1.5, the daily maximum can be calculated. Hence, $10 * 1.5 = 15$ mg/L for the daily maximum. Continued from previous permit.

pH

6.5 to 9.0 SU. The Water Quality Standard at 10 CSR 20-7.031(5)(E) states water contaminants shall not cause pH to be outside the range of 6.5 to 9.0 standard pH units. Continued from previous permit.

Total Suspended Solids (TSS)

100 mg/L daily maximum, 30 mg/L monthly average; 40 CFR 423.12(b)(3) - low volume waste source. Continued from previous permit.

Part V. SAMPLING AND REPORTING REQUIREMENTS:

Refer to each outfall's derivation and discussion of limits section to review individual sampling and reporting frequencies and sampling type. Additionally, see Standard Conditions Part I attached at the end of this permit and fully incorporated within.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

The U.S. Environmental Protection Agency (EPA) promulgated a final rule on October 22, 2015, to modernize Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. This final rule requires regulated entities and state and federal regulators to use information technology to electronically report data required by the National Pollutant Discharge Elimination System (NPDES) permit program instead of filing paper reports. To comply with the federal rule, the Department is requiring all permittees to begin submitting discharge monitoring data and reports online.

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is non-transferable.

The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

✓ The permittee/facility is currently using the eDMR data reporting system.

SAMPLING FREQUENCY JUSTIFICATION:

Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

SAMPLING TYPE JUSTIFICATION:

Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, and volatile organic samples.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is "sufficiently sensitive" when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility's discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the Department. Table A at 10 CFR 20-7.031 shows water quality standards.

Part VI. ADMINISTRATIVE REQUIREMENTS

On the basis of preliminary staff review and the application of applicable standards and regulations, the Department, as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions contained herein and within the operating permit. The proposed determinations are tentative pending public comment.

PERMIT SYNCHRONIZATION:

The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together and all expire in the same fiscal year. <http://dnr.mo.gov/env/wpp/cpp/docs/watershed-based-management.pdf>. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. Renewal applications must continue to be submitted within 180 days of expiration, however, in instances where effluent data from the previous renewal is less than three years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit.

✓ *This permit will maintain synchronization by expiring the end of the 1st quarter 2023.*

PUBLIC NOTICE:

The Department shall give public notice that a draft permit has been prepared and its issuance is pending.

<http://dnr.mo.gov/env/wpp/permits/pn/index.html> Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ - The Public Notice period for this operating permit was from 7/13/2018 to 8/13/2018. No comments were received.

DATE OF FACT SHEET: AUGUST 16, 2018

COMPLETED BY:

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
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STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
REVISED
AUGUST 1, 2014

These Standard Conditions incorporate permit conditions as required by 40 CFR 122.41 or other applicable state statutes or regulations. These minimum conditions apply unless superseded by requirements specified in the permit.

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. **Sampling Requirements.**
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
2. **Monitoring Requirements.**
 - a. Records of monitoring information shall include:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
 - b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.
3. **Sample and Monitoring Calculations.** Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.
4. **Test Procedures.** The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure that the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations that are low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method minimum level is at or below the level of the applicable water quality criterion for the pollutant or, 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough that the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015. These methods are also required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established. A permittee is responsible for working with their contractors to ensure that the analysis performed is sufficiently sensitive.
5. **Record Retention.** Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

6. **Illegal Activities.**
 - a. The Federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under the permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or both.
 - b. The Missouri Clean Water Law provides that any person or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than six (6) months, or by both. Second and successive convictions for violation under this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

Section B – Reporting Requirements

1. **Planned Changes.**
 - a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
 - i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42;
 - iii. The alteration or addition results in a significant change in the permittee’s sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
 - iv. Any facility expansions, production increases, or process modifications which will result in a new or substantially different discharge or sludge characteristics must be reported to the Department 60 days before the facility or process modification begins. Notification may be accomplished by application for a new permit. If the discharge does not violate effluent limitations specified in the permit, the facility is to submit a notice to the Department of the changed discharge at least 30 days before such changes. The Department may require a construction permit and/or permit modification as a result of the proposed changes at the facility.
2. **Non-compliance Reporting.**
 - a. The permittee shall report any noncompliance which may endanger health or the environment. Relevant information shall be provided orally or via the current electronic method approved by the Department, within 24 hours from the time the permittee becomes aware of the circumstances, and shall be reported to the appropriate Regional Office during normal business hours or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. A written submission shall also be provided within five (5) business days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.



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- b. The following shall be included as information which must be reported within 24 hours under this paragraph.
 - i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
 - ii. Any upset which exceeds any effluent limitation in the permit.
 - iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
 - c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.
3. **Anticipated Noncompliance.** The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.
 4. **Compliance Schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.
 5. **Other Noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.
 6. **Other Information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.
 7. **Discharge Monitoring Reports.**
 - a. Monitoring results shall be reported at the intervals specified in the permit.
 - b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
 - c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.
- b. Notice.
 - i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
 - ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
 - c. Prohibition of bypass.
 - i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 3. The permittee submitted notices as required under paragraph 2. b. of this section.
 - ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.
3. **Upset Requirements.**
 - a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
 - b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - i. An upset occurred and that the permittee can identify the cause(s) of the upset;
 - ii. The permitted facility was at the time being properly operated; and
 - iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
 - iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
 - c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section C – Bypass/Upset Requirements

1. **Definitions.**
 - a. *Bypass*: the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending.
 - b. *Severe Property Damage*: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
 - c. *Upset*: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
2. **Bypass Requirements.**
 - a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2. b. and 2. c. of this section.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
 - a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
 - b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement



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- imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.
- d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed \$10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than \$50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.
2. **Duty to Reapply.**
- a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
- b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
- c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. **Need to Halt or Reduce Activity Not a Defense.** It shall not be a defense for a 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.
4. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. **Proper Operation and Maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. **Permit Actions.**
- a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
- i. Violations of any terms or conditions of this permit or the law;
- ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
- iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
- iv. Any reason set forth in the Law or Regulations.
- b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
7. **Permit Transfer.**
- a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
- b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
- c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. **Property Rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.



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10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.
11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.
12. **Closure of Treatment Facilities.**
 - a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
 - b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.
13. **Signatory Requirement.**
 - a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
 - b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.
14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.

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MISSOURI CLEAN WATER COMMISSION
March 1, 2015

**PART III – SLUDGE AND BIOSOLIDS FROM DOMESTIC AND INDUSTRIAL WASTEWATER
TREATMENT FACILITIES**

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
 - a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.

Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:

 - a. A site specific permit must be obtained for each operating location, including application sites.
 - b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

1. Best Management Practices include agronomic loading rates, soil conservation practices and other site restrictions.
2. Biosolids means organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge.
3. Biosolids land application facility is a facility where biosolids are spread onto the land at agronomic rates for production of food or fiber. The facility includes any structures necessary to store the biosolids until soil, weather, and crop conditions are favorable for land application.
4. Class A biosolids means a material that has met the Class A pathogen reduction requirements or equivalent treatment by a Process to Further Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
5. Class B biosolids means a material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PFRP) in accordance with 40 CFR 503.
6. Domestic wastewater means wastewater originating from the sanitary conveniences of residences, commercial buildings, factories and institutions; or co-mingled sanitary and industrial wastewater processed by a (POTW) or a privately owned facility.
7. Industrial wastewater means any wastewater, also known as process water, not defined as domestic wastewater. Per 40 CFR Part 122, process water means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.
8. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include wastewater treatment lagoons and constructed wetlands for wastewater treatment.
9. Operating location as defined in 10 CSR 20-2.010 is all contiguous lands owned, operated or controlled by one (1) person or by two (2) or more persons jointly or as tenants in common.
10. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the growing seasons after biosolids application.
11. Public contact site is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.
12. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks or equivalent facilities. Sludge does not include carbon coal byproducts (CCBs)
13. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen basin that receives sludge that has been removed from a wastewater treatment facility. It does not include a wastewater treatment lagoon or sludge treatment units that are not a part of a mechanical wastewater treatment facility.
14. Septage is the material pumped from residential septic tanks and similar treatment works (with a design population of less than 150 people). The standard for biosolids from septage is different from other sludges.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and sludge conditions of this permit.
2. The permittee shall operate the facility so that there is no sludge discharged to waters of the state.
3. Mechanical treatment plants shall have separate sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove sludge from these storage compartments on the required design schedule is a violation of this permit.

SECTION D – SLUDGE DISPOSED AT OTHER TREATMENT FACILITY OR CONTRACT HAULER

1. This section applies to permittees that haul sludge to another treatment facility for disposal or use contract haulers to remove and dispose of sludge.
2. Permittees that use contract haulers are responsible for compliance with all the terms of this permit including final disposal, unless the hauler has a separate permit for sludge or biosolids disposal issued by the Department; or the hauler transports the sludge to another permitted treatment facility.
3. Haulers who land apply septage must obtain a state permit.
4. Testing of sludge, other than total solids content, is not required if sludge is hauled to a municipal wastewater treatment facility or other permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous with 10 CSR 25.
3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored, and ash used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.
2. Sludge storage lagoons are temporary facilities and are not required to obtain a permit as a solid waste management facility under 10 CSR 80. In order to maintain sludge storage lagoons as storage facilities, accumulated sludge must be removed routinely, but not less than once every two years unless an alternate schedule is approved in the permit. The amount of sludge removed will be dependent on sludge generation and accumulation in the facility. Enough sludge must be removed to maintain adequate storage capacity in the facility.
 - a. In order to avoid damage to the lagoon seal during cleaning, the permittee may leave a layer of sludge on the bottom of the lagoon, upon prior approval of the Department; or
 - b. Permittee shall close the lagoon in accordance with Section H.

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee's land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
 - a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
 - b. This permit authorizes "Class A or B" biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites:

Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.

 - a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
 - b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.
6. Agricultural and Silvicultural Sites:

Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri

 - a. Haulers that land apply septage must obtain a state permit
 - b. Do not apply more than 30,000 gallons of septage per acre per year.
 - c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
 - d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
 - e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.

Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

- a. Biosolids shall be monitored to determine the quality for regulated pollutants
- b. The number of samples taken is directly related to the amount of sludge produced by the facility (See Section I of these Standard Conditions). Report as dry weight unless otherwise specified in the site specific permit. Samples should be taken only during land application periods. When necessary, it is permissible to mix biosolids with lower concentrations of biosolids as well as other suitable Department approved material to reach the maximum concentration of pollutants allowed.
- c. Table 1 gives the maximum concentration allowable to protect water quality standards

TABLE 1

Biosolids ceiling concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

¹ Land application is not allowed if the sludge concentration exceeds the maximum limits for any of these pollutants

- d. The low metal concentration biosolids has reduced requirements because of its higher quality and can safely be applied for 100 years or longer at typical agronomic loading rates. (See Table 2)

TABLE 2

Biosolids Low Metal Concentration ¹	
Pollutant	Milligrams per kilogram dry weight
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	36
Zinc	2,800

¹ You may apply low metal biosolids without tracking cumulative metal limits, provided the cumulative application of biosolids does not exceed 500 dry tons per acre.

- e. Each pollutant in Table 3 has an annual and a total cumulative loading limit, based on the allowable pounds per acre for various soil categories.

TABLE 3

Pollutant	CEC 15+		CEC 5 to 15		CEC 0 to 5	
	Annual	Total ¹	Annual	Total ¹	Annual	Total ¹
Arsenic	1.8	36.0	1.8	36.0	1.8	36.0
Cadmium	1.7	35.0	0.9	9.0	0.4	4.5
Copper	66.0	1,335.0	25.0	250.0	12.0	125.0
Lead	13.0	267.0	13.0	267.0	13.0	133.0
Mercury	0.7	15.0	0.7	15.0	0.7	15.0
Nickel	19.0	347.0	19.0	250.0	12.0	125.0
Selenium	4.5	89.0	4.5	44.0	1.6	16.0
Zinc	124.0	2,492.0	50.0	500.0	25.0	250.0

¹ Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)

TABLE 4 - Guidelines for land application of other trace substances ¹

Cumulative Loading	
Pollutant	Pounds per acre
Aluminum	4,000 ²
Beryllium	100
Cobalt	50
Fluoride	800
Manganese	500
Silver	200
Tin	1,000
Dioxin	(10 ppt in soil) ³
Other	⁴

¹ Design of land treatment systems for Industrial Waste, 1979. Michael Ray Overcash, North Carolina State University and Land Treatment of Municipal Wastewater, EPA 1981.)

² This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.

³ Total Dioxin Toxicity Equivalents (TEQ) in soils, based on a risk assessment under 40 CFR 744, May 1998.

⁴ Case by case review. Concentrations in sludge should not exceed the 95th percentile of the National Sewage Sludge Survey, EPA, January 2009.

Best Management Practices – Based on Water Quality guide 426 (WQ426) published by the University of Missouri

- a. Use best management practices when applying biosolids.
- b. Biosolids cannot discharge from the land application site
- c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
- d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
- e. Do not apply more than the agronomic rate of nitrogen needed.
- f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - i. PAN can be determined as follows and is in accordance with WQ426
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
- g. Buffer zones are as follows:
 - i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
 - ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
 - iii. 150 feet if dwellings;
 - iv. 100 feet of wetlands or permanent flowing streams;
 - v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.
- h. Slope limitation for application sites are as follows;
 - i. A slope 0 to 6 percent has no rate limitation
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
 - iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
- i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
- k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
 - a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
 - b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
 - i. PAN can be determined as follows:
$$(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor}^1).$$

¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
 - a. Testing for metals or fecal coliform is not required
 - b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
 - c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
 - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
 - b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
 - c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

- At a minimum, sludge or biosolids shall be tested for volume and percent total solids on a frequency that will accurately represent sludge quantities produced and disposed. Please see the table below.

TABLE 5

Design Sludge Production (dry tons per year)	Monitoring Frequency (See Notes 1, 2, and 3)			
	Metals, Pathogens and Vectors	Nitrogen TKN ¹	Nitrogen PAN ²	Priority Pollutants and TCLP ³
0 to 100	1 per year	1 per year	1 per month	1 per year
101 to 200	biannual	biannual	1 per month	1 per year
201 to 1,000	quarterly	quarterly	1 per month	1 per year
1,001 to 10,000	1 per month	1 per month	1 per week	-- ⁴
10,001 +	1 per week	1 per week	1 per day	-- ⁴

¹ Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.

² Calculate plant available nitrogen (PAN) when either of the following occurs: 1) when biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.

³ Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) and toxicity characteristic leaching procedure (40 CFR 261.24) is required only for permit holders that must have a pre-treatment program.

⁴ One sample for each 1,000 dry tons of sludge.

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids.

This data shall be used to calculate the dry tons of sludge applied per acre.

Note 2: Total Phosphorus: Total phosphorus and total potassium shall be tested at the same monitoring frequency as metals.

Note 3: Table 5 is not applicable for incineration and permit holders that landfill their sludge.

- If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.
- Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the Department.
- At this time, the Department recommends monitoring requirements shall be performed in accordance with, "POTW Sludge Sampling and Analysis Guidance Document," United States Environmental Protection Agency, August 1989, and the subsequent revisions.

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

- The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
- Reporting period
 - By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
 - Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.
- Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.
- Reports shall be submitted as follows:

Major facilities (those serving 10,000 persons or 1 million gallons per day) shall report to both the Department and EPA. Other facilities need to report only to the Department. Reports shall be submitted to the addresses listed as follows:

DNR regional office listed in your permit
(see cover letter of permit)
ATTN: Sludge Coordinator

EPA Region VII
Water Compliance Branch (WACM)
Sludge Coordinator
11201 Renner Blvd.
Lenexa, KS 66219

5. Annual report contents. The annual report shall include the following:
- a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
 - b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
 - c. Gallons and % solids data used to calculate the dry ton amounts.
 - d. Description of any unusual operating conditions.
 - e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
 - i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
 - ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
 - f. Contract Hauler Activities:
If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
 - g. Land Application Sites:
 - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
 - iii. Report the method used for compliance with pathogen and vector attraction requirements.
 - iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM A – APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI
CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	300414
DATE RECEIVED	4-4-19
FEE SUBMITTED	\$1250.00
JET PAY CONFIRMATION NUMBER	

PLEASE READ ALL THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.
SUBMITTAL OF AN INCOMPLETE APPLICATION MAY RESULT IN THE APPLICATION BEING RETURNED.

IF YOUR FACILITY IS ELIGIBLE FOR A NO EXPOSURE EXEMPTION:

Fill out the No Exposure Certification Form (Mo 780-2828): <https://dnr.mo.gov/forms/780-2828-f.pdf>

1. REASON FOR APPLICATION:

- ☐ a. This facility is now in operation under Missouri State Operating Permit (permit) MO – _____, is submitting an application for renewal, and there is no proposed increase in design wastewater flow. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.
- ☐ b. This facility is now in operation under permit MO – _____, is submitting an application for renewal, and there is a proposed increase in design wastewater flow. Antidegradation Review may be required. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.
- ☐ c. This is a facility submitting an application for a new permit (for a new facility). Antidegradation Review may be required. New permit fee is required.
- ☒ d. This facility is now in operation under Missouri State Operating Permit (permit) MO – 0126713 and is requesting a modification to the permit. Antidegradation Review may be required. Modification fee is required.

2. FACILITY

NAME State Line Combined Cycle Power Plant		TELEPHONE NUMBER WITH AREA CODE (417) 623-0102	
ADDRESS (PHYSICAL) 2299 S. State Line Ave	CITY Joplin	STATE MO	ZIP CODE 64804

3. OWNER

NAME Empire District Electric Company		TELEPHONE NUMBER WITH AREA CODE (417) 625-5100	
EMAIL ADDRESS kstull@empiredistrict.com			
ADDRESS (MAILING) PO Box 127	CITY Joplin	STATE MO	ZIP CODE 64802

4. CONTINUING AUTHORITY

NAME Liberty Power Corporation		TELEPHONE NUMBER WITH AREA CODE (905) 465-4500	
EMAIL ADDRESS			
ADDRESS (MAILING) 354 Davis Road	CITY Oakville, Ontario, Canada	STATE	ZIP CODE L6J2X1

5. OPERATOR CERTIFICATION

NAME Not Applicable	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME Brian Berkstresser	TITLE Plant Manager - SLCC	TELEPHONE NUMBER WITH AREA CODE (417) 623-0102	
E-MAIL ADDRESS brian.berkstresser@libertyutilities.com			

7. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary.

NAME Owens-Corning Mineral Wool			
ADDRESS 1983 S State Line Ave	CITY Joplin	STATE MO	ZIP CODE 64804

8. ADDITIONAL FACILITY INFORMATION

8.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)
For Universal Transverse Mercator (UTM), use Zone 15 North referenced to North American Datum 1983 (NAD83)

001

NE 1/4

NW 1/4

Sec 14

T 27N

R 34W

Jasper County

UTM Coordinates Easting (X): 356671 Northing (Y): 4103635

002

NW 1/4

SW 1/4

Sec 14

T 27N

R 34W

Jasper County

UTM Coordinates Easting (X): 356482 Northing (Y): 4103154

003

NW 1/4

NW 1/4

Sec 14

T 27N

R 34W

Jasper County

UTM Coordinates Easting (X): 356308 Northing (Y): 4103641

004

NW 1/4

NW 1/4

Sec 23

T 27N

R 34W

Jasper County

UTM Coordinates Easting (X): 356376 Northing (Y): 4102283

8.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.
Primary SIC 4911 and NAICS 221112 SIC 4911 and NAICS 221112
SIC 4911 and NAICS 221112 SIC 4911 and NAICS 221112

9. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION

A.

Is this permit for a manufacturing, commercial, mining, solid/hazardous waste, or silviculture facility? YES ☐ NO ☒

If yes, complete Form C.

B.

Is the facility considered a "Primary Industry" under EPA guidelines (40 CFR Part 122, Appendix A) : YES ☐ NO ☒

If yes, complete Forms C and D.

C.

Is wastewater land applied?
If yes, complete Form I.

YES ☐ NO ☒

D.

Are sludge, biosolids, ash, or residuals generated, treated, stored, or land applied?
If yes, complete Form R.

YES ☐ NO ☒

E.

Have you received or applied for any permit or construction approval under the CWA or any other environmental regulatory authority?
If yes, please include a list of all permits or approvals for this facility.

YES ☒ NO ☐

F.

Do you use cooling water in your operations at this facility?
If yes, please indicate the source of the water: groundwater, purchased domestic water, rainfall

YES ☒ NO ☐

G.

Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent limits and monitoring shall be submitted by the permittee via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data. **One of the following must be checked in order for this application to be considered complete.** Please visit <http://dnr.mo.gov/env/wpp/edmr.htm> to access the Facility Participation Package.

☐ - You have completed and submitted with this permit application the required documentation to participate in the eDMR system.

☒ - You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.

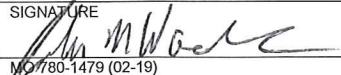
☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

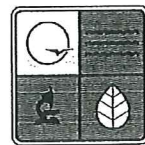
11. FEES

Permit fees may be paid by attaching a check, or online by credit card or eCheck through the JetPay system. Use the URL provided to access JetPay and make an online payment: <https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/>

12. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) John M. Woods, Central Regional Director of Generation Operations	TELEPHONE NUMBER WITH AREA CODE (417) 625 5100
SIGNATURE 	DATE SIGNED 4/2/2019



Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch
Engineering Section

Antidegradation Applicability Review

FACILITY INFORMATION

FACILITY NAME: Empire—State Line Combined Cycle Power Plant PERMIT #: MO-0126713

COUNTY: Jasper UTM COORDINATES: X=356671 / Y=4103635 (Outfall 001)

12-DIGIT HUC: 11070207-0904 LEGAL DESCRIPTION: NE¼, NW¼, Sec. 14, T72N, R34W

EDU*: Ozarks (Neosho) ECOREGION: Springfield Plain

*Ecological Drainage Unit

OUTFALL CHARACTERISTICS

OUTFALL	DESIGN FLOW (MGD)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO SEGMENT (MI)
001	1.307	Oil/water separator, neutralization, chlorination/de-chlorination	Steam cycle drains, chemical waste sump, cooling tower blowdown, cooling tower drains, steam cycle bed and quench water, transformer drains, stormwater	0
002	7.077	Oil/water separator, settling	Stormwater	0
003	8.455	Settling	Stormwater	0
004	7.436	No treatment	Cooling water overflow	0

RECEIVING WATERBODY INFORMATION

WATERBODY NAME: Short Creek CLASS: n/a

Short Creek – Kansas CLASS: P

PROJECT INFORMATION

DESCRIPTION: The Empire-State Line Combined Cycle Power Plant is an electrical power generating facility located in Jasper County near Joplin, Missouri. The Plant consists of three electrical generating units, two combustion turbines, one steam turbine, and one simple-cycle combustion turbine. Currently, Outfall #001 consists of discharges from the cooling tower blowdown, miscellaneous steam cycle drains, chemical waste pump, steam cycle blowdown and quench, unit 2-3 transformer containment and cooling tower drains, and stormwater runoff from the plants northeast area. The daily average flow of Outfall #001 is 0.219 million gallons per day (MGD), and the design average flow is 1.307 MGD.

PROPOSAL:	<p>According to a submittal dated February 15, 2019, the facility is proposing to reduce water usage and water treatment costs at the Plant by diverting demineralization/reverse osmosis (RO) reject water to the plant's cooling tower, which would then be discharged to Outfall #001. Water for the RO system is obtained onsite from deep wells, and currently 19,000 gallons per day (GPD) of RO reject water is discharged to the Galena Wastewater Treatment Facility.</p>
DISCUSSION:	<p>The reuse of the RO reject water at the Plant's cooling tower is a process flow change, which would increase the number of water sources available for use at the cooling tower. Currently, water from onsite deep wells and domestic water purchased from Missouri American Water are the primary water sources to the Plant's cooling tower. Water used at the cooling tower is collected in a storage tank prior to use, and pumps are manually operated to refill the storage tank when a low-level operating range is reached. The cooling tower will not be utilizing an increased amount of water, as the pipes from the storage tank to the cooling tower will remain the same. Therefore, the design average flow of Outfall #001 will remain 1.307 MGD; however, the number of water sources to the cooling tower storage tank would increase.</p> <p>As the RO reject water is sourced from the Plant's deep wells and the deep wells are an existing primary source for the cooling tower water, the pollutants of concern (POCs) associated with the proposed process flow change are all currently regulated in the facility's Missouri State Operating Permit (MSOP) effective September 1, 2018. The current MSOP is protective of the beneficial uses of the receiving water body.</p> <p>Lastly, the reuse of the RO reject water at the plant's cooling tower demonstrates best management practices by reducing the plant's water consumption and conserving groundwater. Reducing purchased water consumption will also help keep rates low to the utility customers.</p>
DETERMINATION:	<p>The proposed upgrade will not require an antidegradation review according to <i>Missouri Antidegradation Rule and Implementation Procedure</i>. The proposed project does not constitute a new or expanded discharge as the design average flow of Outfall #001 will remain 1.307 MGD.</p>

Reviewer: Ellen Modglin
Date: March 13, 2019
Unit Chief: John Rustige, P.E.



FIGURE 1 T27N, R34W, Sec. 14
Joplin West USGS Quadrangle

