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-0004979
Owner:	City of Columbia
Address:	701 East Broadway, Columbia MO 65201
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Columbia Municipal Power Plant
Facility Address:	1501 Business Loop 70 East, Columbia MO 65201
Legal Description:	Landgrant 02753, Boone County
UTM Coordinates:	Outfall #001: X = 559182, Y = 4313016; Outfall #002: X = 559024, Y = 4313222
Receiving Stream:	Tributary to 8-20-13 MUDD V1.0
First Classified Stream and ID:	8-20-13 MUDD V.1.0 (C) WBID# 3960
USGS Basin & Sub-watershed No.:	Rocky Fork Creek 10300102-0706

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

FACILITY DESCRIPTION

Steam electric power generation for sale; SIC #4911; NAICS # 221112 (natural gas); a certified wastewater operator is not required; domestic wastewater is routed to the City of Columbia's WWTF. Facility discontinued burning coal in 2015. Natural gas will continue to be a fuel source along with plans to convert a portion of fuel to biofuels around 2020.

OUTFALL #001: boiler 8 evaporator and cooling tower blowdown, cooling tower overflow, former coal pile area runoff (coal removed), stormwater
Design Flow: 0.075 MGD; Average Flow: 0.19 MGD

OUTFALL #002: boiler 7 & 8 evaporator and blowdown, zeolite softener wastewater, reverse osmosis wastewater, miscellaneous water uses, cleaning, plant drains, cooling tower blowdown (east and west), and stormwater; undergoes settling in Mores Lake.
Design Flow: 0.87 MGD; Average Flow: 0.267 MGD

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.

September 1, 2018
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

August 31, 2023
Expiration Date

Chris Wieberg, Director, Water Protection Program

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALLS #001 *process wastewater (dry weather)*	**TABLE A-1** **INTERIM 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 interim effluent limitations shall become effective on **September 1, 2018** and remain in effect through **August 31, 2022**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:				
EFFLUENT PARAMETERS	UNITS	INTERIM EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
PHYSICAL					
Flow	MGD	*	*	once/month	24 hr. total
Temperature	°F	*	*	once/month	grab
CONVENTIONAL					
Chlorine/Bromine, Total Residual (Note 2)	µg/L	17 (ML130)	8 (ML130)	once/month	grab
Cyanide, Amenable (CATC) (Note 3)	µg/L	*	*	once/month	grab
Oil & Grease	mg/L	15	10	once/month	grab
pH (Note 1)	SU	6.5 to 9.0	6.5 to 9.0	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
METALS					
Arsenic, Total Recoverable	µg/L	*	*	once/month	grab
Copper, Total Recoverable	µg/L	*	*	once/month	grab
Selenium, Total Recoverable	µg/L	*	*	once/month	grab
OTHER					
Chloride	mg/L	377.8	188.3	once/month	grab
Chloride plus Sulfate	mg/L	1000	1000	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE OCTOBER 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Antimony, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Beryllium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Cadmium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Chromium III, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Chromium VI, Dissolved	µg/L	*	*	once/quarter ϕ	grab
Iron, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Lead, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Mercury, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Nickel, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Thallium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Zinc, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALLS #001 *process wastewater (dry weather)*	**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, 2022** 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 hr. total
Temperature	°F	*	*	once/month	grab
CONVENTIONAL					
Chlorine/Bromine, Total Residual (Note 2)	µg/L	17 (ML130)	8 (ML130)	once/month	grab
Cyanide, Amenable (CATC) (Note 3)	µg/L	*	*	once/month	grab
Oil & Grease	mg/L	15	10	once/month	grab
pH (Note 1)	SU	6.5 to 9.0	6.5 to 9.0	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
METALS					
Arsenic, Total Recoverable	µg/L	32.8	16.4	once/month	grab
Copper, Total Recoverable	µg/L	47.2	23.5	once/month	grab
Selenium, Total Recoverable	µg/L	8.2	4.1	once/month	grab
OTHER					
Chloride	mg/L	377.8	188.3	once/month	grab
Chloride plus Sulfate	mg/L	1000	1000	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE OCTOBER 28, 2022. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Antimony, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Beryllium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Cadmium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Chromium III, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Chromium VI, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Iron, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Lead, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Mercury, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Nickel, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Thallium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Zinc, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2023. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #001 *stormwater (wet weather)*	**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
PHYSICAL					
Flow	MGD	*	*	once/quarter ϕ	24 hr. est.
CONVENTIONAL					
Chemical Oxygen Demand	mg/L	*	*	once/quarter ϕ	grab
Oil & Grease	mg/L	15	*	once/quarter ϕ	grab
pH (Note 1)	SU	6.5 to 9.0	*	once/quarter ϕ	grab
Total Suspended Solids	mg/L	100	*	once/quarter ϕ	grab
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Arsenic, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Chromium III, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Copper, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Selenium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Zinc, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
OTHER				once/quarter ϕ	
Chloride	mg/L	377.8	*	once/quarter ϕ	grab
Chloride plus Sulfate	mg/L	1000	*	once/quarter ϕ	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.
THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #002 *process wastewater*	**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
PHYSICAL					
Flow	MGD	*	*	once/month	24 hr. total
Hardness as $CaCO_3$	mg/L	*	*	once/month	grab
Temperature	°F	*	*	once/month	grab
CONVENTIONAL					
Chemical Oxygen Demand	mg/L	*	*	once/month	grab
Chlorine/Bromine, Total Residual (Note 2)	µg/L	17 (ML130)	8 (ML130)	once/month	grab
Cyanide, Amenable (CATC) (Note 3)	µg/L	*	*	once/month	grab
Oil & Grease	mg/L	15	10	once/month	grab
pH (Note 1)	SU	6.5 to 9.0	6.5 to 9.0	once/month	grab
Total Suspended Solids	mg/L	100	30	once/month	grab
METALS					
Copper, Total Recoverable	µg/L	40.6	15.8	once/month	grab
Iron, Total Recoverable	µg/L	1000	627.6	once/month	grab
OTHER					
Chloride	mg/L	377.8	188.3	once/month	grab
Chloride plus Sulfate	mg/L	1000	1000	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE OCTOBER 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
METALS					
Aluminum, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Antimony, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Arsenic, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Beryllium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Cadmium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Chromium III, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Chromium VI, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Lead, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Mercury, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Nickel, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Selenium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Thallium, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
Zinc, Total Recoverable	µg/L	*	*	once/quarter ϕ	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2019. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
ANNUAL MONITORING					
WET Test, Chronic (Special Condition #1)	TUc	*	-	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2020.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #CTE & #CTW *cooling tower blowdown*	**TABLE A-5** **INTERIM 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 interim effluent limitations shall become effective on **September 1, 2018** and remain in effect through **August 31, 2019**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	UNITS	INTERIM 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 (Note 5)	µg/L	500	200	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE OCTOBER 28, 2018.

PERMITTED FEATURE #CTE & #CTW *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, 2019** 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	*	*	continuously	24 hour total
CONVENTIONAL					
Chlorine/Bromine Free Available (Note 5)	µg/L	500	200	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE OCTOBER 28, 2018.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

PERMITTED FEATURE #CTE & #CTW *cooling tower blowdown*	**TABLE A-7** **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	NOTE 4	-	once/year	grab
(002) Acrolein	µg/L	NOTE 4	-	once/year	grab
(003) Acrylonitrile	µg/L	NOTE 4	-	once/year	grab
(004) Benzene	µg/L	NOTE 4	-	once/year	grab
(005) Benzidine	µg/L	NOTE 4	-	once/year	grab
(006) Carbon tetrachloride (tetrachnolomethane)	µg/L	NOTE 4	-	once/year	grab
(007) Chlorobenzene	µg/L	NOTE 4	-	once/year	grab
(008) 1,2,4-trichlorobenzene	µg/L	NOTE 4	-	once/year	grab
(009) Hexachlorobenzene	µg/L	NOTE 4	-	once/year	grab
(010) 1,2-dichloroethane	µg/L	NOTE 4	-	once/year	grab
(011) 1,1,1-trichloroethane	µg/L	NOTE 4	-	once/year	grab
(012) Hexachloroethane	µg/L	NOTE 4	-	once/year	grab
(013) 1,1-dichloroethane	µg/L	NOTE 4	-	once/year	grab
(014) 1,1,2-trichloroethane	µg/L	NOTE 4	-	once/year	grab
(015) 1,1,2,2,-tetrachloroethane	µg/L	NOTE 4	-	once/year	grab
(016) Chloroethane	µg/L	NOTE 4	-	once/year	grab
(018) Bis(2-chloroethyl) ether	µg/L	NOTE 4	-	once/year	grab
(019) 2-chloroethyl vinyl ether (mixed)	µg/L	NOTE 4	-	once/year	grab
(020) 2-chloronaphthalene	µg/L	NOTE 4	-	once/year	grab
(021) 2,4,6-trichlorophenol	µg/L	NOTE 4	-	once/year	grab
(022) Parachlorometa cresol	µg/L	NOTE 4	-	once/year	grab
(023) Chloroform (trichloromethane)	µg/L	NOTE 4	-	once/year	grab
(024) 2-chlorophenol	µg/L	NOTE 4	-	once/year	grab
(025) 1,2-dichlorobenzene	µg/L	NOTE 4	-	once/year	grab
(026) 1,3-dichlorobenzene	µg/L	NOTE 4	-	once/year	grab
(027) 1,4-dichlorobenzene	µg/L	NOTE 4	-	once/year	grab
(028) 3,3-dichlorobenzidine	µg/L	NOTE 4	-	once/year	grab
(029) 1,1-dichloroethylene	µg/L	NOTE 4	-	once/year	grab
(030) 1,2-trans-dichloroethylene	µg/L	NOTE 4	-	once/year	grab
(031) 2,4-dichlorophenol	µg/L	NOTE 4	-	once/year	grab
(032) 1,2-dichloropropane	µg/L	NOTE 4	-	once/year	grab
(033) 1,2-dichloropropylene (1,2-dichloropropene)	µg/L	NOTE 4	-	once/year	grab
(034) 2,4-dimethylphenol	µg/L	NOTE 4	-	once/year	grab
(035) 2,4-dinitrotoluene	µg/L	NOTE 4	-	once/year	grab
(036) 2,6-dinitrotoluene	µg/L	NOTE 4	-	once/year	grab
(037) 1,2-diphenylhydrazine	µg/L	NOTE 4	-	once/year	grab
(038) Ethylbenzene	µg/L	NOTE 4	-	once/year	grab
(039) Fluoranthene	µg/L	NOTE 4	-	once/year	grab
(040) 4-chlorophenyl phenyl ether	µg/L	NOTE 4	-	once/year	grab
(041) 4-bromophenyl phenyl ether	µg/L	NOTE 4	-	once/year	grab
(042) Bis(2-chloroisopropyl) ether	µg/L	NOTE 4	-	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 #CTE & #CTW *cooling tower blowdown*	**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	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
126 PRIORITY POLLUTANTS					
(043) Bis(2-chloroethoxy) methane	µg/L	NOTE 4	-	once/year	grab
(044) Methylene chloride (dichloromethane)	µg/L	NOTE 4	-	once/year	grab
(045) Methyl chloride (chloromethane)	µg/L	NOTE 4	-	once/year	grab
(046) Methyl bromide (bromomethane)	µg/L	NOTE 4	-	once/year	grab
(047) Bromoform (tribromomethane)	µg/L	NOTE 4	-	once/year	grab
(048) Dichlorobromomethane	µg/L	NOTE 4	-	once/year	grab
(051) Chlorodibromomethane	µg/L	NOTE 4	-	once/year	grab
(052) Hexachlorobutadiene	µg/L	NOTE 4	-	once/year	grab
(053) Hexachlorocyclopentadiene	µg/L	NOTE 4	-	once/year	grab
(054) Isophorone	µg/L	NOTE 4	-	once/year	grab
(055) Naphthalene	µg/L	NOTE 4	-	once/year	grab
(056) Nitrobenzene	µg/L	NOTE 4	-	once/year	grab
(057) 2-nitrophenol	µg/L	NOTE 4	-	once/year	grab
(058) 4-nitrophenol	µg/L	NOTE 4	-	once/year	grab
(059) 2,4-dinitrophenol	µg/L	NOTE 4	-	once/year	grab
(060) 4,6-dinitro-o-cresol	µg/L	NOTE 4	-	once/year	grab
(061) N-nitrosodimethylamine	µg/L	NOTE 4	-	once/year	grab
(062) N-nitrosodiphenylamine	µg/L	NOTE 4	-	once/year	grab
(063) N-nitrosodi-n-propylamine	µg/L	NOTE 4	-	once/year	grab
(064) Pentachlorophenol	µg/L	NOTE 4	-	once/year	grab
(065) Phenol	µg/L	NOTE 4	-	once/year	grab
(066) Bis(2-ethylhexyl) phthalate	µg/L	NOTE 4	-	once/year	grab
(067) Butyl benzyl phthalate	µg/L	NOTE 4	-	once/year	grab
(068) Di-N-Butyl Phthalate	µg/L	NOTE 4	-	once/year	grab
(069) Di-n-octyl phthalate	µg/L	NOTE 4	-	once/year	grab
(070) Diethyl Phthalate	µg/L	NOTE 4	-	once/year	grab
(071) Dimethyl phthalate	µg/L	NOTE 4	-	once/year	grab
(072) 1,2-benzanthracene (benzo(a) anthracene)	µg/L	NOTE 4	-	once/year	grab
(073) Benzo(a)pyrene (3,4-benzo-pyrene)	µg/L	NOTE 4	-	once/year	grab
(074) 3,4-benzofluroanthene (benzo(b) fluoranthene)	µg/L	NOTE 4	-	once/year	grab
(075) 11,12-benzofluoranthene (benzo(k) fluoranthene)	µg/L	NOTE 4	-	once/year	grab
(076) Chrysene	µg/L	NOTE 4	-	once/year	grab
(077) Acenaphthylene	µg/L	NOTE 4	-	once/year	grab
(078) Anthracene	µg/L	NOTE 4	-	once/year	grab
(079) 1,12-benzoperylene (benzo(ghi) perylene)	µg/L	NOTE 4	-	once/year	grab
(080) Fluorene	µg/L	NOTE 4	-	once/year	grab
(081) Phenanthrene	µg/L	NOTE 4	-	once/year	grab
(082) 1,2,5,6-dibenzanthracene (dibenzo(a,h) anthracene)	µg/L	NOTE 4	-	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 #CTE & #CTW *cooling tower blowdown*	**TABLE A-9** **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					
(083) Indeno (1,2,3-cd) pyrene (2,3-o-phenylene pyrene)	µg/L	NOTE 4	-	once/year	grab
(084) Pyrene	µg/L	NOTE 4	-	once/year	grab
(085) Tetrachloroethylene	µg/L	NOTE 4	-	once/year	grab
(086) Toluene	µg/L	NOTE 4	-	once/year	grab
(087) Trichloroethylene	µg/L	NOTE 4	-	once/year	grab
(088) Vinyl chloride (chloroethylene)	µg/L	NOTE 4	-	once/year	grab
(089) Aldrin	µg/L	NOTE 4	-	once/year	grab
(090) Dieldrin	µg/L	NOTE 4	-	once/year	grab
(091) Chlordane (technical mixture and metabolites)	µg/L	NOTE 4	-	once/year	grab
(092) 4,4'-DDT	µg/L	NOTE 4	-	once/year	grab
(093) 4,4'-DDE (p,p-DDX)	µg/L	NOTE 4	-	once/year	grab
(094) 4,4'-DDD (p,p-TDE)	µg/L	NOTE 4	-	once/year	grab
(095) Alpha-endosulfan	µg/L	NOTE 4	-	once/year	grab
(096) Beta-endosulfan	µg/L	NOTE 4	-	once/year	grab
(097) Endosulfan sulfate	µg/L	NOTE 4	-	once/year	grab
(098) Endrin	µg/L	NOTE 4	-	once/year	grab
(099) Endrin aldehyde	µg/L	NOTE 4	-	once/year	grab
(100) Heptachlor	µg/L	NOTE 4	-	once/year	grab
(101) Heptachlor epoxide (BHC-hexachlorocyclohexane)	µg/L	NOTE 4	-	once/year	grab
(102) Alpha-BHC	µg/L	NOTE 4	-	once/year	grab
(103) Beta-BHC	µg/L	NOTE 4	-	once/year	grab
(104) Gamma-BHC (lindane)	µg/L	NOTE 4	-	once/year	grab
(105) Delta-BHC	µg/L	NOTE 4	-	once/year	grab
(106) PCB-1242 (Arochlor 1242)	µg/L	NOTE 4	-	once/year	grab
(107) PCB-1254 (Arochlor 1254)	µg/L	NOTE 4	-	once/year	grab
(108) PCB-1221 (Arochlor 1221)	µg/L	NOTE 4	-	once/year	grab
(109) PCB-1232 (Arochlor 1232)	µg/L	NOTE 4	-	once/year	grab
(110) PCB-1248 (Arochlor 1248)	µg/L	NOTE 4	-	once/year	grab
(111) PCB-1260 (Arochlor 1260)	µg/L	NOTE 4	-	once/year	grab
(112) PCB-1016 (Arochlor 1016)	µg/L	NOTE 4	-	once/year	grab
(113) Toxaphene	µg/L	NOTE 4	-	once/year	grab
(114) Antimony, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(115) Arsenic, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(116) Asbestos, as total fibers	fibers/L	NOTE 4	-	once/year	grab
(117) Beryllium, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(118) Cadmium, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(119) Chromium, Total Recoverable	µg/L	200	200	once/year	grab
(120) Copper, Total Recoverable	µg/L	NOTE 4	-	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 #CTE & #CTW *cooling tower blowdown*	**TABLE A-10** **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					
(121) Cyanide, Total	µg/L	NOTE 4	-	once/year	grab
(122) Lead, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(123) Mercury, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(124) Nickel, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(125) Selenium, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(126) Silver, Total Recoverable	µg/L	NOTE 4	-	once/year	grab
(127) Thallium, Total Recoverable	µg/L	NOTE 4	-	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	NOTE 4	-	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.					

Note 1 The facility will report the minimum and maximum values; pH is not to be averaged.

Note 2 This permit contains a Total Residual Chlorine (TRC)/Total Residual Bromine (TRB) limit. This effluent limit is below the minimum quantification level (ML) of the most sensitive EPA approved CLTRC methods which measure total residual halogens. 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 or bromine in excess of the effluent limits stated in the permit. The permittee will enter analysis in eDMR for TRC as there is no TRC/TRB parameter available. Please see Fact Sheet Part III CHLORINE/BROMINE BEST PROFESSIONAL JUDGMENT LIMITATIONS for further information.

Note 3 This permit contains a cyanide amenable to chlorination (CATC) monitoring requirement. The department has determined the current acceptable minimum level (ML) of cyanide amenable to chlorination to be 10 µg/L when using Method #9102A from the U.S. EPA National Exposure Research Laboratory. This method is used to determine the concentration of inorganic cyanide that is present as either soluble salts or complexes in wastes or leachate. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values.

Note 4 The facility will sample or certify this pollutant is not present in the cooling tower discharge by sampling or providing a narrative. The facility will report "0" for each non-detected or certified absent pollutant. See special condition #6.

Note 5 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.

* Monitoring and reporting requirement only

ϕ 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 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

B. SCHEDULE OF COMPLIANCE

Schedules of compliance are allowed per 40 CFR 122.47. The facility shall attain compliance with final effluent limitations established in this permit as soon as reasonably achievable:

1. Within 1 year of the effective date of this permit, the permittee shall attain compliance with the final effluent limits at Permitted Features #CTE and #CTW, for: continuous monitoring of flow.

2. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from effective date. The first report is due September 1, 2019.

3. Within 4 years of the effective date of this permit, the permittee shall attain compliance with the final effluent limits at outfall #001, for: total recoverable arsenic, total recoverable copper, and total recoverable selenium.

Please submit progress reports via the electronic reporting system.

C. STANDARD CONDITIONS

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

D. 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) The facility must use discharges from process wastewater without the influence of stormwater.
   (d) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   (e) The Allowable Effluent Concentration (AEC) is 100%, the dilution series is: 100%, 50%, 25%, 12.5%, and 6.25%.
   (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
   (g) 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. Groundwater Monitoring Program: The permittee shall implement an effective groundwater monitoring program designed to determine if the coal ash impoundments have/had an impact on groundwater quality. The monitoring system must be capable of comparing up-gradient to down-gradient water quality in the first continuous water-bearing zone beneath the impoundment. The monitoring system must be based upon a thorough hydrogeological characterization of the impoundment area that determines the appropriate hydrostratigraphic unit to monitor, its groundwater gradient(s) and any seasonal variations in its gradient(s). Any hydrogeological characterization conducted for the design of the groundwater monitoring program shall be approved by the Department's Missouri Geological Survey and must be conducted under the guidance of a geologist registered in the State of Missouri. The number of monitoring wells required for the groundwater monitoring program shall be based on site-specific hydrogeologic conditions and sufficient for effective monitoring of the site. To complete the following work plans and reports, the Water Protection Program recommends using applicable portions of the document issued by the Missouri Geological Survey (MGS), dated December 10, 2010 (or newer), *(Draft) Guidance for Conducting a Detailed Hydrogeologic Site Characterization and Designing a Groundwater Monitoring Program* as guidance. The plans shall be submitted one electronic copy to the Missouri Department of Natural Resources central office electronically or to The Water Protection Program at P.O. Box 176, Jefferson City MO 65102-9920. In order to accomplish this, the permittee shall:
   (a) By 27 months from the date of issuance of this permit (or sooner) submit a Site Characterization Report detailing the findings from completion of the Site Characterization Workplan to the Central Office for verification of conclusions.
   (b) By 30 months from the date of issuance of this permit (or sooner) submit a draft Groundwater Monitoring, Sampling, and Analysis Plan (GMSAP) to the Central Office for approval.
   (c) By 36 months from the date of issuance of this permit (or sooner) submit a final Groundwater Monitoring, Sampling, and Analysis Plan (GMSAP) to the Central Office for approval. The design of the groundwater monitoring network should be approved by the department prior to installation.
   (d) By 48 months from the date of issuance of this permit (or sooner) have all elements of the GMSAP fully implemented. The facility shall collect groundwater quality samples at a discrete interval (usually quarterly) which must demonstrate each sample is independent and representative of the groundwater being monitored.
   (e) A minimum of 8 groundwater quality samples must be collected prior to the expiration of the permit. If the permittee collects 8 contiguous groundwater samples showing no exceedance for parameters established in Appendix IV per the groundwater protection standards established in 40 CFR §257.95(h), the permittee may cease groundwater monitoring upon approval by the Water Protection Program.

3. 40 CFR 423.13(c)(2): “Neither free available chlorine nor total residual chlorine 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 [Water Protection Program] the units in a particular location cannot operate at or below this level of chlorination.”

4. 40 CFR 423.13(a): There shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly [historically] used for transformer fluid.

D. SPECIAL CONDITIONS (CONTINUED)

5. The facility shall not discharge ash transport wastewater as defined in [FR Vol. 80 No. 212: 11/3/2015; preamble p. 67854, sec. VIII. C. 8.] upon permit issuance.

6. 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-2, A-3, A-4, and A-5. Report "0" for any pollutant not detected by the most sensitive analytical method. 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.

7. The facility must sample process wastewater as designated by "dry weather" discharges and cooling tower blowdown discharges which are sampled through outfall #001 without the influence of stormwater. The facility must wait to sample process wastewater a minimum of 24 hours after any precipitation event has ceased unless stormwater is clearly not flowing through the outfall.

8. 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.
   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: 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.
   (b) 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.
   (c) 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.
   (d) 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.

9. 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.

10. All outfalls must be clearly marked in the field.

11. Report as no-discharge when a discharge does not occur during the report period.

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

D. SPECIAL CONDITIONS (CONTINUED)

13. Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fungicide and Rodenticide Act, as amended (7 U.S.C. 136 *et. seq*.) and the use of such pesticides shall be in a manner consistent with its label.

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. 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).

16. 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.

17. 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 DNR and EPA personnel.

18. Release of a hazardous substance must be reported to the department in accordance with 10 CSR 24-3.010. A record of each reportable spill shall be retained with the SWPPP and made available to the department upon request.

D. SPECIAL CONDITIONS (CONTINUED)

19. The facility's 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 (5) 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.

20. 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.
    (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.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0004979
COLUMBIA MUNICIPAL 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)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: 01/04/2017
Modification Date: 03/12/2014
Expiration Date: 07/05/2017

FACILITY DESCRIPTION:
Power generation for sale using fossil fuels; facility discontinued burning coal in 2015. Natural gas will continue to be a fuel source along with plans to convert a portion of fuel to biofuels around 2020.

PERMITTED FEATURES TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	MAXIMUM FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#001	0.197 MGD	0.075 MGD	1.94 MGD	none	boiler 8 evaporator and cooling tower blowdown, cooling tower overflow, former coal pile area runoff (coal removed), stormwater
#002	0.267 MGD	0.87 MGD	1.85 MGD	settling	boiler 7 & 8 evaporator and blowdown, zeolite softener wastewater, reverse osmosis wastewater, miscellaneous water uses, cleaning, plant drains, cooling tower blowdown (east and west), and stormwater; undergoes settling in Mores Lake

FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last five years. Outfall #001 had the following exceedances: chloride (2), chlorides plus sulfate (2), free available chlorine (3), total residue chlorine (1), pH (2) and total suspended solids (3). Outfall #002 had the following exceedances: chloride (1), copper (2), iron (5), pH (9), TSS (2) and an acute wet test (1). There was no recent inspection on file for this facility.

The previous permit's requirements were based on coal at the site; reasonable potential analysis performed on the data obtained from the outfalls is not representative of current and future operations therefore most permit requirements were maintained at monitoring only. Four notable changes from the previous permit include 1) total suspended solids is no longer based on coal pile runoff and is now based on low volume waste sources; 2) institution of groundwater procedures to evaluate the groundwater at this site; 3) the effluent limitation guideline for iron was applied on outfall #002; and 4) addition of ELG limitations for cooling tower blowdown on outfall #001. This permit does not contain a schedule of compliance because the effluent limitation changes were based on the effluent limitation guideline which should have always been instituted for this permit.

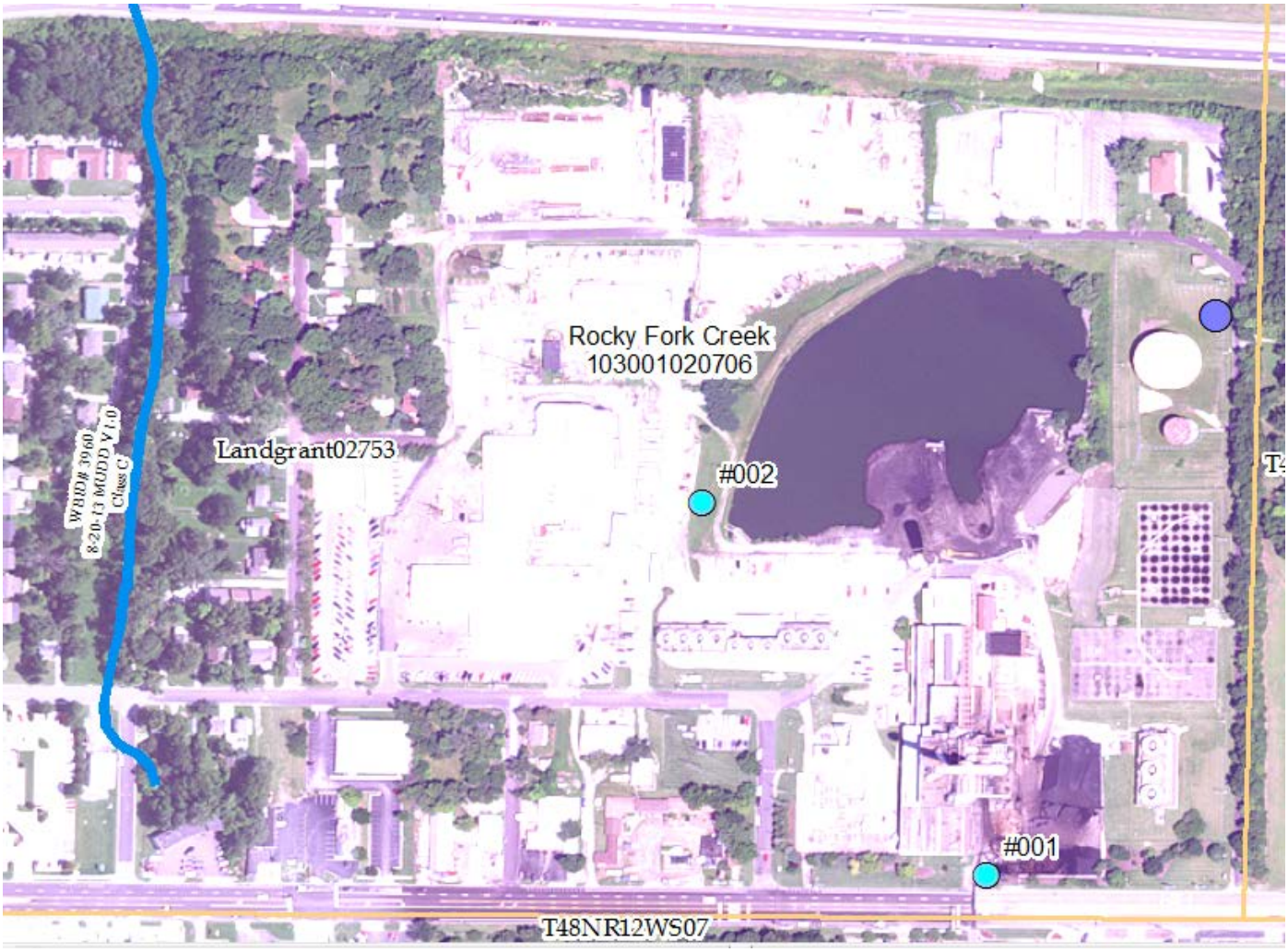
Future upgrades to the facility consist of restoration of Mores Lake and re-routing certain discharges.

CHLORINE AND BROMINE SAMPLING:
In November of 2017, the facility informed the department they were switching from chlorine to bromine for cooling tower disinfection. Bromine was added to the parameters listed in the permit; bromine and chlorine are measured identically as oxidizers in the halogen group. The permit writer has applied water quality and effluent limitation guidelines identically to bromine as are promulgated for chlorine.

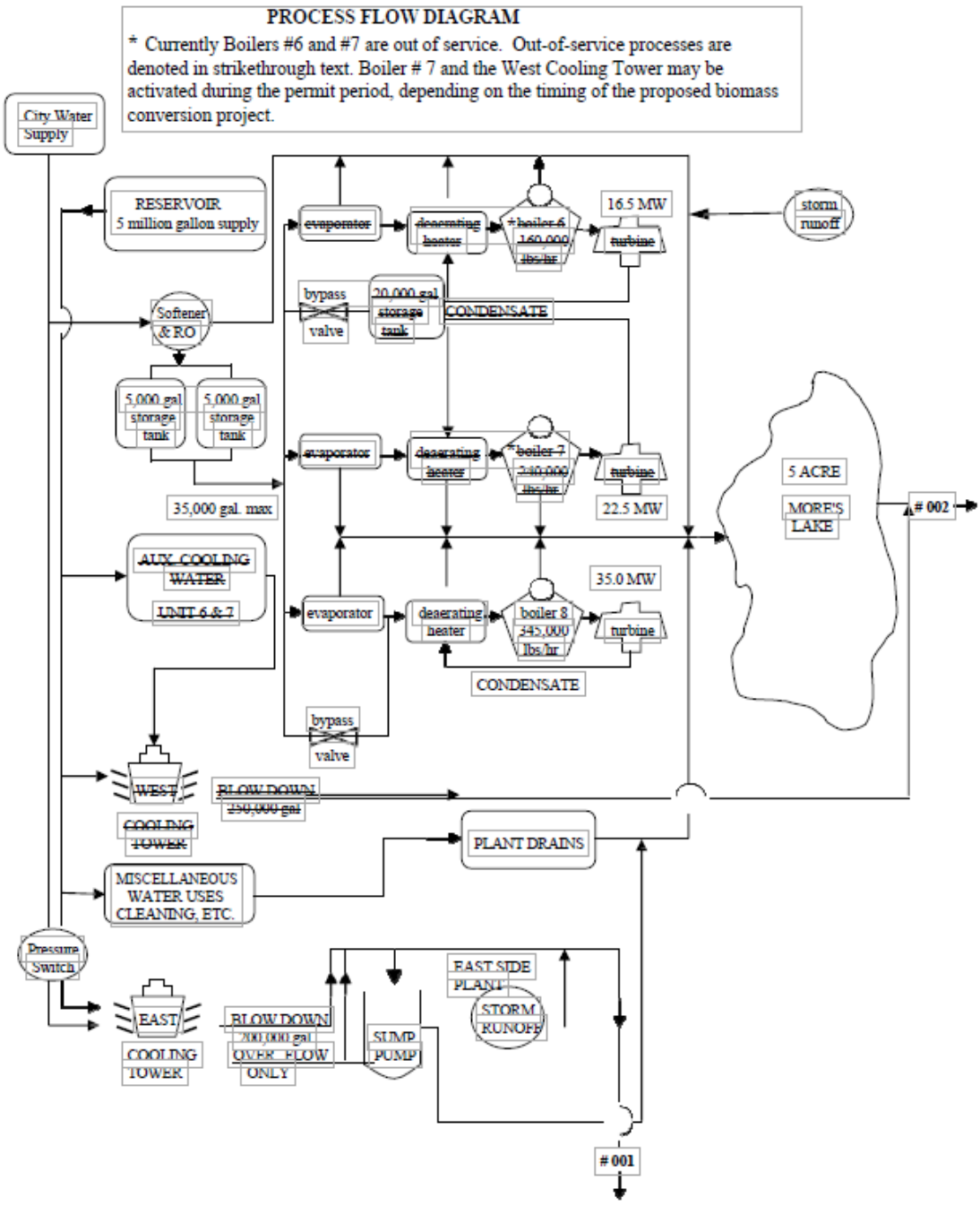
COOLING TOWER BLOWDOWN:
A cooling tower blowdown (CTB) monitoring point was established in this permit for both cooling towers (CTE & CTW for east and west). Free available chlorine/bromine was moved to the CTB locations. Total residual chlorine/bromine will remain at the outfall because these are based on water quality limitations. The facility must sample for the cooling tower blowdown parameters without the influence of any other process waters (cooling tower overflow, etc.) entering the sampling location.

WET WEATHER AND DRY WEATHER DISCHARGES – OUTFALL #001:
In direct divergence from the last permit, this permit delineates between wet weather and dry weather discharges at outfall #001. The facility will sample for all parameters listed in the “dry weather” tables when there is process wastewater discharges through the outfall. The facility will sample for all parameters listed in the “wet weather” tables during precipitation events. The previous permit required all discharges from outfall #001 be sampled during stormwater discharges. However, outfall #001 is a process water discharge with incidental stormwater discharges. On 11/16/2017, the facility provided analytical results from sampling on 2/2/2016 at outfall #001 without a stormwater component. The permit writer noted extremely high levels of copper from the outfall #001 discharge, along with arsenic and selenium values which also have reasonable potential per the permit writer’s best professional judgment. In a comment dated 7/31/2017, the facility asked the permit writer to not use the discharge monitoring data to complete a statistical reasonable potential analysis because the ash pile has been removed. After that, the permit writer again questioned the validity of the data which then it was discovered the discharges with high metals values are form the cooling tower blowdown and not from the stormwater or coal pile. Therefore, the permit writer concluded these parameters show potential to cause in-stream exceedances using best professional judgment without the use of a statistical calculator.

FACILITY MAP:



WATER BALANCE DIAGRAM:



Part II. Receiving Stream Information

Receiving Water Body's Water Quality:
The receiving stream has no concurrent water quality data available. The first classified stream has changed as the new MUDD dataset has been approved by the EPA.

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. http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm
✓ Not applicable; this facility does not discharge to an impaired segment of a 303(d) listed stream.

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/
✓ Not applicable; this facility is not associated with a TMDL.

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	12-digit HUC
#001	Tributary to 8-20-13 MUDD V1.0	n/a	n/a	GEN	0.0	Rocky Fork Creek 10300102-0706
	8-20-13 MUDD V1.0	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0.2 mi.	
#002	Tributary to 8-20-13 MUDD V1.0	n/a	n/a	GEN	0.0	
	8-20-13 MUDD V1.0	C	3960	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0.3 mi.	

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
* 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.

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 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.
  - ✓ Material and substantial alterations or additions to the permitted facility occurred after permit issuance justify the application of a less stringent effluent limitation.
    - The facility no longer burns coal. The facility is switching to natural gas a biofuels. The facility has removed the coal pile therefore the ELG technology based limitation of 50 mg/L TSS is no longer applicable.
    - The permit writer has determined the stormwater must be sampled separately from the cooling tower discharges. Several metals were removed from sampling requirements of stormwater at outfall #001. Monitoring no longer required; six metals remain as sentry metals.
  - ✓ 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 the WET requirement 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. 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).
    - Previous permit required annual sampling of PCBs; however, the ELG states there shall be no discharge. The permit limit of "0" was removed and replaced by a special condition.
    - The previous permit required monitoring of BOD_5, the permit writer has determined this parameter is not applicable to the discharges at this facility therefore was removed.
    - The previous permit contained a narrative special condition requiring the effluent not increase or decrease the receiving stream's temperature more than 5 degrees Fahrenheit. There were no reporting requirements for this special condition. The facility is located at the top of the watershed therefore there is no upstream to which to compare the effluent. Requirement removed.
    - The previous permit contained a narrative special condition requiring an SPCC plan. While the facility may be subject to requirements in an SPCC plan, an NPDES permit does not have the scope to require an SPCC plan; special condition removed.
    - The previous permit contained a narrative special condition requiring the permittee "…notify the department by telephone within 24 hours of becoming aware of any event which may endanger health or the environment. Leaving a message on a Department staff member's voicemail does not satisfy this reporting requirement. During holidays, during the weekends, after normal business hours, or if the permit holder cannot reach regional office staff for any reason, the

permit holder is instructed to report the situation to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436. In addition, the permittee shall submit to the Department a written report with five (5) days of the time the permittee becomes aware of the circumstances. The written report shall include a description of the discharge or situation and cause of any noncompliance, the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent `recurrence of the non-complying discharge. These events include but are not limited to (a) any spill, of any material, that leaves the property of the facility and (b) any spill, of any material outside of secondary containment and exposed to precipitation, greater than 25 gallons or an equivalent volume of solid material. Federal Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802."
This requirement is beyond the scope of NPDES permitting but is codified in rule in RSMo 260 and in regulation in 20 CSR Division 24. It is the responsibility of the facility to follow all applicable rules and regulations in Missouri and those of Federal CERCLA requirements if the facility determines they are subject to those rules.

- The previous permit contained a narrative special condition requiring the permittee "…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. A method is "sufficiently sensitive" when (1) the method quantitation level is at or below the level of the applicable water quality criterion for the pollutant or (2) the method quantitation 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. These methods are even required for parameters that are listed as monitoring only, as the data collected may be used to determine if limitations need to be established."
  This special condition is found in the standard conditions attached as Part I of this permit therefore was removed from the special conditions.
- 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 were 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.

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.

✓ Not applicable; this facility does not have any stormwater-only outfalls although some stormwater is sampled separately.

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.

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:

This special condition reiterates the federal rules found in 40 CFR 122.44(f) and 122.42(a)(1). In these rules, the facility is required to report changes in amounts of toxic substances discharged. Toxic substances are defined in 40 CFR 122.2 as "…any pollutant listed as toxic under section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing section 405(d) of the CWA." Section 307 of the clean water act then refers to those parameters found in 40 CFR 401.15.

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.

COAL COMBUSTION RESIDUALS (CCR):

Coal Combustion Residuals (CCR), often referred to as coal ash, are currently considered solid waste, not hazardous waste, under an amendment to RCRA, the Resource Conservation and Recovery Act. Coal ash is residue from the combustion of coal in power plants and compounds captured by pollution control technologies, like precipitators or scrubbers. Potential environmental concerns from coal ash pertain to pollution from impoundments and landfills leaching into groundwater and structural failures of impoundments.

The US EPA promulgated the first-ever national rules to ensure the safe disposal and management of coal ash from coal-fired power plants under the nation's primary law for regulating solid waste, the Resource Conservation and Recovery Act (RCRA) under Subtitle D. EPA published the final rule on April 17, 2015 in the Federal Register. http://www2.epa.gov/coalash/coal-ash-rule. The department is currently reviewing the rule.

While the rule mentioned above is geared towards solid waste, the water protection program has begun to consider implications to groundwater of the state. Studies on which the rule is based indicate impacts occur to groundwater when ponds are unlined or not adequately lined. This permit does not regulate the fate of coal ash, this operating permit contains a special condition to address concerns regarding ash ponds/impoundments at this facility and their potential to impact groundwater. Missouri Water Quality Standard 10 CSR 20-7.031(5)(A) states, "Water contaminants shall not cause or contribute to exceedances of Table A, groundwater limits in aquifers and caves..." The established special condition will allow the department to (1) determine if groundwater is being impacted from either the coal ash impoundments, and (2) establish controls, limits, management strategies, and/or groundwater cleanup criteria. See *Groundwater Monitoring* below.

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.

✓ The facility checked "not applicable" on Form C box 2.50, however, an effluent limitation guideline does apply.

PARAMETER	40 CFR 423	DAILY MAXIMUM	MONTHLY AVERAGE
Arsenic, Total	BAT – FGD Wastewater	11 µg/L	8 µg/L
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
Chlorine, Total Residual	BAT – Once-Through Cooling Water BPT – Once Through Cooling Water >25 MW	0.2 mg/L	n/a
Chromium	BAT – Cooling Tower Blowdown	0.2 mg/L	0.2 mg/L
Copper	BPT – Metal Cleaning Wastes	1 mg/L	1 mg/L
Iron	BPT – Metal Cleaning Wastes	1 mg/L	1 mg/L
Mercury	BAT – FGD Wastewater	0.788 µg/L	0.356 µg/L
Nitrate plus Nitrite as N	BAT – FGD Wastewater	17.0 mg/L	4.4 mg/L
Oil and Grease	BPT – Low volume wastes, ash transport water, metal cleaning wastes	20 mg/L	15 mg/L
Selenium	BAT – FGD Wastewater	23 µg/L	12 µg/L
Sluice Water	BAT – fly ash sluice water BAT – bottom ash sluice water	0	0
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
Zinc	BAT – Cooling Tower Blowdown	1 mg/L	1 mg/L
126 Priority Pollutants	BAT – Cooling Tower Blowdown	0	0

✓ The facility no longer stores coal, uses coal for power generation, and therefore does not have ash sluice/transport water; a special condition applies these standards.

✓ The facility does not have air pollution control wastewater.

GROUNDWATER MONITORING:
Groundwater is a water of the state according to 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

✓ Applicable.

While the state does not have explicit regulation requirements pertaining to groundwater monitoring for coal fired power plant facilities, groundwater is considered a "water of the state" and therefore, it is within the department's authority to consider groundwater when issuing permits. Both lined and unlined ash ponds will be evaluated to determine potential impacts to groundwater. As additional permits for coal-fired power plants with surface impoundments for CCR's are renewed, all will be evaluated for the need for similar requirements and further characterization of the ash ponds and their toxicity. Much of the information about leachates entering groundwater is obtained from the department's Solid Waste Management Program (10 CSR 80-11.010) for utility waste landfills and documents authored by the EPA and the Electric Power Research Institute (EPRI).

The adequacy of a groundwater monitoring program depends greatly on the quality of the detailed hydrogeologic site characterization used to design the program. Only after a complete understanding of the underlying geology and hydrology has been achieved, can the implementation of a groundwater monitoring program begin. The time schedule provided in the permit is to provide time for the utility companies, their consultants, and the department to evaluate and develop a groundwater monitoring plan which is correct for the site-specific conditions of each coal ash pond. Additionally, this time frame is striving to mirror the federal rule regarding in-situ CCR in impoundments.

A groundwater monitoring plan is required to be developed and implemented to examine potential discharges to groundwater from the former and existing ash ponds. The department envisions samples collected quarterly at the UWL for RCRA monitoring to suffice for groundwater monitoring of the UWL portion of the facility. However, groundwater monitoring is being implemented on the ash pond areas as the department wishes to explore any impacts the unlined/inadequately lined ash ponds exhibit in the groundwater. The groundwater monitoring plan should describe not only the groundwater monitoring program, but also the strategy for effectively monitoring groundwater at the facility. The plan typically details the standard operation and procedures related to field sampling, laboratory analysis, and data presentation. Groundwater investigations will include an intrusive field program that involves drilling, hydrological monitoring, and groundwater sampling. The magnitude of such investigations is a function of the size and complexity of the facility.

In this permit renewal, the facility is being required to work with the Missouri Geological Survey to establish a groundwater monitoring program having the capacity to observe and characterize groundwater movement and potential contamination, and determines the proper location and installation of monitoring wells to fully characterize any areas currently or formerly holding ash—both open and closed, or out of use. Monitoring will occur upgradient and downgradient of the ash ponds (or former ash ponds, capped, or not capped) in multiple locations. The department does not consider closure or inactivity per the new CCR regulations as a method of relieving or dismissing of these groundwater monitoring conditions.

The facility can expect to submit quarterly data for the following constituents (at a minimum):

Metals	Metals (continued)	Organics
Aluminum	Lead	Sulfate, as SO_4
Antimony	Lithium	Total Organic Carbon (TOC)
Arsenic	Magnesium	Total Organic Halogens (TOX)
Barium	Manganese	Field Parameters
Beryllium	Mercury	pH
Boron	Molybdenum	Specific conductance
Cadmium	Nickel	Oxidation/Reduction Potential (ORP)
Chromium III	Selenium	Radionuclides
Chromium VI	Silver	Radium 226 (^{226}Ra)
Cobalt	Sodium	Radium 228 (^{228}Ra)
Copper	Thallium	Other
Iron	Zinc	Chemical Oxygen Demand (COD)
		Chloride
		Fluoride
		Hardness, as $CaCO_3$
		Total Dissolved Solids (TDS)

Parameters for consideration in the development of the monitoring plan are based on EPA's *Characterization of Coal Combustion Residues from Electric Utilities – Leaching and Characterization Data*, the new CCR rule at 40 CFR 257 appendices III and IV, and 10 CSR 80-11.

The facility has consulted with the Missouri Geological Survey Program and established the groundwater monitoring program in accordance with stipulations provided by that program. The MGS has approved the program as documented by the permittee.

This permit is to comply with the requirements in RSMo 644.143 and to establish a long term approach and stewardship of the site and the beneficial uses of the groundwater on this site. 40 CFR 257 is a self-implementing rule and covered under RCRA; this permit does not implement the federal CCR rule. This permit does not shield a facility from the CCR requirements. Compliance with the terms and conditions of this permit identical to or more stringent than the requirements in the federal CCR rule may constitute compliance with the federal CCR rule although not guaranteed.

The department realizes there are two different timelines associated with this permit for groundwater monitoring. One is driven solely by the effective date of 40 CFR 257, where the permittee will publish the results from eight statistically independent groundwater samples accurately representing background water quality and the quality of the groundwater surrounding the ash ponds pursuant to 40 CFR 257.93. The other is solely water protection program requirements and the permittee will be required to report that data to the water protection program. While the two have different dates and reporting requirements, the department will allow, if appropriate, the same monitoring well network and quarterly sampling data to be used for the two different requirements. All investigations and reports for the water protection program must be approved by the water protection program and Missouri Geological Survey. Any data gathered by the facility prior to WPP approval may or may not be acknowledged as appropriate monitoring. Data and submittals driven by 40 CFR 257 are not automatically approved by the Water Protection Program; but will be reviewed for essential quality elements. Most, if not all data collected under the 40 CFR 257 program are expected to be relevant to the informational needs of 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.

✓ Not applicable; sludge is not land applied at this facility.

MODIFICATION REQUESTS:
The permittee may request a modification to the terms and conditions of this permit in accordance with Missouri Clean Water Law RSMo 644.051.9. This section was added on June 12, 2018 in response to a Public Notice comment.

PRIORITY POLLUTANT SCAN IN COOLING TOWER BLOWDOWN:
This permit establishes an annual scan of the 126 priority pollutants found in 40 CFR 423 Appendix A in accordance with 40 CFR 423.13(d)(1). The permittee shall conduct the scan annually and report the findings via the eDMR system. The facility shall report "0" for all pollutants which were not detected using the most sensitive method available; any other value reported will indicate an exceedance of the requirement "in no detectable amount" of the pollutant. The permittee will submit an attachment with the data which includes the analytical data showing the method detection limit, value obtained, or qualifiers, and the quality check report included with the laboratory narrative.

Alternatively, the permittee can certify the cooling tower blowdown does not discharge a certain pollutant by reporting "0" and the facility must submit a narrative with the determination as to why that particular pollutant does not exist in the discharge. Total recoverable chromium and total recoverable zinc must be sampled at least annually. Each year is a calendar year and extends from January 1 through December 31.

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 give 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)].

✓ This facility is completely changing the operations and is cleaning out the basin. The previous permit required monitoring for a suite of metals. RP was established mathematically but was not applied as the current and future operations of the facility are not represented by these data.

✓ 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. SOCs are allowed under 40 CFR 122.47 providing certain conditions are met.

✓ Applicable; this permit contains an SOC for total recoverable arsenic, copper, and selenium and to provide a period to upgrade the cooling towers to have continuous flow monitoring.

SECONDARY CONTAINMENT STRUCTURES SPECIAL CONDITION:
The special condition has been derived to include oil and grease and BTEX (benzene, toluene, ethylbenzene, and xylene) sampling of the potentially contaminated stormwater in secondary containment. 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 WQSs 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 WQSs 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 WQSs 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.

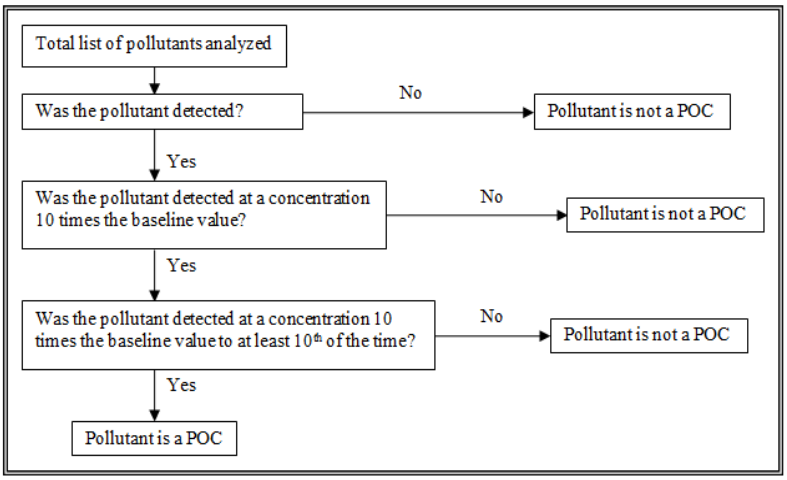
✓ Applicable; a SWPPP shall be developed and implemented for this facility.

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 department so a technology based effluent limitation can be applied in the permit if applicable.

✓ Applicable; the previous permit writer completed a TBEL. The current permit will continue those findings as new data does not exist yet for the new processes. Additionally, the permit contains technology limitations based on the ELG. ELG TBELs take precedence over any TBELs previously described by permitting actions.

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 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:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (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. 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.

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 RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses therefore all outfalls have TSS limitations.

(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 all outfalls, 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. Data submitted by the permittee is not representative to current and future operations of the facility therefore oil and grease limitations will remain in the permit.
- 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.
- Specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.

(E) There shall be no significant human health hazard from incidental contact with the water.
- It is the permit writer's opinion 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 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.
- Specific numeric effluent limitations established in the permit will prevent physical, chemical, and hydrologic changes to the biological community. It is the permit writer's opinion this criterion is similar to the same criterion as (D).

(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 – PROCESS WASTEWATER

OUTFALL #001 EFFLUENT LIMITATIONS TABLE (DRY WEATHER):

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
TEMPERATURE	°F	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
CONVENTIONAL							
CHLORINE/BROMINE, TOTAL RESIDUAL (TRC/TRB)	µg/L	17 **	8 **	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
CYANIDE, (CATC)	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	mg/L	15	10	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
pH ǂ	SU	6.5 TO 9.0	6.5 to 9.0	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
TOTAL SUSPENDED SOLIDS	mg/L	100	30	50, 50	ONCE/MONTH	ONCE/MONTH	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ANTIMONY, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ARSENIC, TR	µg/L	*	*	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
ARSENIC, TR	µg/L	32.8	16.4	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
BERYLLIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CADMIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM III, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM IV, DISSOLVED	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
COPPER, TR	µg/L	*	*	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
COPPER, TR	µg/L	47.2	23.5	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
IRON, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
LEAD, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
MERCURY, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
NICKEL, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SELENIUM, TR	µg/L	*	*	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
SELENIUM, TR	µg/L	8.2	1.4	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
SILVER, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
THALLIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ZINC, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OTHER							
CHLORIDE	mg/L	377.8	188.3	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
CHLORIDE PLUS SULFATE	mg/L	1000	1000	SAME	ONCE/MONTH	ONCE/MONTH	GRAB

* monitoring requirement only
** this parameter has an ML, see permit
ǂ the facility will report the minimum and maximum pH values; pH is not to be averaged
NEW parameter not established in previous state operating permit
same limits/conditions same as previous permit
TR total recoverable

DERIVATION AND DISCUSSION OF LIMITS FOR DRY WEATHER DISCHARGES FROM OUTFALL #001:

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 and any other possible sources including stormwater.

Hardness as $CaCO_3$
Hardness monitoring not continued.

Temperature
Previous permit required no change in stream temperature grater or less than 5 °F within a narrative special condition. However, there is no upstream to compare the temperature to therefore that requirement is removed in favor of the maximum temperature 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). Monthly monitoring and reporting, new requirement this permit.

CONVENTIONAL:

Chlorine/Bromine, Total Residual (TRC/TRB)
The ELG requires this parameter, the facility has reasonable potential to cause or contribute to exceedances of instream water quality targets. Previous permit limits were 0.017 mg/L daily maximum, 0.008 mg/L monthly average. The permittee reported between 0 and 1070 µg/L for outfall #001 and between 0 and 480 µg/L for outfall #002 in the last five years. See Rationale in Part III. 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.

Acute WLA:	C_e = 19 µg/L	
Chronic WLA:	C_e = 10 µg/L	
LTA_a = 19 (0.321) = 6.1 µg/L		[CV = 0.6, 99th Percentile]
LTA_c = 10 (0.527) = 5.3 µg/L		[CV = 0.6, 99th Percentile]
Use most protective number of LTA_a or LTA_c.		
MDL = 5.3 (3.11) = 16.5 µg/L		[CV = 0.6, 99th Percentile]
AML = 5.3 (1.55) = 8.2 µg/L		[CV = 0.6, 95th Percentile, n = 4]

Total residual chlorine effluent limits of 17 µg/L daily maximum and 8 µg/L monthly average are continued; the permittee will now submit data in µg/L to coincide with other permits. Standard compliance language for TRC, including the minimum level (ML), is described in the permit. Monthly monitoring and limitations continued from the previous permit.

Cyanide Amenable to Chlorination (CATC)
Previous permit was monitoring only; data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued.

Oil & Grease
15 mg/L daily maximum, 10 mg/L monthly average. Limitations continued from previous permit; 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)
The facility's new limitations are 100 mg/L daily maximum and 30 mg/L monthly average based on the technology limit for low volume waste sources. Previous permit effluent limitations of 50 mg/L daily maximum and 50 mg/L monthly average have been reassessed. The facility no longer burns coal which required a low TSS daily maximum limitation. Low volume wastes include but are not limited to: ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Using best professional judgment, the permit writer has determined cooling tower overflow to also be a low volume waste source therefore TSS limitations will be modified. See FR Vol. 80, No. 212, Tuesday, November 3, 2015, page 67892 for further information.

METALS:
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). General warm-water habitat criteria apply (WWH) designated as AQL in 10 CSR 20-7.031 Table A. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used as applicable to determine the most protective effluent limit for the stream class and uses.

Aluminum, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Antimony, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Arsenic, Total Recoverable
Previous permit was monitoring only; data collected during the last permit cycle is not representative of current and future operations of the facility. However, one value, 35 µg/L, taken during a blowdown event 2/2/2016 without the influence (dilution) of stormwater was over the water quality standard. This parameter will receive an SOC to meet the new limits.

Acute AQL WQS:	none	
Chronic AQL WQS:	20	
LTA_a:	none	[CV = 0.6, 99th Percentile]
LTA_c:	20 (0.527) = 10.549	[CV = 0.6, 99th Percentile]
	Use most protective number of LTA_a or LTA_c.	
MDL:	10.549 (3.11) = 32.853 = **32.8 µg/L**	[CV = 0.6, 99th Percentile]
AML:	10.549 (1.55) = 16.376 = **16.4 µg/L**	[CV = 0.6, 95th Percentile, n = 4]

Beryllium, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Cadmium, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Chromium III, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Chromium, Hexavalent (IV), Dissolved
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Copper, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility. However, the copper value obtained for the purposes of determining the 126 priority pollutants in February 2, 2016 shows copper at 290 µg/L without a stormwater influenced event. Other data are much lower; while the permit writer understands the cooling tower blowdown may eventually be routed through Mores Lake for treatment, the permit writer cannot ignore such a high value. The permit writer is concerned that if there is no stormwater dilution, the facility is discharging very high levels of copper from the cooling tower blowdown, either from the concentration of the potable water used at the site or from the stripping of the copper piping from chemical antiscalants. Because the permittee could not supply data as to blowdown duration or frequency, the permit writer has determined this parameter must be limited. Quarterly monitoring increased to monthly.

Acute AQL WQS:	$e^{(0.9422 * \ln 373 - 1.7003)} * 0.960 = 46.441$	[at Hardness 373]
Chronic AQL WQS:	$e^{(0.8545 * \ln 373 - 1.7020)} * 0.960 = 27.582$	[at Hardness 373]
Acute TR WQS:	$46.441 \div 0.96 = 48.376 = C_e$	[Total Recoverable Conversion]
Chronic TR WQS:	$27.582 \div 0.96 = 28.731 = C_e$	[Total Recoverable Conversion]
LTA_a:	48.376 (0.321) = 48.376	[CV = 0.6, 99th Percentile]
LTA_c:	28.731 (0.527) = 15.533	[CV = 0.6, 99th Percentile]
	Use most protective number of LTA_a or LTA_c.	
MDL:	15.533 (3.11) = 47.196 = **47.2 µg/L**	[CV = 0.6, 99th Percentile]
AML:	15.533 (1.55) = 23.525 = **23.5 µg/L**	[CV = 0.6, 95th Percentile, n = 4]

An SOC is provided for this parameter at this outfall. The facility must sample for this parameter during non-stormwater influence. Again, as the permittee could not supply information for blowdown events, the permit writer must assume that the discharge is continuous and then must limited as such. The permit writer must implement a limit when there is reasonable potential and since the permit writer cannot predict future operations of the facility, the permit must include a schedule for compliance.

Iron, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Lead, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Mercury, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Nickel, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Selenium, Total Recoverable
Previous permit was monitoring only; data collected during the last permit cycle is not representative of current and future operations of the facility; However, one value, 5.4 µg/L, taken during a blowdown event 2/2/2016 without the influence (dilution) of stormwater was over the water quality standard. The permit writer believes exceedances of this parameter are from concentration of potable water used at this site. This parameter will receive an SOC to meet the new limits.

Acute AQL WQS:	none	
Chronic AQL WQS:	5	
LTA_a:	none	
LTA_c:	5 (0.527) = 2.637	[CV = 0.6, 99th Percentile]
MDL:	2.637 (3.11) = 8.213 = **8.2 µg/L**	[CV = 0.6, 99th Percentile]
AML:	2.637 (1.55) = 4.094 = **4.1 µg/L**	[CV = 0.6, 95th Percentile, n = 4]

Silver, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Thallium, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

Zinc, Total Recoverable
Previous permit was monitoring only; quarterly monitoring continued to evaluate process wastewater-only discharges upon next permit renewal.

OTHER:

Chloride
10 CSR 20-7.031 Table A: Previous permit limits of 377.8 mg/L daily maximum and 188.3 mg/L monthly average; limits continued from previous permit; minimum once monthly sampling.

Chloride plus Sulfate
Previous permit limits of 1000 mg/L daily maximum and monthly average; these limits are continued per 10 CSR 20-7.031(4)(L) dated 9/30/2009 http://www.sos.mo.gov/cmsimages/adrules/csr/previous/10csr/10csr0909/10c20-7.pdf and remain appropriate for the discharge; minimum once monthly sampling.

OUTFALL #001 – STORMWATER (WET WEATHER DISCHARGES)

OUTFALL #001 EFFLUENT LIMITATIONS TABLE (WET WEATHER):

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	*, *	ONCE/QUARTER	ONCE/QUARTER	24 HR. EST
CONVENTIONAL							
CHEMICAL OXY. DEMAND	mg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	mg/L	15	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
pH ǂ	SU	6.5 TO 9.0	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
TOTAL SUSPENDED SOLIDS	mg/L	100	*	50, 50	ONCE/QUARTER	ONCE/QUARTER	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ARSENIC, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM III, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
COPPER, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SELENIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ZINC, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OTHER							
CHLORIDE	mg/L	377.8	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHLORIDE PLUS SULFATE	mg/L	1000	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB

*	monitoring requirement only
**	this parameter has an ML, see permit
ǂ	the facility will report the minimum and maximum pH values; pH is not to be averaged
NEW	parameter not established in previous state operating permit
same	limits/conditions same as previous permit
TR	total recoverable

DERIVATION AND DISCUSSION OF LIMITS FOR WET WEATHER DISCHARGES FROM OUTFALL #001:

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); quarterly sampling requirement.

CONVENTIONAL:

Chemical Oxygen Demand (COD)
The facility reported between 4 and 110 mg/L at outfall #001. Monitoring is included using the permit writer's best professional judgment; typical COD target ceiling for stormwater is between 100 and 120 mg/L. 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. Previous permit was monitoring only; continued.

Oil & Grease
15 mg/L daily maximum limitations continued from previous permit; 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.

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)
Stormwater discharges daily maximum limit of 100 mg/L. Previous permit effluent limitations of 50 mg/L daily maximum and 50 mg/L monthly average have been reassessed. The facility no longer burns coal which required a low TSS daily maximum limitation. The facility's new limitations are 100 mg/L daily maximum and 30 mg/L monthly average based on the technology limit for low volume waste sources. Low volume wastes include but are not limited to: ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Using best professional judgment, the permit writer has determined cooling tower overflow to also be a low volume waste source therefore TSS limitations will be modified for both outfalls #001 and #002. See FR Vol. 80, No. 212, Tuesday, November 3, 2015, page 67892 for further information. Only the daily maximum is retained for wet weather discharges.

METALS:

Aluminum, Total Recoverable
Monitoring only; monitoring required in stormwater to assess reasonable potential for stormwater discharges. Continued from previous permit.

Arsenic, Total Recoverable
Monitoring only; monitoring required in stormwater to assess reasonable potential for stormwater discharges. Continued from previous permit.

Chromium III, Total Recoverable
Monitoring only; monitoring required in stormwater to assess reasonable potential for stormwater discharges. Continued from previous permit.

Copper, Total Recoverable
Monitoring only; monitoring required in stormwater to assess reasonable potential for stormwater discharges. Continued from previous permit.

Selenium, Total Recoverable
Monitoring only; monitoring required in stormwater to assess reasonable potential for stormwater discharges. Continued from previous permit.

Zinc, Total Recoverable
Monitoring only; monitoring required in stormwater to assess reasonable potential for stormwater discharges. Continued from previous permit.

OTHER:

Chloride
10 CSR 20-7.031 Table A: Previous permit limits of 377.8 mg/L daily maximum and 188.3 mg/L monthly average; only daily maximum limits continued from previous permit specific to wet weather discharges.

Chloride plus Sulfate
Previous permit limits of 1000 mg/L daily maximum; these limits are continued per 10 CSR 20-7.031(4)(L) dated 9/30/2009 http://www.sos.mo.gov/cmsimages/adrules/csr/previous/10csr/10csr0909/10c20-7.pdf and remain appropriate for the discharge; only daily max retained for wet weather discharges.

OUTFALL #002 – PROCESS WASTEWATER

OUTFALL #002 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
TEMPERATURE	°F	*	*	NEW	ONCE/MONTH	ONCE/MONTH	GRAB
CONVENTIONAL							
CHEMICAL OXY. DEMAND	mg/L	*	*	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
CHLORINE/BROMINE, TOTAL RESIDUAL (TRC/TRB)	µg/L	17 **	8 **	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
CYANIDE, (CATC)	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OIL & GREASE	mg/L	15	10	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
PH ǂ	SU	6.5 TO 9.0	6.5 to 9.0	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
TOTAL SUSPENDED SOLIDS	mg/L	100	30	50, 50	ONCE/MONTH	ONCE/MONTH	GRAB
METALS							
ALUMINUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ANTIMONY, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ARSENIC, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
BERYLLIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CADMIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM III, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
CHROMIUM IV, DISSOLVED	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
COPPER, TR	µg/L	40.6	15.8	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
IRON, TR	µg/L	1000	627.6	1825.6	ONCE/MONTH	ONCE/MONTH	GRAB
LEAD, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
MERCURY, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
NICKEL, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SELENIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
SILVER, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
THALLIUM, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
ZINC, TR	µg/L	*	*	SAME	ONCE/QUARTER	ONCE/QUARTER	GRAB
OTHER							
CHLORIDE	mg/L	377.8	188.3	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
CHLORIDE PLUS SULFATE	mg/L	1000	1000	SAME	ONCE/MONTH	ONCE/MONTH	GRAB
WET TEST, CHRONIC	TUc	*	-	PASS/FAIL	ONCE/YEAR	ONCE/YEAR	GRAB

* monitoring requirement only
** this parameter has an ML, see permit
ǂ the facility will report the minimum and maximum pH values; pH is not to be averaged
NEW parameter not established in previous state operating permit
same limits/conditions same as previous 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); monthly sampling requirement.

Hardness as $CaCO_3$
Hardness monitoring not required.

Temperature
Previous permit required no change in stream temperature grater or less than 5 °F within a narrative special condition. However, there is no upstream to compare the temperature to therefore that requirement is removed in favor of the maximum temperature 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). Monthly monitoring and reporting, new requirement this permit.

CONVENTIONAL:

Chemical Oxygen Demand (COD)
The facility reported between 4 to 72 mg/L at outfall #002. Monitoring is included using the permit writer's best professional judgment; typical COD target ceiling for industrial wastewater is between 100 and 120 mg/L. 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. Previous permit was monitoring only; continued.

Chlorine/Bromine, Total Residual (TRC/TRB)
The ELG requires this parameter, the facility has reasonable potential to cause or contribute to exceedances of instream water quality targets. Previous permit limits were 0.017 mg/L daily maximum, 0.008 mg/L monthly average. The permittee reported between 0 and 1070 µg/L for outfall #001 and between 0 and 480 µg/L for outfall #002 in the last five years. See Rationale in Part III. 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.

Acute WLA: $C_e = 19$ µg/L
Chronic WLA: $C_e = 10$ µg/L
$LTA_a = 19\ (0.321) = 6.1$ µg/L [CV = 0.6, 99th Percentile]
$LTA_c = 10\ (0.527) = 5.3$ µg/L [CV = 0.6, 99th Percentile]
Use most protective number of LTA_a or LTA_c.
MDL = 5.3 (3.11) = 16.5 µg/L [CV = 0.6, 99th Percentile]
AML = 5.3 (1.55) = 8.2 µg/L [CV = 0.6, 95th Percentile, n = 4]

Total residual chlorine effluent limits of 17 µg/L daily maximum and 8 µg/L monthly average are continued; the permittee will now submit data in µg/L to coincide with other permits. Standard compliance language for TRC, including the minimum level (ML), is described in the permit. Monthly monitoring and limitations continued from the previous permit.

Cyanide Amenable to Chlorination (CATC)
Previous permit was monitoring only; the facility has stated data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued to evaluate process water-only discharges.

Oil & Grease
15 mg/L daily maximum, 15 mg/L monthly average. Limitations continued from previous permit; 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)
The facility's new limitations are 100 mg/L daily maximum and 30 mg/L monthly average based on the technology limit for low volume waste sources. Previous permit effluent limitations of 50 mg/L daily maximum and 50 mg/L monthly average have been reassessed. The facility no longer burns coal which required a low TSS daily maximum limitation. Low volume wastes include but are not limited to: ion exchange water treatment systems, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Using best professional judgment, the permit writer has determined cooling tower overflow to also be a low volume waste source therefore TSS limitations will be modified for both outfalls #001 and #002. See FR Vol. 80, No. 212, Tuesday, November 3, 2015, page 67892 for further information.

METALS:
Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the *Technical Support Document For Water Quality-based Toxic Controls* (EPA/505/2-90-001) and *The Metals Translator: Guidance For Calculating a Total Recoverable Permit Limit From a Dissolved Criterion* (EPA 823-B-96-007). General warm-water habitat criteria apply (WWH) designated as AQL in 10 CSR 20-7.031 Table A. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used as applicable to determine the most protective effluent limit for the stream class and uses. Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). Conversion factors for Cd and Pb are hardness dependent.

Aluminum, Total Recoverable
Previous permit was monitoring only; data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Antimony, Total Recoverable
Previous permit was monitoring only; data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Arsenic, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Beryllium, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Cadmium, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Chromium III, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Chromium, Hexavalent (IV), Dissolved
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Copper, Total Recoverable
Previous permit limits were 40.6 µg/L daily maximum and 15.8 µg/L monthly average. Previous limits and monthly monitoring retained as the data collected during the last permit cycle may not be representative of current and future operations at this facility. Technology based limitations for chemical metal cleaning wastes is 1 mg/L daily maximum and monthly average and is less protective than the water quality limitations therefore cannot be used.

Iron, Total Recoverable
Previous permit limits were 1,825.6 µg/L daily maximum and 627.6 µg/L monthly average. Previous monthly average limits and monthly monitoring retained as the data collected during the last permit cycle are not representative of current and future operations at this facility. The effluent limitation guidelines for chemical metal cleaning wastes is 1 mg/L for daily maximum and monthly average, therefore the daily maximum limit must be held to the most stringent limitation, therefore, to issue a lawful permit according to 40 CFR 122.44(l)(2)(ii) the ELG must be applied to the daily maximum; 1000 µg/L daily maximum; monthly average water quality limitation retained. Schedules of compliance are not permissible for effluent limitation guideline parameters.

Lead, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Mercury, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Nickel, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Selenium, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Silver, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Thallium, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

Zinc, Total Recoverable
Previous permit was monitoring only; the facility asserts data collected during the last permit cycle is not representative of current and future operations of the facility; quarterly monitoring continued for reevaluation of process water-only discharges upon next permit renewal.

OTHER:

Chloride
10 CSR 20-7.031 Table A: Previous permit limits of 377.8 mg/L daily maximum and 188.3 mg/L monthly average; limits continued from previous permit; minimum once monthly sampling.

Chloride plus Sulfate
Previous permit limits of 1000 mg/L daily maximum and monthly average; these limits are continued per 10 CSR 20-7.031(4)(L) dated 9/30/2009 http://www.sos.mo.gov/cmsimages/adrules/csr/previous/10csr/10csr0909/10c20-7.pdf and remain appropriate for the discharge; minimum once monthly sampling.

Whole Effluent Toxicity (WET) Test, Chronic

Monitoring is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream. The previous permit required a toxicity endpoint of mortality at outfall #002. Although the facility asserts the discharge is not constant, there was no data to determine the frequency or volume of the blowdown discharge therefore a toxicity endpoint of sub-lethal effects (reduced growth and reproduction) coupled with mortality is warranted. This facility discharges to a stream without mixing considerations; the discharge is to a headwaters creek which, as a classified C stream, is not flowing at all times of the year. Because the stream is not constantly flowing, the effluent is likely a dominating force in the stream meaning the aquatic organisms are exposed to effluent more than stormwater (of course depending on time of year). To remain protective of the receiving stream, the chronic test is warranted.

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%. (same as previous permit)

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%. (same as previous permit)

WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits/ WET Testing for Compliance Bio-monitoring.* http://dnr.mo.gov/env/wpp/permits/manual/docs/5_2_2.pdf

The facility shall maintain the same sampling frequency of annual as in the previous permit. For this industrial facility, an annual test is warranted because of the possible toxic parameters in the discharge from cooling tower blowdown.

PERMITTED FEATURES #CTE AND #CTW - COOLING TOWER BLOWDOWN

COOLING TOWER EFFLUENT LIMITATIONS TABLE (DRY WEATHER); EAST AND WEST COOLING TOWERS:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	*, *	ONCE/MONTH/ CONTINUOUS	ONCE/MONTH	24 HR. TOT
CONVENTIONAL							
CHLORINE/BROMINE, FREE AVAIL.	µg/L	500	200	SAME	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	NOTE 4	Note 4	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
ǂ	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

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: 500 µg/L daily maximum, 200 µg/L monthly average; monthly sampling and limitations continued from previous permit; mg/L switched to µg/L for permit continuity. The facility may sample for this parameter at outfall #001 because there is no sampling location after debromination for the cooling towers. See Rationale in Part III. 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.

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. There is no schedule of compliance allowed for this parameter and will be established as annual monitoring and reporting.

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. There is no schedule of compliance allowed for this parameter and will be established as annual monitoring and reporting.

126 PRIORITY POLLUTANTS:

126 Priority Pollutants
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. See special condition #6 in the permit. These are shown as tables in the permit. The facility is currently providing safety data sheets showing the facility does not discharge the pollutants in table A other than chromium and zinc; 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. An electronic folder has been established in the central office permit file for the SDS documents.

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.
- ✓ The facility will enter data for wet weather and dry weather for outfall #001 individually. The permittee will refer to limit sets DM and DQ for dry data monthly and quarterly respectively, and WQ for wet weather quarterly.

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 generally continued from the previous permit. The permit writer changed "composite" to grab" for wet tests to match the sampling type of the other parameters in the permit to follow the permit writer's manual. 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 will 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 would normally be synchronized by expiring the 1st quarter of 2020. However, this permit received several comments regarding the restrictive schedule and significant planned changes at the facility. The Department has accepted the comments and will issue a five year permit in this instance as part of the negotiation process.

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 May 4, 2018 to June 4 2018. The Department received two comment letters.

Comment 1: Groundwater Monitoring
The facility has undertaken a massive plant upgrade to convert from coal to natural gas. The upgrade includes the clean closure of Mores Lake (former ash pond) in accordance with 40 CFR § 257.102. The City has been proactive in complying with the federal CCR rule and the plan meets the requirements of clean closure, which is currently underway. The coal combustion residuals are being thoroughly removed and the CCR unit site will be decontaminated. The City's plan also includes post-closure care which follows the requirements of 40 CFR § 257.104.

The City currently has groundwater wells in place and has obtained approval of our Groundwater Monitoring Program by the Missouri Geological Survey. With Missouri Geological Survey's approval of the Groundwater Monitoring Program, we respectfully request an edit to Special Condition #2. that removes the last sentence in part (c), starting with, "*However, if installation occurs prior to approval, the WPP and MGS reserve the right to insist on additional wells or changes to the network.*"

Additionally, we request that groundwater monitoring requirements cease after clean closure is completed per 40 CFR § 257.102(c) and the groundwater monitoring concentrations do not exceed the groundwater protection standards per 40 CFR § 257.95(h) for constituents listed in Appendix IV of the Rule. Please include in Special Condition #2 a condition that the City of Columbia can cease groundwater monitoring when there has been no exceedance of groundwater protection standards for a total of eight contiguous quarterly samples. The City of Columbia is taking steps necessary to ensure that the site does not cause an impact to groundwater quality. Once eight contiguous samples show no excursion of groundwater quality standards, additional sampling requirements would not be reasonable or necessary to protect water quality or human health and safety.

Also, the Fact Sheet discusses the requirements of the City's Groundwater Monitoring Program. It should be recognized within the permit that the City has already gone through the approval process with the Missouri Geological Survey. The City of Columbia has worked with the Missouri Geological Survey to ensure that their concerns have been addressed with their Groundwater Monitoring Program. Please acknowledge that the City has an established and approved Groundwater Monitoring Program within the Fact Sheet.

Finally, we respectfully disagree with what appears to be standard template language within the Groundwater Monitoring section of the Fact Sheet on Page 11. The last sentence of the Groundwater Monitoring section currently states, "Data and submittals driven by 40 CFR 257 are not approved by the water protection program." While we understand that this is template language and the Water Protection Program has not reviewed or approved samples taken previously to meet requirements of 40 CFR 257, we do not believe that this should negate the opportunity for the City of Columbia to use previously collected samples to meet the sampling requirements set by the Water Protection Program when taken appropriately. The Water Protection Program should not penalize the City for promptly meeting requirements set forth by the Environmental Protection Agency in an effort to work towards and ensure environmental compliance.

Response #1
The permit writer appreciates the facility's pledge to clean closure of More's Lake. The permit writer does not believe the groundwater monitoring language negates the facility's ability to submit data obtained under 40 CFR 257 directives. However, the groundwater monitoring requirements will stand as written; the Department has legal authority under 10 CSR 20-7 to assess contamination to groundwater regardless if the facility falls under other federal rules. Additionally, after clean closure, the facility may submit groundwater samples collected under the federal rule and request a permit modification to have the groundwater monitoring conditions reevaluated or possibly removed from the permit.

The language above requested for removal was removed; the fact sheet was updated to show the facility has established a groundwater monitoring program under the council of the Geological Survey.

Comment #2: Total Hardness
The hardness value used to derive copper limits for Outfall 001 Dry Weather (373 mg/L as $CaCO_3$) was taken from the previous permit for Outfall 002. This hardness value may be appreciably less than the actual post-upgrade hardness concentration at Outfall 001 Dry Weather.

We plan to collect sufficient post-upgrade hardness data and submit a permit modification request to revise the copper limits based on the hardness data collected.

We request that language be added to the permit fact sheet that acknowledges the Missouri Department of Natural Resources' (MDNR's) agreement to modify copper limits based on sufficient hardness data to be collected at Outfall 001 Dry Weather. Please insert the following language (in italics) at the bottom of Page 20 of the fact sheet immediately below the copper AML value.

The hardness value used to derive copper limits (373 mg/L) was taken from the previous permit for Outfall 002. This hardness value may be appreciably less than the actual post-upgrade hardness concentration at Outfall 001 Dry Weather. The permit may be modified with revised copper effluent limits based on sufficient post-upgrade hardness measurements.

Also, the draft permit does not contain hardness monitoring requirements for Outfall 001 Dry Weather. If the addition of a hardness monitoring requirement is needed to solidify a permit modification to adjust copper limits, then we request that a hardness monitoring requirement be added to Outfall 001 Dry Weather.

Response #2
The permit writer notes the permittee may submit representative hardness data to the Department without a monitoring requirement placed in the permit. The permittee may supply the data in deference to a modification request or with the application for permit renewal. The permittee may submit a modification request per RSMo 644.051.9. The fact sheet was modified to include the reference to the statute; a section entitled “Modification Requests” was placed in Part III.

DATE OF FACT SHEET: JUNE 26, 2018

COMPLETED BY:
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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.

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.

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.
   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 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

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.

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.

CITY OF COLUMBIA, MISSOURI

RECEIVED
JAN 11 2017
Water Protection Program

WATER AND LIGHT DEPARTMENT
COLUMBIA TERMINAL RAILROAD

January 5, 2017

Ms. Pamela Hackler
Missouri Department of Natural Resources
Water Protection Program
PO Box 176
Jefferson City, MO 65102

Re: Application Submittal for NPDES Permit No. MO-00004979 – Columbia Municipal Power Plant

Dear Ms. Hackler:

Enclosed with this letter is the application for the renewal of NPDES Permit No. MO-00004979 issued to the Columbia Municipal Power Plant (CMPP). The CMPP has a rated capacity of 86 megawatts. Please review the application and contact me with any questions.

The CMPP is undergoing a substantial upgrade to convert our fuel source from coal to natural gas and biofuels. Coal combustion ceased in September 2015 and all coal has since been removed from the site. The upgrades will result in the discontinuation of coal ash transport water production (the primary source of metals), which has historically been the water source that flows through Outfall 002. We anticipate the elimination of coal and coal ash will markedly reduce Outfall 002 metals concentrations. Our upgrade project began with drainage of the Ash Pond (Pond) prior to our current Pond dredging and "clean closure" project. During the dredging process, dredged coal ash will remain stored onsite until it is hauled offsite. We anticipate all coal ash will be removed from the site by April 2020. In addition to the Pond closure, we are in the process of determining if one our boilers (Boiler #7) can be converted to bio-mass fuel. Also, our natural gas boiler (Boiler #8) has been out of service since March 2016 on account of a NOx reduction project. With these modifications underway the CMPP power generation has ceased and is not forecasted to return to service until the summer 2017.

With the cessation of operations at the CMPP, discharge from Outfall 001 and 002 has become intermittent, occurring only during storms (Outfall 001) or when the Pond water levels must be lowered to continue dredging operations (Outfall 002). These intermittent discharges will not be characteristic of those expected when the CMPP becomes operational. To satisfy the needs of the permit application's Forms C and D, we have included as much discharge data as we have available, noting that the results will not be representative of expected future water quality, which we anticipate will be greatly improved as a result of the CMPP upgrade. For Outfall 001,

105 EAST ASH STREET • P.O. BOX 6015 • COLUMBIA, MISSOURI 65205-6015
(573) 874-7325 • FAX (573) 443-6875 • TTY (573) 874-7698

Form C was completed using all available data collected during the last permit cycle's required sampling, while Form D is represented by the East Cooling Tower Blowdown priority pollutant sampling conducted in 2014. The East Cooling Tower Blowdown was the primary process water source discharging to Outfall 001 and is therefore considered representative. Outfall 002's Form C data include those quarterly and monthly samples collected during the permit cycle. Data in Form D for Outfall 002 are represented by priority pollutant sampling conducted on the West Cooling Tower Blowdown in 2014. The West Cooling Tower Blowdown is anticipated to make up the bulk of the flow through Outfall 002 once all upgrades have been completed. As discussed with MDNR staff, CMPP will sample for all parameters which had non-contemporaneous or omitted results in the permit application after operations have resumed.

During the past permit cycle, there were two operational conditions that resulted in elevated levels of specific metals at Outfall 002. First, in December 2014 and February 2015, City staff extinguished coal fires in the CMPP coal pile (the coal pile has since been removed). The coal pile was drenched for extended periods with drainage discharging into the Pond and ultimately through Outfall 002. Second, during the Pond closure process, elevated effluent concentrations were measured during Pond pumping operations in 2015. Corrective actions were taken and MDNR correspondence was submitted for both operational conditions. Both events were atypical of past and future operating conditions.

As stated previously, the CMPP is currently undergoing upgrades and Pond remediation to remain in compliance with environmental regulations. These upgrades will have a markedly beneficial effect on water quality from Outfalls 001 and 002. Any previously measured elevated levels of monitored parameters, such as events described in the previous paragraph, do not represent future operating conditions and should not result in an effluent limit. Therefore, we respectfully request continuation of the 'monitoring only' parameters at Outfalls 001 and 002 until sufficient data has been collected to adequately characterize these new operating conditions. We are available to provide any further clarification that may be needed during MDNR's data review and effluent limits development process.

Also, we request that the total suspended solids (TSS) effluent limits at Outfall 001 be re-evaluated and potentially removed. The existing 50 mg/L TSS limit at Outfall 001 was mandated by the Steam Electric Generating Point Source Category Effluent Guidelines for coal pile runoff. As previously stated, there no longer is a coal pile, so the basis for this limit has been removed. Lastly, with the coal pile removed, we request that monitoring at Outfall 001 not be required to be conducted during a rainfall event.

Please let us know if further information may be required as this application is reviewed.

Sincerely,

Christian Johanningmeier, P.E.
Power Production Superintendent

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	
DATE RECEIVED 1-11-17	FEE SUBMITTED

Note ▶ PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

- ☐ An operating permit for a new or unpermitted facility:
  Please indicate the original Construction Permit # _____
- ☑ An operating permit renewal:
  Please indicate the permit # MO- 0004979 Expiration Date 07/05/2017
- ☐ An operating permit modification:
  Please indicate the permit # MO-_____ Modification Reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) ☑ YES ☐ NO

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE / FAX	
Columbia Municipal Power Plant		(573) 874-6236 / (573) 874-1583	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
1501 Business Loop 70 East	Columbia	MO	65201

3. OWNER

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
City of Columbia		(573) 874-7325 / (573) 443-6875	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
701 East Broadway	Columbia	MO	65201

3.1 Request review of draft permit prior to public notice? ■ YES ☐ NO

4. CONTINUING AUTHORITY

NAME	EMAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX	
Same as Owner			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE / FAX	
Christian Johanningmeier	N/A	(573) 874-6236 / (573) 874-1583	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
1501 Business Loop 70 East	Columbia	MO	65201

6. FACILITY CONTACT

NAME	TITLE / E-MAIL ADDRESS	TELEPHONE NUMBER WITH AREA CODE / FAX
Christian Johanningmeier christian.johanningmeier@como.gov	Power Plant Superintendent	(573) 874-6236 / (573) 874-1583

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 NE ¼ NW ¼ Sec 7 T 48N R 12W Boone County
UTM Coordinates Easting (X): _____ Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 SW ¼ SE ¼ Sec 6 T 48N R 12W Boone County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 ____ ¼ ____ ¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____ ¼ ____ ¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 – SIC 4911 and NAICS 221112 002 – SIC 4911 and NAICS 221112
003 – SIC _____ and NAICS _____ 004 – SIC _____ and NAICS _____

MO 780-1479 (09-16)

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Water Protection Program

8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION (Complete all forms that are applicable.)

A.	Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C or 2F. (2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.)	YES ☐	NO ☑
B.	Is application for storm water discharges only? If yes, complete Form C or 2F.	YES ☐	NO ☑
C.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C or 2F and D.	YES ☑	NO ☐
D.	Is wastewater land applied? If yes, complete Form I.	YES ☐	NO ☑
E.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES ☑	NO ☐
F.	If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.		
F.	Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.		

9. 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.

10. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions. (PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME			
#001 David Rogers, #002 Columbia Public Works			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
1400 Business Loop 70 East, 701 East Broadway	Columbia	MO	65201

11. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Christian Johanningmeier, PE - Power Production Superintendent	(573) 874-6236
SIGNATURE	**DATE SIGNED**
Christian Johanningmeier	1/5/2017

MO 780-1479 (09-16)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.

Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

- ☐ Appropriate Fees?
- ☐ Map at 1" = 2000' scale?
- ☐ Signature?
- ☐ Form C or 2F, if applicable?
- ☐ Form D, if applicable?
- ☐ Form I (Irrigation), if applicable?
- ☐ Form R (Sludge), if applicable?
- ☐ Revised Nutrient Management Plan, if applicable?

INSTRUCTIONS FOR COMPLETING FORM A - APPLICATION FOR NONDOMESTIC PERMIT

1. Check which option is applicable. **Do not check more than one item.** Nondomestic permit refers to permits issued by the Department of Natural Resources' Water Protection Program for all **nondomestic** wastewater treatment facilities, including all industry, stormwater, and Class IA Concentrated Animal Feeding Operations (CAFO). **This includes all nondomestic wastewater treatment facilities that incorporate domestic wastewater into the operating permit.**

1.1 OPERATING PERMIT FEES

If the application is for a site-specific permit re-issuance, send no fees. You will be invoiced separately by the department.

Discharges covered by section 644.052.4 RSMo. (Primary or Categorical Facilities)

$3,500 for a design flow under 1 mgd

$5,000 for a design flow of 1 mgd or more

A. Discharges covered by section 644.052.5 RSMo. (Secondary or Noncategorical Facilities).

$1,500 for a design flow under 1 million gallons per day (mpg)

$2,500 for a design flow of 1 mgd or more

SITE-SPECIFIC STORMWATER DISCHARGE FEES

A. $1,350 for a design flow under 1 mgd

B. $2,350 for a design flow of 1 mgd or more

CAFO OPERATING PERMIT FEES

A. $5,000 for site-specific permit (Class IA)

OPERATING PERMIT MODIFICATIONS are subject to the following fees:

A. Major Modifications - 25 percent of annual fee.

B. Minor Modifications (in accordance with 40 CFR 122.63, including transfers) - $100

Note: Facility name and address changes where owner, operator and continuing authority remain the same are not considered transfers.

Incomplete permit applications and/or related engineering documents will be returned by the department if they are not completed in the time frame established in a comment letter from the department to the owner. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.

2. Facility - Provide the name by which this facility is known locally. Example: Southwest Sewage Treatment Plant, Country Club Mobile Home Park, etc. Also include the street address or location of the facility. If the facility lacks a street name or route number, give the names of the closest intersection, highway, county road, etc.

3. Owner - Provide the legal name and address of owner.

3.1 Prior to submitting a permit to public notice, the department shall provide the permit applicant 15 days to review the draft permit for nonsubstantive drafting errors. In the interest of expediting permit issuance, permit applicants may waive the opportunity to review draft permits prior to public notice. Check YES to review the draft permit prior to public notice. Check NO to waive the process and expedite the permit.

4. Continuing Authority - Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is available at http://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf or contact the appropriate Department of Natural Resources regional office.

5. Operator - Provide the name, certificate number and telephone number of the person operating the facility.

6. Provide the name, title and work telephone number of a person who is thoroughly familiar with the operation of the facility and with the facts reported in this application and who can be contacted by the department, if necessary.

7.1 An outfall is the point at which wastewater is discharged. Outfalls should be given in terms of the legal description of the facility. Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used at the outfall pipe and the displayed coordinates submitted. If access to a GPS receiver is not available, please use a mapping system to approximate the coordinates; the department's mapping system is available at www.dnr.mo.gov/internetmapviewer/.

7.2 List only your primary Standard Industrial Classification, or SIC, and North American Industry Classification System code for each outfall. The SIC system was devised by the U.S. Office of Management and Budget to cover all economic activities. To find the correct SIC code, an applicant may check his or her unemployment insurance forms or contact the Missouri Division of Employment Security, 573-751-3215. The primary SIC code is that of the operation that generates the most revenue. If this information is not available, the number of employees or, secondly, production rate may be used to determine your SIC code. Additional information for Standard Industrial Codes can be found at www.osha.gov/pls/imis/sicsearch.html and for the North American Industry Classification System at www.census.gov/naics or contact the appropriate Department of Natural Resources regional office.

8. If you answer yes to A, B, C, D, or E, then you must complete and file the supplementary form(s) indicated. A U.S. Geological Survey 1" = 2,000' scale map must be submitted with the permit application showing all outfalls, the receiving stream and the location of the downstream property owners. This type of map is available at www.dnr.mo.gov/internetmapviewer/ or from the Missouri Department of Natural Resources' Geological Survey in Rolla at 573-368-2125.

INSTRUCTIONS FOR COMPLETING FORM A - APPLICATION FOR NONDOMESTIC PERMIT (CONTINUED)

9. Electronic Discharge Monitoring Report (eDMR) Submission System – Visit the eDMR site at http://dnr.mo.gov/env/wpp/edmr.htm and click on the "Facility Participation Package" link. The eDMR Permit Holder and Certifier Registration Form and information about the eDMR system can be found in the Facility Participation Package.

   Waivers to electronic reporting may be granted by the department per 40 CFR 127.15 under certain, special circumstances. A written request must be submitted to the Department for approval. Waivers may be granted to facilities owned or operated by:
   A. members of religious communities that choose not to use certain technologies or
   B. permittees located in areas with limited broadband access. The National Telecommunications and Information Administration (NTIA) in collaboration with the Federal Communications Commission (FCC) have created a broadband internet availability map: http://www.broadbandmap.gov/. Please contact the department if you need assistance.

10. Please provide the name and address of the first downstream landowner, different from that of the permitted facility, through whose property the discharge will flow. Also, please indicate the location on the map. For discharges that leave the permitted facility and flow under a road or highway, or along the right-of-way, the downstream property owner is the landowner that the discharge flows to after leaving the right-of-way. For no discharge facilities, provide this information for the location where discharge would flow if there was one. For land application sites, include the owners of the land application sites and all adjacent landowners.

11. Signature - All applications must be signed as follows and the signature must be **original**:
   A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.
   B. For a partnership or sole proprietorship, by a general partner or the proprietor.
   C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

This completed form, along with the applicable permit fees, should be submitted to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176. Submittal of an incomplete application may result in the application being returned. A map of the department's regional offices with addresses and phone numbers can be viewed at www.dnr.mo.gov/regions/ro-map.pdf. If there are any questions concerning this form, contact the appropriate regional office or the Department of Natural Resources' Water Protection Program, Operating Permits Section at 800-361-4827 or 573-751-6825.

For More Information
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
800-361-4827 or 573-751-1300
www.dnr.mo.gov/env/wpp/index.html

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM C – APPLICATION FOR DISCHARGE PERMIT – MANUFACTURING, COMMERCIAL, MINING, SILVICULTURE OPERATIONS, PROCESS AND STORMWATER

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY

Columbia Municipal Power Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER

MO - 0004979

1.20 THIS IS A NEW FACILITY AND WAS CONSTRUCTED UNDER MISSOURI CONSTRUCTION PERMIT NUMBER (COMPLETE ONLY IF THIS FACILITY DOES NOT HAVE AN OPERATING PERMIT).

N/A

2.00 LIST THE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES APPLICABLE TO YOUR FACILITY (FOUR DIGIT CODE)

A. FIRST 4911 B. SECOND _____

C. THIRD _____ D. FOURTH _____

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) _____1/4 _____1/4 SEC_____ T_____ R_____ _____COUNTY

OUTFALL NUMBER 001: NE 1/4; NW 1/4; SEC 7; T 48N; R 12W; Boone County

OUTFALL NUMBER 002: SW 1/4; SE 1/4; SEC 6; T 48N; R 12 W; Boone County

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST)	RECEIVING WATER
#001	Unnamed Tributary to Bear Creek
#002	Unnamed Tributary to Bear Creek

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS

Steam electric power generation

The City of Columbia Municipal Power Plant is undergoing a substantial upgrade to convert the fuel source from coal to natural gas and biofuels. This upgrade will result in the discontinuation of ash transport water production. Currently remediation of the ash pond and upgrades to the boilers are underway. The plant is not expected to be back in operation until the summer of 2017.

RECEIVED
JAN 11 2017
Water Protection Program

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, public sewers and outfalls. If a water balance cannot by determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of 1. All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water and storm water runoff. 2. The average flow contributed by each operation. 3. The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
(LIST)	A. OPERATION (LIST)	B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)	A. DESCRIPTION	B. LIST CODES FROM TABLE A
001		0.107 MGD		
Storm Water Runoff				
Cooling Tower				1-F
002		0.132 MGD		
Plant Drains			Settling Pond	1-U
Stromwater Runoff			Settling Pond	1-U
Steam Boilers			Settling Pond	1-U
Cooling Tower			Settling Pond	1-U

2.40 CONTINUED

C. EXCEPT FOR STORM RUNOFF, LEAKS OR SPILLS, ARE ANY OF THE DISCHARGES DESCRIBED IN ITEMS A OR B INTERMITTENT OR SEASONAL?

☑ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☐ **NO** *(GO TO SECTION 2.50)*

1. OUTFALL NUMBER *(list)*	2. OPERATION(S) CONTRIBUTING FLOW *(list)*	3. FREQUENCY		4. FLOW				C. DURATION *(in days)*
				A. FLOW RATE *(in mgd)*		B. TOTAL VOLUME (specify with units)		
		A. DAYS PER WEEK *(specify average)*	B. MONTHS PER YEAR *(specify average)*	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	4. LONG TERM DAILY	3. MAXIMUM AVERAGE	
001	Cooling Tower Blowdown			0.107				

2.50 MAXIMUM PRODUCTION

A. DOES AN EFFLUENT GUIDELINE LIMITATION PROMULGATED BY EPA UNDER SECTION 304 OF THE CLEAN WATER ACT APPLY TO YOUR FACILITY?

☐ **YES** *(COMPLETE B.)* ☑ **NO** *(GO TO SECTION 2.60)*

B. ARE THE LIMITATIONS IN THE APPLICABLE EFFLUENT GUIDELINES EXPRESSED IN TERMS OF PRODUCTION (OF OTHER MEASURE OF OPERATION)?

☐ **YES** *(COMPLETE c.)* ☑ **NO** *(GO TO SECTION 2.60)*

C. IF YOU ANSWERED "YES" TO B. LIST THE QUANTITY THAT REPRESENTS AN ACTUAL MEASUREMENT OF YOUR MAXIMUM LEVEL OF PRODUCTION, EXPRESSED IN THE TERMS AND UNITS USED IN THE APPLICABLE EFFLUENT GUIDELINE AND INDICATE THE AFFECTED OUTFALLS.

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS *(list outfall numbers)*
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	

2.60 IMPROVEMENTS

A. ARE YOU NOW REQUIRED BY ANY FEDERAL, STATE OR LOCAL AUTHORITY TO MEET, ANY IMPLEMENTATION SCHEDULE FOR THE CONSTRUCTION, UPGRADING OR OPERATION OF WASTEWATER TREATMENT EQUIPMENT OR PRACTICES OR ANY OTHER ENVIRONMENTAL PROGRAMS THAT MAY AFFECT THE DISCHARGES DESCRIBED IN THIS APPLICATION? THIS INCLUDES, BUT IS NOT LIMITED TO, PERMIT CONDITIONS, ADMINISTRATIVE OR ENFORCEMENT ORDERS, ENFORCEMENT COMPLIANCE SCHEDULE LETTERS, STIPULATIONS, COURT ORDERS AND GRANT OR LOAN CONDITIONS.

☐ **YES** *(COMPLETE THE FOLLOWING TABLE)* ☑ **NO** *(GO TO 3.00)*

1. IDENTIFICATION OF CONDITION AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED
			The Columbia Municipal Power Plant is voluntarily performing remediation of its ash storage pond and converting furnaces from coal to natural gas and biofuels.		

B. OPTIONAL: YOU MAY ATTACH ADDITIONAL SHEETS DESCRIBING ANY ADDITIONAL WATER POLLUTION CONTROL PROGRAMS *(OR OTHER ENVIRONMENTAL PROJECTS WHICH MAY AFFECT YOUR DISCHARGES)* YOU NOW HAVE UNDER WAY OR WHICH YOU PLAN. INDICATE WHETHER EACH PROGRAM IS NOW UNDER WAY OR PLANNED, AND INDICATE YOUR ACTUAL OR PLANNED SCHEDULES FOR CONSTRUCTION.

☐ **MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED.**

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

A. & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.
NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

C. USE THE SPACE BELOW TO LIST ANY OF THE POLLUTANTS LISTED IN PART B OF THE INSTRUCTIONS, WHICH YOU KNOW OR HAVE REASON TO BELIEVE IS DISCHARGED OR MAY BE DISCHARGED FROM ANY OUTFALL. FOR EVERY POLLUTANT YOU LIST, BRIEFLY DESCRIBE THE REASONS YOU BELIEVE IT TO BE PRESENT AND REPORT ANY ANALYTICAL DATA IN YOUR POSSESSION.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
001 and 002 Metals	measured at outfall		
001 and 002 chlorine	Cooling chemical additives		

3.10 BIOLOGICAL TOXICITY TESTING DATA

DO YOU HAVE ANY KNOWLEDGE OR REASON TO BELIEVE THAT ANY BIOLOGICAL TEST FOR ACUTE OR CHRONIC TOXICITY HAS BEEN MADE ON ANY OF YOUR DISCHARGES OR ON RECEIVING WATER IN RELATION TO YOUR DISCHARGE WITHIN THE LAST THREE YEARS?

☑ YES (IDENTIFY THE TEST(S) AND DESCRIBE THEIR PURPOSES BELOW.) ☐ NO (GO TO 3.20)

WET testing is conducted as required by the permit.

Outfall #002
Acute toxicity testing, using Ceriodaphnia dubia and Pimephales promelas, October 2014, January 2015, March 2015, August 2015, and July 2016

3.20 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

☑ **YES** *(LIST THE NAME, ADDRESS AND TELEPHONE NUMBER OF AND POLLUTANTS ANALYZED BY EACH SUCH LABORATORY OR FIRM BELOW.)* ☐ **NO** *(GO TO 3.30)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
PACE Analytical	9608 Loiret Blvd. Lenexa, KS 66219	(913)599-5665	Acute toxicity

3.30 CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS APPLICATION AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Christian Johanningmeier, PE - Power Production Superintendent	(573) 874-6236
SIGNATURE (SEE INSTRUCTIONS)	DATE SIGNED
Christian Johanningmeier	1-5-2017

PLEASE PRINT OR TYPE. You may report some or all of this information on separate sheet *(Use the same format)* instead of completing these pages.
SEE INSTRUCTIONS

FORM C
TABLE 1 FOR 3.00 ITEM A AND B

INTAKE AND EFFLUENT CHARACTERISTICS

OUTFALL NO. 001

PART A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
A. Biochemical Oxygen Demand (BOD)	19.00				3.82		29	mg/L				
B. Chemical Oxygen Demand (COD)	250				37.2		29	mg/L				
C. Total organic Carbon (TOC)	4.11							mg/L				
D. Total Suspended Solids (TSS)	250				26.0		29	mg/L				
E. Ammonia *(as N)*	<0.10											
F. Flow	VALUE		VALUE		VALUE					VALUE		
G. Temperature *(winter)*	VALUE NA		VALUE		VALUE			°C		VALUE		
H. Temperature *(summer)*	VALUE NA		VALUE		VALUE			°C		VALUE		
I. pH	MINIMUM 6.5	MAXIMUM 9.4	MINIMUM	MAXIMUM	[redacted]			STANDARD UNITS		[redacted]		

PART B – Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark column 2A for any pollutant, you must provide the results for at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
CONVENTIONAL AND NONCONVENTIONAL POLLUTANTS														
A. Bromide (24959-67-9)	X													
B. Chlorine, Total Residual	X		1.07				0.05		115	mg/L				
C. Color	X													
D. Fecal Coliform		X												
E. Fluoride (16984-48-8)	X		0.96							mg/L				
F. Nitrate - Nitrate *(as N)*		X												

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
G. Nitrogen, Total Organic *(as N)*		X												
H. Oil and Grease	X		2.6				2.13		29	mg/L				
I. Phosphorus *(as P)*, Total (7723-14-0)	X		0.11							mg/L				
J. Sulfate *(as SO^4)* (14808-79-8)	X		1400				631		29	mg/L				
K. Sulfide *(as S)*		X												
L. Sulfite (as SO^3) (14265-45-3)		X												
M. Surfactants		X												
N. Aluminum, Total (7429-90-5)	X		620				157		17	ug/L				
O. Barium, Total (7440-39-3)		X												
P. Boron, Total (7440-42-8)		X												
Q. Cobalt, Total (7440-48-4)		X												
R. Iron, Total (7439-89-6)	X		1900				611		17	ug/L				
S. Magnesium, Total (7439-95-4)	X		1400				181		13	mg/L				
T. Molybdenum, Total (7439-98-7)		X												
U. Manganese, Total (7439-96-5)	X		0.03							mg/L				
V. Tin, Total (7440-31-5)		X												
W. Titanium, Total (7440-32-6)		X												

1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. BELIEVED PRESENT	B. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-9)	X		20.0				3.05		17	ug/L				
2M. Arsenic, Total (7440-38-2)	X		52				17.5		17	ug/L				
3M. Beryllium, Total (7440-41-7)	X		0.60				0.38		17	ug/L				
4M. Cadmium, Total (7440-43-9)	X		2.0				2.0		17	ug/L				
5M. Chromium III (16065-83-1)	X		20.0				8.37		15	ug/L				
6M. Chromium VI (18540-29-9)	X		10.0				3.77		13	ug/L				
7M. Copper, Total (7440-50-8)	X		340				49		16	ug/L				
8M. Lead, Total (7439-92-1)	X		6.3				3.19		17	ug/L				
9M. Mercury, Total (7439-97-6)	X		0.20				0.09		17	ug/L				
10M. Nickel, Total (7440-02-0)	X		150				19.00		17	ug/L				
11M. Selenium, Total (7782-49-2)	X		47				9.6		17	ug/L				
12M. Silver, Total (7440-22-4)	X		48.00				3.44		17	ug/L				
13M. Thallium, Total (7440-28-0)	X		10.0				3.01		17	ug/L				
14M. Zinc, Total (7440-66-6)	X		107.8				89.2		17	ug/L				
15M. Cyanide, Amenable to Chlorination	X		17.0				3.38		17	ug/L				
16M. Phenols, Total		X												
RADIOACTIVITY														
(1) Alpha Total		X												
(2) Beta Total		X												
(3) Radium Total		X												
(4) Radium 226 Total		X												

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE PERMIT FORM C – MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS.

All blanks must be filled in when the application is submitted to the appropriate regional office (see map). The form must be signed as indicated.

This application is to be completed only for wastewater facilities with a discharge. Include any facility with possibility of discharge, even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, then sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility – By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

2.00 List in descending order of significance the four digit Standard Industrial Classification (SIC) codes that best describe your facility in terms of the principal products or services you produce or provide. Also, specify each classification in words.

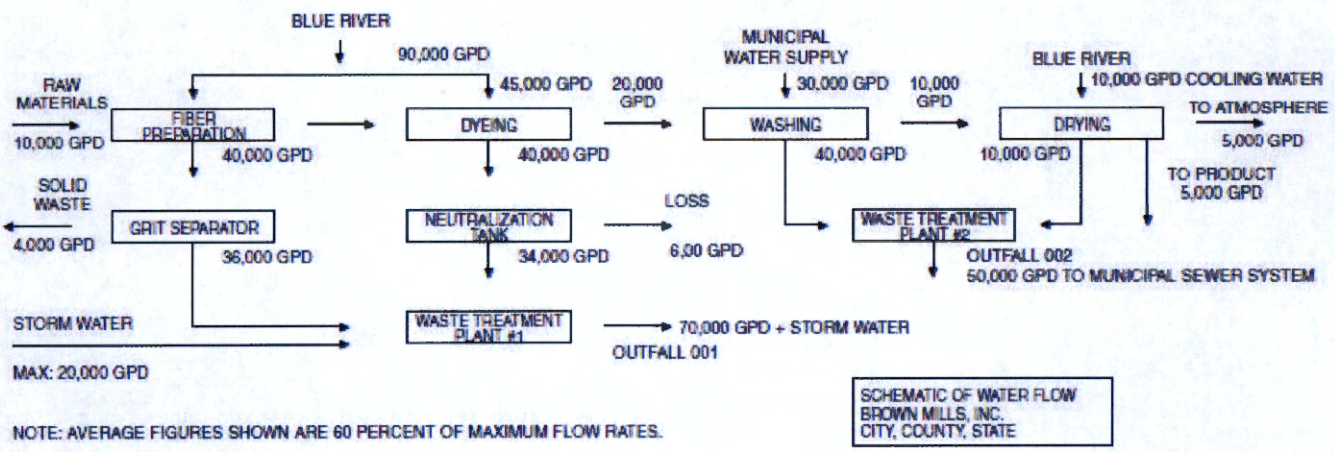
SIC code numbers are descriptions that may be found in the "Standard Industrial Classification Manual" prepared by the Executive Office of the President, Office of Management and Budget, that is available from the Government Printing Office, Washington, D.C. Use the current edition of the manual. If you have any questions concerning the appropriate SIC code for your facility, contact the Missouri Department of Natural Resources Regional office in your area (see map).

2.10 Point of discharge should be given in terms of the legal description of the waste treatment plant, location or sufficient information so that it may be located.

2.20 Receiving Water – the name of the stream to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

2.30 Self-explanatory.

2.40 A. The line drawing should show generally the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water and storm water runoff. You may group similar operations into a single unit labeled to correspond to the more detailed listing. The water balance should show average and maximum flows. Show all significant losses of water to products, atmosphere, discharge and public sewer systems. You should use actual measurements whenever available; otherwise, use your best estimate. An example of any acceptable line drawing appears below.



B. List all sources of wastewater to each outfall. Operations may be described in general terms (for example, "dye-making reactor" or a distillation tower"). You may estimate the flow contributed by each source if no data is available, and for storm water, you may use any reasonable measure of duration, volume or frequency. For each treatment unit, indicate its size, flow rate and retention time, and describe the ultimate disposal of any solid or liquid wastes not discharged. Treatment units should be listed in order and you should select the proper code from Table A to fill in column 3B for each treatment unit. Insert "XX" into column 3B if no code corresponds to a treatment unit you list.

TABLE A – CODES FOR TREATMENT UNITS

PHYSICAL TREATMENT PROCESSES

1-A	Ammonia Stripping	1-M	Grit Removal
1-B	Dialysis	1-N	Microstraining
1-C	Diatomaceous Earth Filtration	1-O	Mixing
1-D	Distillation	1-P	Moving Bed Filters
1-E	Electrodialysis	1-Q	Multimedia Filtration
1-F	Evaporation	1-R	Rapid Sand Filtration
1-G	Flocculation	1-S	Reverse Osmosis (Hyperfiltration)
1-H	Flotation	1-T	Screening
1-I	Foam Fractionation	1-U	Sedimentation (Settling)
1-J	Freezing	1-V	Slow Sand Filtration
1-K	Gas-Phase Separation	1-W	Solvent Extraction
1-L	Grinding (Comminutors)	1-X	Sorption

CHEMICAL TREATMENT PROCESSES

2-A	Carbon Absorption	2-G	Disinfection (Ozone)
2-B	Chemical Oxidation	2-H	Disinfection (Other)
2-C	Chemical Precipitation	2-I	Electrochemical Treatment
2-D	Coagulation	2-J	Ion Exchange
2-E	Dechlorination	2-K	Neutralization
2-F	Disinfection (Chlorine)	2-L	Reduction

BIOLOGICAL TREATMENT PROCESSES

3-A	Activated Sludge	3-E	Pre-Aeration
3-B	Aerated Lagoons	3-F	Spray Irrigation/Land Application
3-C	Anaerobic Treatment	3-G	Stabilization Ponds
3-D	Nitrification-Denitrification	3-H	Trickling Filtration

OTHER PROCESSES

4-A	Discharge to Surface Water	4-C	Reuse/Recycle of Treated Effluent
4-B	Ocean Discharge Through Outfall	4-D	Underground Injection

SLUDGE TREATMENT AND DISPOSAL PROCESSES

5-A	Aerobic Digestion	5-M	Heat Drying
5-B	Anaerobic Digestion	5-N	Heat Treatment
5-C	Belt Filtration	5-O	Incineration
5-D	Centrifugation	5-P	Land Application
5-E	Chemical Conditioning	5-Q	Landfill
5-F	Chlorine Treatment	5-R	Pressure Filtration
5-G	Composting	5-S	Pyrolysis
5-H	Drying Beds	5-T	Sludge Lagoons
5-I	Elutriation	5-U	Vacuum Filtration
5-J	Flotation Thickening	5-V	Vibration
5-K	Freezing	5-W	Web Oxidation
5-L	Gravity Thickening		

2.40 C. A discharge is intermittent unless it occurs without interruption during the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Fill in every applicable column in this item for each source of intermittent or seasonal discharges. Base your answers on actual data whenever available; otherwise, provide your best estimate. Report the highest daily value for flow rate and total volume in the "Maximum Daily" columns. Report the average of all daily values measures during days when discharge occurred within the last year in the "Long Term Average" columns.

2.50 A. All effluent guidelines promulgated by EPA appear in the Federal Register and are published annually in 40 CPR Subchapter N. A guideline applies to you if you have any operations contributing process wastewater in any subcategory covered by BPT, BCT, or BAT guidelines. If you are unsure whether you are covered by a promulgated effluent guideline, check with your Missouri Department of Natural Resources' Regional Office. You must check yes if an applicable effluent guideline has been promulgated, even if the guideline limitations are being contested in court. If you believe that a promulgated effluent guideline has been remanded for reconsideration by a court and does not apply to your operations, you may check no.

B. An effluent guideline is expressed in terms of production (or other measure of operation) if the limitations are expressed as mass of pollutant per operational parameter; for example, "pounds of BOD per cubic foot of logs from which bark is removed," or "pounds of TSS per megawatt hour of electrical energy consumed by smelting furnace." An example of a guideline not expressed in terms of a measure of operation is one which limits the concentration of pollutants.

C. This item must be completed only if you checked yes to item B. The production information requested here is necessary to apply effluent guidelines to your facility and you may not claim it as confidential. However, you do not have to indicate how the reported information was calculated.

Report quantities in the units of measurement used in the applicable effluent guideline. The figures provided must be a measure of actual operation over a one month period, such as the production for the highest month during the last twelve months, or the monthly average production for the highest year of the last five years, or other reasonable measure of actual operation, but may not be based on design capacity or on predictions of future increases in operation.

2.60 A. If you check yes to this question, complete all parts of the chart, or attach a copy of any previous submission you have made containing the same information.

B. You are not required to submit a description of future pollution control projects if you do not wish to or if none is planned.

3.00 These items require you to collect and report data on the pollutants discharged from each of your outfalls. Each part of this item addresses a different set of pollutants and must be completed in accordance with the specific instructions for that part. The following general instructions apply to the entire item.

GENERAL INSTRUCTIONS. Part A requires you to report at least one analysis for each pollutant. Part B requires you to mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2A or 2B, Part B) based on you best estimate, and test for those which you believe to be present. Part C requires you to list any of a group of pollutants which you believe to be present, with a brief explanation of why you believe it to be present. (See specific instructions on the form and below Parts A through C).

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts, and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff.) If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as a concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper. (Use the following abbreviations in the columns headed "Units" (column 3, Part A, and column 4, Part B).

CONCENTRATION		MASS	
ppm	parts per million	lbs	pounds
mg/L	milligrams per liter	ton	tons (English tons)
ppb	parts per billion	mg	Milligrams
ug/L	micrograms per liter	g	grams
		kg	kilograms
		T	tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "number of analyses" columns (columns 2A and 2B, Part A, and columns 3A and 3D, Part B). The Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a complete sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" columns (column 2C, Part A, and column 3C, Part B), and the total number of daily values under the "Number of Analyses" columns (column 2D, Part A, and column 3D, Part B). Also, determine the average of all daily values taken during each calendar month, and report the highest average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Values" columns (column 2B, Part A, and column 3B, Part B).

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes which contribute wastewater in normal operation and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLE. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. A combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the Intake columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)

2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)

3. When applicable, a demonstration of the extent to which the pollutants in the intake vary physically, chemically, or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.

3.00 Part A must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff. However, at your request, the Missouri Department of Natural Resources may waive the requirements to test for one or more of these pollutants, upon a determination that testing for the pollutant(s) is not appropriate for your effluent.

Use composite samples for all pollutants in this part, except use grab samples for pH and temperature. See discussion in instructions above for definitions of the columns in Part A. The "Long Term Average Values" column (column 2C) and "Maximum 30 Day Values" column (column 2B) are not compulsory but should be filled out if data is available.

3.00 Part B must be completed by all applicants for all outfalls, including outfalls containing only noncontact cooling water or storm runoff.

Use composite samples for all pollutants you analyze for in this part, except use grab samples for residual chlorine, oil and grease and fecal coliform. The Long Term Average Values column (column 3C) and Maximum 30 Day Values column (column 3B) are not compulsory but should be filled out if data is available.

3.00 List any pollutants in Table B that you believe to be present and explain why you believe them to be present in part C. No analysis is required, but you have analytical, you must report it.

TABLE B – TOXIC POLLUTANTS AND HAZARDOUS SUBSTANCES REQUIRED TO BE IDENTIFIED BY APPLICANTS IF EXPECTED TO BE PRESENT

TOXIC POLLUTANT

Asbestos

HAZARDOUS SUBSTANCES

Acetaldehyde
Allyl alcohol
Allyl chloride
Amyl acetate
Aniline
Benzonitrile
Benzyl chloride
Butyl acetate
Butylamine
Captan

HAZARDOUS SUBSTANCES

Dichlorvos
Diethylamine
Dimethylamine
Dintrobenzene
Diquat
Disulfoton
Diuron
Epichlorohydrin
Ethion
Ethylene diamine
Ethylene dibromide
Formaldehyde
Furfural
Guthion

HAZARDOUS SUBSTANCES

Nalad
Napthenic acid
Nitrotoluene
Parathion
Phenolsulfonate
Phosgene
Propargite
Propylene oxide
Pyrethrins
Quinoline
Resorcinol
Strontium
Strychnine
Sytrene

TABLE B – (continued)

HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES	HAZARDOUS SUBSTANCES
Carbaryl	Isoprene	2, 4, 5-T (2,4,5-Trichloro-phenoxyacetic acid)
Carbofuran	Isopropanolamine	TDE (Tetrachlorodiphenyl ethane)
Carbon disulfide	Kelthane	2, 4, 5-TP (2-(2,4,5-Trichloro-phenoxy) propanoic acid)
Chlorpyrifos	Kepone	Trichlorofon
Coumaphos	Malathion	Triethanolamine
Cresol	Mercaptodimethur	Triethaylamine
Crotonaldehyde	Methoxychlor	Uranium
2,4-D (2,4-Dichloro-Phenoxyacetic acid)	Methyl mercaptan	Vanadium
Diazinon	Methyl parathion	Vinyl acetate
Dicamba	Mevinphos	Xylene
Dichlobenil	Mexacarbate	Xylenol
2,2-Dichloropropionic acid	Monethyl amine	Zirconium
	Monomethyl amine	

3.10 Self-explanatory. Additional information may be requested by the Missouri Department of Natural Resources.

3.20 Self-explanatory.

3.30 The Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application . . . shall upon conviction, be punished by a fine of no more $10,000 or by imprisonment for not more than six months, or both.

All applications must be signed as follows and the signature must be original.

A. For a corporation, by an officer having responsibility for the overall operation of the regulated facility or activity or for environmental matters.

B. For a partnership or sole proprietorship, by a general partner or the proprietor.

C. For a municipal, state, federal or other public facility, by either a principal executive officer or by an individual having overall responsibility for environmental matters at the facility.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM D – APPLICATION FOR DISCHARGE PERMIT – PRIMARY INDUSTRIES

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY
Columbia Municipal Power Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER
MO 0004979

This form is to be filled out in addition to forms A and C "Application for Discharge Permit" for the Industries listed below:

INDUSTRY CATEGORY

- Adhesives and sealants
- Aluminum forming
- Auto and other laundries
- Battery manufacturing
- Coal mining
- Coil coating
- Copper forming
- Electric and electronic compounds
- Electroplating
- Explosives manufacturing
- Foundries
- Gum and wood chemicals
- Inorganic chemicals manufacturing
- Iron and steel manufacturing
- Leather tanning and finishing
- Landfill
- Mechanical products manufacturing
- Nonferrous metals manufacturing
- Ore mining
- Organic chemicals manufacturing
- Paint and ink formulation
- Pesticides
- Petroleum refining
- Pharmaceutical preparations
- Photographic equipment and supplies
- Plastic and synthetic materials manufacturing
- Plastic processing
- Porcelain enameling
- Printing and publishing
- Pulp and paperboard mills
- Rubber processing
- Soap and detergent manufacturing
- Steam electric power plants
- Textile mills
- Timber products processing

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
	#001 East Cooling Blowdown

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)	✓			0.00064							mg/L				
2M. Arsenic, Total (7440-38-2)	✓			0.031							mg/L				
3M. Beryllium, Total (7440-41-7)	✓			<0.00010							mg/L				
4M. Cadmium, Total (7440-43-9)	✓			<0.00010							mg/L				
5M. Chromium III (16065-83-1)	✓			0.013											
6M. Chromium VI (18540-29-9)	✓										mg/L				
7M. Copper, Total (7440-50-8)	✓			0.026							mg/L				
8M. Lead, Total (7439-92-1)	✓			<0.00025							mg/L				
9M. Magnesium Total (7439-95-4)	✓										mg/L				
10M. Mercury, Total (7439-97-6)	✓			<0.000034							mg/L				
11M. Molybdenum Total (7439-98-7)	✓														
12M. Nickel, Total (7440-02-0)	✓			0.0038							mg/L				
13M. Selenium, Total (7782-49-2)	✓			0.00065							mg/L				
14M. Silver, Total (7440-22-4)	✓			<0.00050							mg/L				
15M. Thallium, Total (7440-28-0)	✓			<0.00010							mg/L				
16M. Tin Total (7440-31-5)	✓														
17M. Titanium Total (7440-32-6)	✓														
18M. Zinc, Total (7440-66-6)	✓			0.023							mg/L				

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	☑	☐	☐	<0.005							mg/L				
20M. Phenols, Total	☑	☐	☑												
DIOXIN															
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☑	**DESCRIBE RESULTS**											

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☑	☐	☑	<50							ug/L				
2V. Acrylonitrile (107-13-1)	☑	☐	☑	<10							ug/L				
3V. Benzene (71-43-2)	☑	☐	☑	<5.0							ug/L				
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☑	☐	☑	<10							ug/L				
5V. Bromoform (75-25-2)	☑	☐	☑	<5.0							ug/L				
6V. Carbon Tetrachloride (56-23-5)	☑	☐	☑	<5.0							ug/L				
7V. Chlorobenzene (108-90-7)	☑	☐	☑	<5.0							ug/L				
8V. Chlorodibromomethane (124-48-1)	☑	☐	☑	<5.0							ug/L				
9V. Chloroethane (75-00-3)	☑	☐	☑	<10							ug/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)	☑	☐	☑	<5.0							ug/L				
11V. Chloroform (67-66-3)	☑	☐	☑	<5.0							ug/L				
12V. Dichlorobromomethane (75-27-4)	☑	☐	☑	<5.0							ug/L				
13V. Dichloro-difluoromethane (75-71-8)	☑	☐	☑												
14V. 1,1 – Dichloroethane (75-34-3)	☑	☐	☑	<5.0							ug/L				
15V. 1,2 – Dichloroethane (107-06-2)	☑	☐	☑	<5.0							ug/L				
16V. 1,1 – Dichloroethylene (75-35-4)	☑	☐	☑	<5.0							ug/L				
17V. 1,3 – Dichloropropane (78-87-5)	☑	☐	☑	<5.0							ug/L				
18V. 1,2 –Dichloropropylene (542-75-6)	☑	☐	☑	<5.0							ug/L				
19V. Ethylbenzene (100-41-4)	☑	☐	☑	<5.0							ug/L				
20V. Methyl Bromide (74-83-9)	☑	☐	☑	<5.0							ug/L				
21V. Methyl Chloride (74-87-3)	☑	☐	☑	<10							ug/L				

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☑	☐	☑	<5.0											
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☑	☐	☑	<5.0							ug/L				
24V. Tetrachloroethylene (127-18-4)	☑	☐	☑	<5.0							ug/L				
25V. Toluene (108-88-3)	☑	☐	☑	<5.0							ug/L				
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☑	☐	☑	<5.0							ug/L				
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☑	☐	☑	<5.0							ug/L				
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☑	☐	☑	<5.0							ug/L				
29V. Trichloro – ethylene (79-01-6)	☑	☐	☑	<5.0							ug/L				
30V. Trichloro – fluoromethane (75-69-4)	☑	☐	☑	<5.0							ug/L				
31V. Vinyl Chloride (75-01-4)	☑	☐	☑	<5.0							ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☑	☐	☑	<10.0							ug/L				
2A. 2,4 – Dichloro – phenol (120-83-2)	☑	☐	☑	<10.0							ug/L				
3A. 2,4 – Dimethyl – phenol (105-67-9)	☑	☐	☑	<10.0							ug/L				
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☑	☐	☑	<10.0							ug/L				
5A. 2,4 – Dinitro – phenol (51-28-5)	☑	☐	☑	<10.0							ug/L				
6A. 2-Nitrophenol (88-75-5)	☑	☐	☑	<10.0							ug/L				
7A. 4-Nitrophenol (100-02-7)	☑	☐	☑	<10.0							ug/L				
8A. P – Chloro – M Cresol (59-50-7)	☑	☐	☑	<10.0							ug/L				
9A. Pentachloro – phenol (87-86-5)	☑	☐	☑	<10.0							ug/L				
10A. Phenol (108-952)	☑	☐	☑	<10.0							ug/L				
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☑	☐	☑	<10.0							ug/L				
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☑	☐	☑	<10.0							ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☑	☐	☑	<10.0							ug/L				
2B. Acenaphtylene (208-96-8)	☑	☐	☑	<10.0							ug/L				
3B. Anthracene (120-12-7)	☑	☐	☑	<10.0							ug/L				
4B. Benzidine (92-87-5)	☑	☐	☑	<10.0							ug/L				
5B. Benzo (a) Anthracene (56-55-3)	☑	☐	☑	<10.0							ug/L				
6B. Benzo (a) Pyrene (50-32-8)	☑	☐	☑	<10.0							ug/L				
7B. 3,4 – Benzofluoranthene (205-99-2)	☑	☐	☑	<10.0							ug/L				
8B. Benzo (ghi) Perylene (191-24-2)	☑	☐	☑	<10.0							ug/L				
9B. Benzo (k) Fluoranthene (207-08-9)	☑	☐	☑	<10.0							ug/L				
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☑	☐	☑	<10.0							ug/L				
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☑	☐	☑	<10.0							ug/L				
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☑	☐	☑	<10.0							ug/L				
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☑	☐	☑	<10.0							ug/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☑	☐	☑	<10.0							ug/L				
15B. Butyl Benzyl Phthalate (85-68-7)	☑	☐	☑	<10.0							ug/L				
16B. 2-Chloronaphthalene (91-58-7)	☑	☐	☑	<10.0							ug/L				
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☑	☐	☑	<10.0							ug/L				
18B. Chrysene (218-01-9)	☑	☐	☑	<10.0							ug/L				
19B. Dibenzo (a.h) Anthracene (53-70-3)	☑	☐	☑	<10.0							ug/L				
20B. 1,2 – Dichlorobenzene (95-50-1)	☑	☐	☑	<10.0							ug/L				
21B. 1,3 – Dichlorobenzene (541-73-1)	☑	☐	☑	<10.0							ug/L				

CONTINUED FROM PAGE 5

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1, 4-Dichlorobenzene (106-46-7)	☑	☐	☑	<10.0							ug/L				
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☑	☐	☑	<10.0							ug/L				
24B. Diethyl Phthalate (84-66-2)	☑	☐	☑	<10.0							ug/L				
25B. Dimethyl Phthalate (131-11-3)	☑	☐	☑	<10.0							ug/L				
26B. Di-N-butyl Phthalate (84-74-2)	☑	☐	☑	<10.0							ug/L				
27B. 2,4-Dinitrotoluene (121-14-2)	☑	☐	☑	<10.0							ug/L				
28B. 2,6-Dinitrotoluene (606-20-2)	☑	☐	☑	<10.0							ug/L				
29B. Di-N-Octyphthalate (117-84-0)	☑	☐	☑	<10.0							ug/L				
30B. 1,2-Diphenylhydrazine (*as Azobenzene*) (122-66-7)	☑	☐	☑	<10.0							ug/L				
31B. Fluoranthene (206-44-0)	☑	☐	☑	<10.0							ug/L				
32B. Fluorene (86-73-7)	☑	☐	☑	<10.0							ug/L				
33B. Hexachlorobenzene (87-68-3)	☑	☐	☑	<10.0							ug/L				
34B. Hexachlorobutadiene (87-68-3)	☑	☐	☑	<10.0							ug/L				
35B. Hexachloro-cyclopentadiene (77-47-4)	☑	☐	☑	<10.0							ug/L				
36B. Hexachloroethane (67-72-1)	☑	☐	☑	<10.0							ug/L				
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☑	☐	☑	<10.0							ug/L				
38B. Isophorone (78-59-1)	☑	☐	☑	<10.0							ug/L				
39B. Naphthalene (91-20-3)	☑	☐	☑	<10.0							ug/L				
40B. Nitrobenzene (98-95-3)	☑	☐	☑	<10.0							ug/L				
41B. N-Nitro-sodimethylamine (62-75-9)	☑	☐	☑	<10.0							ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (*optional*)		
	A. TES-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)	☑	☐	☑	<10.0							ug/L				
43B. N-Nitro-sodiphenylamine (86-30-6)	☑	☐	☑	<10.0							ug/L				
44B. Phenanthrene (85-01-8)	☑	☐	☑	<10.0							ug/L				
45B. Pyrene (129-00-0)	☑	☐	☑	<10.0							ug/L				
46B. 1,2,4-Tri chlorobenzene (120-82-1)	☑	☐	☑	<10.0							ug/L				
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	☐	☐	☑	<0.50							ug/L				
2P. α-BHC (319-84-6)	☐	☐	☑	<0.50							ug/L				
3P. β-BHC (319-84-6)	☐	☐	☑	<0.50							ug/L				
4P. γ-BHC (58-89-9)	☐	☐	☑	<0.50							ug/L				
5P. δ-BHC (319-86-8)	☐	☐	☑	<0.50							ug/L				
6P. Chlordane (57-74-9)	☐	☐	☑	<0.50							ug/L				
7P. 4,4'-DDT (50-29-3)	☐	☐	☑	<1.0							ug/L				
8P. 4,4'-DDE (72-55-9)	☐	☐	☑	<1.0							ug/L				
9P. 4,4'-DDD (72-54-8)	☐	☐	☑	<1.0							ug/L				
10P. Dieldrin (60-57-1)	☐	☐	☑	<1.0							ug/L				
11P. α-Endosulfan (115-29-7)	☐	☐	☑	<0.50							ug/L				
12P. β-Endosultan (115-29-7)	☐	☐	☑	<1.0							ug/L				
13P. Endosulfan Sulfate (1031-07-8)	☐	☐	☑	<1.0							ug/L				
14P. Endrin (72-20-8)	☐	☐	☑	<1.0							ug/L				
15P. Endrin Aldehyde (7421-93-4)	☐	☐	☑	<1.0							ug/L				
16P. Heptachlor (76-44-8)	☐	☐	☑	<0.50							ug/L				

CONTINUED FROM PAGE 7

NPDES # (IF ASSIGNED)	OUTFALL NUMBER

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT						D. NO. OF ANALYSES	4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)			A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	☐	☐	☑	<0.50							ug/L				
18P. PCB-1242 (53469-21-9)	☐	☐	☑	<5.0							ug/L				
19P. PBC-1254 (11097-69-1)	☐	☐	☑	<10							ug/L				
20P. PCB-1221 (11104-28-2)	☐	☐	☑	<10							ug/L				
21P. PCB-1232 (11141-16-5)	☐	☐	☑	<5.0							ug/L				
22P. PCB-1248 (12672-29-6)	☐	☐	☑	<5.0							ug/L				
23P. PCB-1260 (11096-82-5)	☐	☐	☑	<10							ug/L				
24P. PCB-1016 (12674-11-2)	☐	☐	☑	<5.0							ug/L				
25P. Toxaphene (8001-35-2)	☐	☐	☑	<5.0							ug/L				
J. RADIOACTIVITY															
(1) Alpha Total	☐	☐	☑												
(2) Beta Total	☐	☐	☑												
(3) Radium Total	☐	☐	☑												
(4) Radium 226 Total	☐	☐	☑												

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. IS ANY POLLUTANT LISTED IN ITEM 1.30 A SUBSTANCE OR A COMPONENT OF A SUBSTANCE WHICH YOU DO OR EXPECT THAT YOU WILL OVER THE NEXT FIVE YEARS USE OR MANUFACTURE AS AN INTERMEDIATE OR FINAL PRODUCT OR BYPRODUCT?

☐ **YES** *(LIST ALL SUCH POLLUTANTS BELOW)* ■ **NO** *(GO TO B)*

B. ARE YOUR OPERATIONS SUCH THAT YOUR RAW MATERIALS, PROCESSES OR PRODUCTS CAN REASONABLE BE EXPECTED TO VARY SO THAT YOUR DISCHARGES OF POLLUTANTS MAY DURING THE NEXT FIVE YEARS EXCEED TWO TIMES THE MAXIMUM VALUES REPORTED IN ITEM 1.30?

☐ **YES** *(COMPLETE C BELOW)* ■ **NO** *(GO TO SECTION 3.00)*

C. IF YOU ANSWERED "YES" TO ITEM B, EXPLAIN BELOW AND DESCRIBE IN DETAIL THE SOURCES AND EXPECTED LEVELS OF SUCH POLLUTANTS THAT YOU ANTICIPATE WILL BE DISCHARGED FROM EACH OUTFALL OVER THE NEXT FIVE YEARS, TO THE BEST OF YOUR ABILIITY AT THIS TIME. CONTINUE ON ADDITIONAL SHEETS IF YOU NEED MORE SPACE.

3.00 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED IN 1.30 PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

■ **YES** *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*

☐ **NO** *(GO TO SECTION 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
PDC Laboratories, Inc.	3278 N. Highway 67, Florissant	(314) 432-0550	all

4.00 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	PHONE NUMBER (AREA CODE AND NUMBER)
Christian Johanningmeier, PE - Power Production Superintendent	(573) 874-6236
SIGNATURE	DATE SIGNED
Christian Johanningmeier	1-5-2017

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE PERMIT FORM D – PRIMARY INDUSTRIES

All blanks must be filled in when the applications is submitted to the appropriate Regional Office (see map). The form **must be signed** as indicated.

This application is to be completed only for wastewater facilities from which there is a discharge. Include any facility that it is possible to discharge from even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, the sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility – By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

1.30 GENERAL INSTRUCTIONS. For some pollutants, you may be required to mark "X" in the "Testing Required" column (column 2-A) and test (sample and analyze) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all others, you must mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2-B or 2-C) based on your best estimate, and test for those which you believe to be present.

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff). If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out Table II if the separate sheets contain all the required information in a format which is consistent with Table II in spacing and in identification of pollutants and columns. (For example, the data system used in your GC/MS analysis may be able to print data in the proper format). Use the following abbreviations in the columns headed "Units". (column 4)

CONCENTRATION

ppm.....parts per million
mg/1.....milligrams per liter
ppb.....parts per billion
µg/1.....micrograms per liter

MASS

lbs.....pounds
ton.....tons (English tons)
mg.....milligrams
g.....grams
kg.....kilograms
T.....tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "Number of Analyses" columns (columns 3-A and 3-D). Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" column (column 3-C), and the total number of daily values under the "Number of Analyses" columns (column 3-D). Also, determine the average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Value" column (column 3-B)

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes that contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLES. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. For the purposes of this application, A combination of at least eight sample aliquots of at lease 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the "Intake" columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)

2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)

3. When applicable, a demonstration of the extent to which the pollutant in the intake vary physically, chemically or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.

SPECIFIC INSTRUCTIONS. Table A lists the 34 "primary" industry categories in the left-hand column. For each outfall, if any of your processes that contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (column 2-A) and test for: A. All of the toxic metals, cyanide and total phenols; and B. The organic toxic pollutants contained in the gas chromatography/mass spectrometry (GS/MS) fractions indicated in Table A as applicable to your category, unless you qualify as a small business (see below). The organic toxic pollutants are listed by GC/MS fractions in Table II in 1.30. For example, the Organic Chemicals Industry has an "X" in all four

fractions; therefore, applicants in this category must test for all organic toxic pollutants in 1.30. If you are applying for a permit for a privately owned treatment works, determine your testing requirements on the basis of the industry categories of your contributors. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category (for example, for deciding whether an effluent guideline is applicable) before your permit is issued.

TABLE A – TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY

	GC/MS FRACTION			
INDUSTRY CATEGORY	**VOLATILE**	**ACID**	**BASE/NEUTRAL**	**PESTICIDE**
Adhesives and sealants	X	X	X	-
Aluminum forming	X	X	X	-
Auto and other laundries	X	X	X	X
Battery manufacturing	X	-	X	-
Coal mining	X	X	X	X
Coil coating	X	X	X	-
Copper forming	X	X	X	-
Electric and electronic compounds	X	X	X	X
Electroplating	X	X	X	-
Explosives manufacturing	X	X	X	-
Foundries	X	X	X	-
Gum and wood chemicals	X	X	X	X
Inorganic chemicals manufacturing	X	X	X	-
Iron and steel manufacturing	X	X	X	-
Leather tanning and finishing	X	X	X	X
Mechanical products manufacturing	X	X	X	-
Nonferrous metals manufacturing	X	X	X	X
Ore Mining	X	X	X	X
Organic chemicals manufacturing	X	X	X	X
Paint and ink formulation	X	X	X	X
Pesticides	X	X	X	X
Petroleum refining	X	X	X	X
Pharmaceutical preparations	X	X	X	-
Photographic equipment and supplies	X	X	X	X
Plastic and synthetic materials mfg.	X	X	X	X
Plastic processing	X	-	-	-
Porcelain enameling	X	-	X	X
Printing and publishing	X	X	X	X
Pulp and paperboard mills	X	X	X	X
Rubber processing	X	X	X	-
Soap and detergent manufacturing	X	X	X	-
Stream electric power plants	X	X	X	-
Textile mills	X	X	X	X
Timber products	X	X	X	X

1 The pollutants in each fraction are listed in Item 1.30
X = Testing required
- = Testing not required

For all other cases (nonprocess wastewater outfalls and nonrequired GC/MS fractions), you must mark "X" in either the "Believed Present" column (column 2-B) or the "Believed Absent" column (column 2-C) for each pollutant, and test for those you believe present (those marked "X" in column 2-B. If you qualify as a small business (see below) you are exempt from testing for the organic toxic pollutants, listed in Table II. For pollutants in intake water, see discussion above. The "Long Term Average Values" column (column 5-2) are not compulsory but should be filled out if data is available.

Use composite samples for all pollutants in this part, except use grab samples for total phenols and cyanide.

You are required to mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

1. 2,4,5-trichlorophenocy acetic acid (2,4,5-T);
2. 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP);
3. 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon;
4. O,O-dimethyl O-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel);
5. Hexachlorophene (HCP).

If you mark "Testing Required" or "Believe Present," you must perform a screening analysis for dioxins, using gas chromatography with an electron capture detector. A TCDD standard for quantification is not required. Describe the results of this analysis in the space provided; for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." The permitting authority may require you to perform a quantitative analysis if you report a positive result.

The Effluent Guidelines Division of EPA has collected and analyzed samples from some plants for the pollutants listed in Part C in the course of its BAT guidelines development program. If your effluents were sampled and analyzed as part of this program in the last three years, you may use this data to answer provided that the Missouri Department of Natural Resources approves, and provided that no process change or change in raw materials or operating practices has occurred since the samples were taken that would make the analyses unrepresentative of your current discharge.

SMALL BUSINESS EXEMPTION. If you qualify as a "small business" you are exempt from the reporting requirements for the organic toxic pollutants, listed in Table II. If your facility is a coal mine, and if your probable total annual production is less than 100,000 tons per year, you may submit past production data or estimated future production (such as a schedule of estimated total production under 30 CFR Section 795.14(c)) instead of conducting analysis for the organic toxic pollutants. If your facility is not a coal mine, and if your gross total annual sales for the most recent three years average less than $100,000 per year, in second quarter 1980 dollars, you may submit sales data for those years instead of conducting analyses for the organic toxic pollutants.

The production or sales data must be for the facility that is the source of the discharge. The data should not be limited to production or sales for the process or processes which contribute to the discharge, unless those are the only processes at your facility. For sales data, in situations involving intra-corporate transfers of goods and services, the transfer price per unit should approximate market prices for those goods and services as closely as possible. Sales figures for years after 1980 should be indexed to the second quarter of 1980 by using the gross national product price deflator (second quarter of 1980 = 100). This index is available in "National Income and Product Accounts of the United States" (Department of Commerce, Bureau of Economic Analysis).

2.00 A. You may not claim this information as confidential; however, you do not have to distinguish between use or production of the pollutants or list the amounts. Under NPDES regulations your permit will contain limits to control all pollutants you report in answer to this question, as well as all pollutants reported in item 1.30 to 2.00 B at levels exceeding the technology-based limits appropriate to your facility. Your permit will also require you to report to Missouri Department of Natural Resources if you, in the future, begin or expect that you will begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which you did not report here. Your permit may be modified at that time if necessary to control that pollutant.

B. For this item, consider only those variations which may result in concentrations of pollutants in effluents which may exceed two times the maximum values you reported in 1.30. These variations may be part of your routine operations or part of your regular cleaning cycles.

Under NPDES regulations your permit will contain limits to control any pollutant you report in answer to this question at levels exceeding the technology-based limits appropriate to your facility. Your permit will also require you to report to the Missouri Department of Natural Resources if you know or have reason to believe that any activity has occurred or will occur which would make your discharge of any toxic pollutant five times the maximum values reported in 1.30 or in this item, and your permit may be modified at that time if necessary to control the pollutant.

Do not consider variations which are the result of bypasses or upsets. Increased levels of pollutants that are discharged as a result of bypasses or upsets are regulated separately under NPDES regulations.

C. Examples of the types of variations to be described here include:

Changes in raw or intermediate materials;
Changes in process equipment or materials;
Changes in product lines;
Significant chemical reactions between pollutants in waste streams; and
Significant variation in removal efficiencies of pollution control equipment.

You may indicate other types of variations as well, except those which are the result of bypasses or upsets. Missouri Department of Natural Resources may require you to further investigate or document variations you report here.

Base your prediction of expected levels of these pollutants upon your knowledge of your processes, raw materials, past and projected product ranges, etc., or upon any testing conducted upon your effluents that indicates the range of variability that can be expected in your effluent over the next five years.

EXAMPLE: Outfall 001 discharges water used to clean six 500 gallon tanks. These tanks are used for formulation of dispersions of synthetic resins in water (adhesives). Use of toxic pollutants that can be expected in the next five years is:

1. Copper acetate inhibitor, ½, lb. per tank;
2. Dibutyl phthalate, 50 lbs. per tank;
3. Toulene, 5 lbs. per tank; and
4. Antimony oxide, 1 lb. per tank.

Based on normal cleaning an average of 1 percent and a maximum of 3 percent of the contents of each tank is collected and discharged once every two weeks in the 150 gallons of water used for cleaning. Treatment (pH adjustment, flocculation, filtration) removes 85 percent of metals and 50 percent of organic compounds.

3.00 Self-explanatory.

4.00 The Federal Clean Water Act provides for severe penalties for submitting false information on this application form.

Section 309(c)(2) of the Federal Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application..... shall upon conviction, be punished by a fine of no more than $10,000 or by imprisonment for not more than six months, or both."

STATE REGULATIONS REQUIRE THE CERTIFICATION TO BE SIGNED AS FOLLOWS

1. For a corporation, by an officer of at least the level of plant manager;
2. For a partnership or sole proprietorship, by a general partner or the proprietor; or
3. For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking public official.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH

FORM D – APPLICATION FOR DISCHARGE PERMIT – PRIMARY INDUSTRIES

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

NOTE: DO NOT ATTEMPT TO COMPLETE THIS FORM BEFORE READING THE ACCOMPANYING INSTRUCTIONS

1.00 NAME OF FACILITY
Columbia Municipal Power Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER
MO 0004979

This form is to be filled out in addition to forms A and C "Application for Discharge Permit" for the Industries listed below:

INDUSTRY CATEGORY

Adhesives and sealants
Aluminum forming
Auto and other laundries
Battery manufacturing
Coal mining
Coil coating
Copper forming
Electric and electronic compounds
Electroplating
Explosives manufacturing
Foundries
Gum and wood chemicals
Inorganic chemicals manufacturing
Iron and steel manufacturing
Leather tanning and finishing
Landfill
Mechanical products manufacturing
Nonferrous metals manufacturing
Ore mining
Organic chemicals manufacturing
Paint and ink formulation
Pesticides
Petroleum refining
Pharmaceutical preparations
Photographic equipment and supplies
Plastic and synthetic materials manufacturing
Plastic processing
Porcelain enameling
Printing and publishing
Pulp and paperboard mills
Rubber processing
Soap and detergent manufacturing
Steam electric power plants
Textile mills
Timber products processing

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
	#002 - West Cooling Tower

1.30 If you are a primary industry and this outfall contains process wastewater, refer to Table A in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-A for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. Mark "X" in column 2-B for each pollutant you know or have reason to believe is present. Mark "X" in column 2-C for each pollutant you believe to be absent. If you mark either columns 2-A or 2-B for any pollutant, you must provide the results of at least one analysis for that pollutant. Note that there are seven pages to this part, please review each carefully. Complete one table (*all seven pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TEST-ING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)	✓			0.00045							mg/L				
2M. Arsenic, Total (7440-38-2)	✓			0.012							mg/L				
3M. Beryllium, Total (7440-41-7)	✓			<0.00010							mg/L				
4M. Cadmium, Total (7440-43-9)	✓			<0.00010							mg/L				
5M. Chromium III (16065-83-1)	✓			0.012							mg/L				
6M. Chromium VI (18540-29-9)	✓														
7M. Copper, Total (7440-50-8)	✓			0.057							mg/L				
8M. Lead, Total (7439-92-1)	✓			0.00046							mg/L				
9M. Magnesium Total (7439-95-4)	✓														
10M. Mercury, Total (7439-97-6)	✓			<0.000020							mg/L				
11M. Molybdenum Total (7439-98-7)	✓														
12M. Nickel, Total (7440-02-0)	✓			0.0057							mg/L				
13M. Selenium, Total (7782-49-2)	✓			0.0015							mg/L				
14M. Silver, Total (7440-22-4)	✓			<0.00050							mg/L				
15M. Thallium, Total (7440-28-0)	✓			<0.00010							mg/L				
16M. Tin Total (7440-31-5)	✓														
17M. Titanium Total (7440-32-6)	✓														
18M. Zinc, Total (7440-66-6)	✓			0.020							mg/L				

CONTINUED FROM PAGE 3

19M. Cyanide, Amenable to Chlorination	☑	☐	☐	<0.005							mg/L					
20M. Phenols, Total	☑	☐	☑													
DIOXIN																
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☑	**DESCRIBE RESULTS**												

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☑	☐	☑	<50							ug/L				
2V. Acrylonitrile (107-13-1)	☑	☐	☑	<10							ug/L				
3V. Benzene (71-43-2)	☑	☐	☑	<5.0							ug/L				
4V. Bis (*Chloromethyl*) Ether (542-88-1)	☑	☐	☑	<10							ug/L				
5V. Bromoform (75-25-2)	☑	☐	☑	<5.0							ug/L				
6V. Carbon Tetrachloride (56-23-5)	☑	☐	☑	<5.0							ug/L				
7V. Chlorobenzene (108-90-7)	☑	☐	☑	<5.0							ug/L				
8V. Chlorodibromomethane (124-48-1)	☑	☐	☑	<5.0							ug/L				
9V. Chloroethane (75-00-3)	☑	☐	☑	<10							ug/L				
10V. 2-Chloroethylvinyl Ether (110-75-8)	☑	☐	☑	<5.0							ug/L				
11V. Chloroform (67-66-3)	☑	☐	☑	<5.0							ug/L				
12V. Dichlorobromomethane (75-27-4)	☑	☐	☑	<5.0							ug/L				
13V. Dichloro-difluoromethane (75-71-8)	☑	☐	☑												
14V. 1,1 – Dichloroethane (75-34-3)	☑	☐	☑	<5.0							ug/L				
15V. 1,2 – Dichloroethane (107-06-2)	☑	☐	☑	<5.0							ug/L				
16V. 1,1 – Dichloroethylene (75-35-4)	☑	☐	☑	<5.0							ug/L				
17V. 1,3 – Dichloropropane (78-87-5)	☑	☐	☑	<5.0							ug/L				
18V. 1,2 –Dichloropropylene (542-75-6)	☑	☐	☑	<5.0							ug/L				
19V. Ethylbenzene (100-41-4)	☑	☐	☑	<5.0							ug/L				
20V. Methyl Bromide (74-83-9)	☑	☐	☑	<5.0							ug/L				
21V. Methyl Chloride (74-87-3)	☑	☐	☑	<10							ug/L				

NPDES # (IF ASSIGNED)	OUTFALL NUMBER

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☑	☐	☑	<5.0											
23V. 1,1,2,2 – Tetra-chloroethane (79-34-5)	☑	☐	☑	<5.0							ug/L				
24V. Tetrachloroethylene (127-18-4)	☑	☐	☑	<5.0							ug/L				
25V. Toluene (108-88-3)	☑	☐	☑	<5.0							ug/L				
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☑	☐	☑	<5.0							ug/L				
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☑	☐	☑	<5.0							ug/L				
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☑	☐	☑	<5.0							ug/L				
29V. Trichloro – ethylene (79-01-6)	☑	☐	☑	<5.0							ug/L				
30V. Trichloro – fluoromethane (75-69-4)	☑	☐	☑	<5.0							ug/L				
31V. Vinyl Chloride (75-01-4)	☑	☐	☑	<5.0							ug/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☑	☐	☑	<10.0							ug/L				
2A. 2,4 – Dichloro – phenol (120-83-2)	☑	☐	☑	<10.0							ug/L				
3A. 2,4 – Dimethyl – phenol (105-67-9)	☑	☐	☑	<10.0							ug/L				
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☑	☐	☑	<10.0							ug/L				
5A. 2,4 – Dinitro – phenol (51-28-5)	☑	☐	☑	<10.0							ug/L				
6A. 2-Nitrophenol (88-75-5)	☑	☐	☑	<10.0							ug/L				
7A. 4-Nitrophenol (100-02-7)	☑	☐	☑	<10.0							ug/L				
8A. P – Chloro – M Cresol (59-50-7)	☑	☐	☑	<10.0							ug/L				
9A. Pentachloro – phenol (87-86-5)	☑	☐	☑	<10.0							ug/L				
10A. Phenol (108-952)	☑	☐	☑	<10.0							ug/L				
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☑	☐	☑	<10.0							ug/L				
12A. 2 - methyl – 4,6 dinitrophenol (534-52-1)	☑	☐	☑	<10.0							ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)	☑	☐	☑	<10.0							ug/L				
2B. Acenaphtylene (208-96-8)	☑	☐	☑	<10.0							ug/L				
3B. Anthracene (120-12-7)	☑	☐	☑	<10.0							ug/L				
4B. Benzidine (92-87-5)	☑	☐	☑	<10.0							ug/L				
5B. Benzo (a) Anthracene (56-55-3)	☑	☐	☑	<10.0							ug/L				
6B. Benzo (a) Pyrene (50-32-8)	☑	☐	☑	<10.0							ug/L				
7B. 3,4 – Benzofluoranthene (205-99-2)	☑	☐	☑	<10.0							ug/L				
8B. Benzo (ghi) Perylene (191-24-2)	☑	☐	☑	<10.0							ug/L				
9B. Benzo (k) Fluoranthene (207-08-9)	☑	☐	☑	<10.0							ug/L				
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☑	☐	☑	<10.0							ug/L				
11B. Bis (2-Chloroethyl) Ether (111-44-4)	☑	☐	☑	<10.0							ug/L				
12B. Bis (2-Chloroisopropyl) Ether (39638-32-9)	☑	☐	☑	<10.0							ug/L				
13B. Bis (2-Ethylhexyl) Phthalate (117-81-7)	☑	☐	☑	<10.0							ug/L				
14B. 4-Bromophenyl Phenyl Ether (101-55-3)	☑	☐	☑	<10.0							ug/L				
15B. Butyl Benzyl Phthalate (85-68-7)	☑	☐	☑	<10.0							ug/L				
16B. 2-Chloronaphthalene (91-58-7)	☑	☐	☑	<10.0							ug/L				
17B. 4-Chlorophenyl Phenyl Ether (7005-72-3)	☑	☐	☑	<10.0							ug/L				
18B. Chrysene (218-01-9)	☑	☐	☑	<10.0							ug/L				
19B. Dibenzo (a.h) Anthracene (53-70-3)	☑	☐	☑	<10.0							ug/L				
20B. 1,2 – Dichlorobenzene (95-50-1)	☑	☐	☑	<10.0							ug/L				
21B. 1,3 – Dichlorobenzene (541-73-1)	☑	☐	☑	<10.0							ug/L				

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NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1, 4-Dichlorobenzene (106-46-7)	☑	☐	☑	<10.0							ug/L				
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☑	☐	☑	<10.0							ug/L				
24B. Diethyl Phthalate (84-66-2)	☑	☐	☑	<10.0							ug/L				
25B. Dimethyl Phthalate (131-11-3)	☑	☐	☑	<10.0							ug/L				
26B. Di-N-butyl Phthalate (84-74-2)	☑	☐	☑	<10.0							ug/L				
27B. 2,4-Dinitrotoluene (121-14-2)	☑	☐	☑	<10.0							ug/L				
28B. 2,6-Dinitrotoluene (606-20-2)	☑	☐	☑	<10.0							ug/L				
29B. Di-N-Octyphthalate (117-84-0)	☑	☐	☑	<10.0							ug/L				
30B. 1,2-Diphenylhydrazine (*as Azobenzene*) (122-66-7)	☑	☐	☑	<10.0							ug/L				
31B. Fluoranthene (206-44-0)	☑	☐	☑	<10.0							ug/L				
32B. Fluorene (86-73-7)	☑	☐	☑	<10.0							ug/L				
33B. Hexachlorobenzene (87-68-3)	☑	☐	☑	<10.0							ug/L				
34B. Hexachlorobutadiene (87-68-3)	☑	☐	☑	<10.0							ug/L				
35B. Hexachloro-cyclopentadiene (77-47-4)	☑	☐	☑	<10.0							ug/L				
36B. Hexachloroethane (67-72-1)	☑	☐	☑	<10.0							ug/L				
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☑	☐	☑	<10.0							ug/L				
38B. Isophorone (78-59-1)	☑	☐	☑	<10.0							ug/L				
39B. Naphthalene (91-20-3)	☑	☐	☑	<10.0							ug/L				
40B. Nitrobenzene (98-95-3)	☑	☐	☑	<10.0							ug/L				
41B. N-Nitro-sodimethylamine (62-75-9)	☑	☐	☑	<10.0							ug/L				

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (if available)		C. LONG TERM AVRG. VALUE (if available)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
42B. N-Nitroso N-Propylamine (621-64-7)	☑	☐	☑	<10.0							ug/L				
43B. N-Nitro-sodiphenylamine (86-30-6)	☑	☐	☑	<10.0							ug/L				
44B. Phenanthrene (85-01-8)	☑	☐	☑	<10.0							ug/L				
45B. Pyrene (129-00-0)	☑	☐	☑	<10.0							ug/L				
46B. 1,2,4-Tri chlorobenzene (120-82-1)	☑	☐	☑	<10.0							ug/L				
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	☐	☐	☑	<0.50							ug/L				
2P. α-BHC (319-84-6)	☐	☐	☑	<0.50							ug/L				
3P. β-BHC (319-84-6)	☐	☐	☑	<0.50							ug/L				
4P. γ-BHC (58-89-9)	☐	☐	☑	<0.50							ug/L				
5P. δ-BHC (319-86-8)	☐	☐	☑	<0.50							ug/L				
6P. Chlordane (57-74-9)	☐	☐	☑	<0.50							ug/L				
7P. 4,4'-DDT (50-29-3)	☐	☐	☑	<1.0							ug/L				
8P. 4,4'-DDE (72-55-9)	☐	☐	☑	<1.0							ug/L				
9P. 4,4'-DDD (72-54-8)	☐	☐	☑	<1.0							ug/L				
10P. Dieldrin (60-57-1)	☐	☐	☑	<1.0							ug/L				
11P. α-Endosulfan (115-29-7)	☐	☐	☑	<0.50							ug/L				
12P. β-Endosultan (115-29-7)	☐	☐	☑	<1.0							ug/L				
13P. Endosulfan Sulfate (1031-07-8)	☐	☐	☑	<1.0							ug/L				
14P. Endrin (72-20-8)	☐	☐	☑	<1.0							ug/L				
15P. Endrin Aldehyde (7421-93-4)	☐	☐	☑	<1.0							ug/L				
16P. Heptachlor (76-44-8)	☐	☐	☑	<0.50							ug/L				

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CONTINUED FROM PAGE 7

NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	☐	☐	☑	<0.50							ug/L				
18P. PCB-1242 (53469-21-9)	☐	☐	☑	<5.0							ug/L				
19P. PBC-1254 (11097-69-1)	☐	☐	☑	<10							ug/L				
20P. PCB-1221 (11104-28-2)	☐	☐	☑	<10							ug/L				
21P. PCB-1232 (11141-16-5)	☐	☐	☑	<5.0							ug/L				
22P. PCB-1248 (12672-29-6)	☐	☐	☑	<5.0							ug/L				
23P. PCB-1260 (11096-82-5)	☐	☐	☑	<10							ug/L				
24P. PCB-1016 (12674-11-2)	☐	☐	☑	<5.0							ug/L				
25P. Toxaphene (8001-35-2)	☐	☐	☑	<5.0							ug/L				
J. RADIOACTIVITY															
(1) Alpha Total	☐	☐	☑												
(2) Beta Total	☐	☐	☑												
(3) Radium Total	☐	☐	☑												
(4) Radium 226 Total	☐	☐	☑												

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

A. IS ANY POLLUTANT LISTED IN ITEM 1.30 A SUBSTANCE OR A COMPONENT OF A SUBSTANCE WHICH YOU DO OR EXPECT THAT YOU WILL OVER THE NEXT FIVE YEARS USE OR MANUFACTURE AS AN INTERMEDIATE OR FINAL PRODUCT OR BYPRODUCT?

☐ **YES** *(LIST ALL SUCH POLLUTANTS BELOW)* ■ **NO** *(GO TO B)*

B. ARE YOUR OPERATIONS SUCH THAT YOUR RAW MATERIALS, PROCESSES OR PRODUCTS CAN REASONABLE BE EXPECTED TO VARY SO THAT YOUR DISCHARGES OF POLLUTANTS MAY DURING THE NEXT FIVE YEARS EXCEED TWO TIMES THE MAXIMUM VALUES REPORTED IN ITEM 1.30?

☐ **YES** *(COMPLETE C BELOW)* ■ **NO** *(GO TO SECTION 3.00)*

C. IF YOU ANSWERED "YES" TO ITEM B, EXPLAIN BELOW AND DESCRIBE IN DETAIL THE SOURCES AND EXPECTED LEVELS OF SUCH POLLUTANTS THAT YOU ANTICIPATE WILL BE DISCHARGED FROM EACH OUTFALL OVER THE NEXT FIVE YEARS, TO THE BEST OF YOUR ABILIITY AT THIS TIME. CONTINUE ON ADDITIONAL SHEETS IF YOU NEED MORE SPACE.

3.00 CONTRACT ANALYSIS INFORMATION

WERE ANY OF THE ANALYSES REPORTED IN 1.30 PERFORMED BY A CONTRACT LABORATORY OR CONSULTING FIRM?

■ **YES** *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*

☐ **NO** *(GO TO SECTION 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
PDC Laboratories, Inc.	3278 N. Highway 67, Florissant	(314) 432-0550	all

4.00 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	PHONE NUMBER (AREA CODE AND NUMBER)
Christian Johanningmeier, PE - Power Production Superintendent	(573) 874-6236
SIGNATURE	DATE SIGNED
Christian Johanningmeier	1-5-2017

INSTRUCTIONS FOR FILLING OUT APPLICATION FOR DISCHARGE
PERMIT FORM D – PRIMARY INDUSTRIES

All blanks must be filled in when the applications is submitted to the appropriate Regional Office (see map). The form **must be signed** as indicated.

This application is to be completed only for wastewater facilities from which there is a discharge. Include any facility that it is possible to discharge from even if normally there is no discharge. If this form is not adequate for you to describe your existing operation, the sufficient information should be attached so that an evaluation of the discharge can be made.

1.00 Name of Facility – By what title or name is this facility known locally?

1.10 and 1.20 Self-explanatory.

1.30 GENERAL INSTRUCTIONS. For some pollutants, you may be required to mark "X" in the "Testing Required" column (column 2-A) and test (sample and analyze) and report the levels of the pollutants in your discharge whether or not you expect them to be present in your discharge. For all others, you must mark "X" in either the "Believe Present" column or the "Believe Absent" column (column 2-B or 2-C) based on your best estimate, and test for those which you believe to be present.

Base your determination that a pollutant is present in or absent from your discharge on your knowledge of your raw materials, maintenance chemicals, intermediate and final products and byproducts and any previous analyses known to you of your effluent or of any similar effluent. (For example, if you manufacture pesticides, you should expect those pesticides to be present in contaminated storm water runoff). If you would expect a pollutant to be present solely as a result of its presence in your intake water, you must mark "Believe Present" but you are not required to analyze for that pollutant. Instead, mark an "X" in the "Intake" column.

REPORTING. All levels must be reported as concentration and as total mass. You may report some or all of the required data by attaching separate sheets of paper instead of filling out Table II if the separate sheets contain all the required information in a format which is consistent with Table II in spacing and in identification of pollutants and columns. (For example, the data system used in your GC/MS analysis may be able to print data in the proper format). Use the following abbreviations in the columns headed "Units". (column 4)

CONCENTRATION

ppm.....parts per million
mg/1.....milligrams per liter
ppb.....parts per billion
µg/1.....micrograms per liter

MASS

lbs.....pounds
ton.....tons (English tons)
mg.....milligrams
g.....grams
kg.....kilograms
T.....tonnes (metric tons)

If you measure only one daily value, complete only the "Maximum Daily Values" columns and insert "1" into the "Number of Analyses" columns (columns 3-A and 3-D). Missouri Department of Natural Resources may require you to conduct additional analyses to further characterize your discharges.

For composite samples, the daily value is the total mass or average concentration found in a composite sample taken over the operating hours of the facility during a 24 hour period; for grab samples, the daily value is the arithmetic or flow-weighted total mass or average concentration found in a series of at least four grab samples taken over the operating hours of the facility during a 24 hour period.

If you measure more than one daily value for a pollutant, determine the average of all values within the last year and report the concentration and mass under the "Long Term Average Values" column (column 3-C), and the total number of daily values under the "Number of Analyses" columns (column 3-D). Also, determine the average of all daily values taken during each calendar month, and report the highest average under the "Maximum 30 Day Value" column (column 3-B)

SAMPLING. The collection of the samples for the reported analyses should be supervised by a person experienced in performing sampling of industrial wastewater. You may contact your Missouri Department of Natural Resources' Regional Office for detailed guidance on sampling techniques and for answers to specific questions. Any specific requirements contained in the applicable analytical methods should be followed for sample containers, sample preservation, holding times, the collection of duplicate samples, etc. The time when you sample should be representative of your normal operation, to the extent feasible, with all processes that contribute wastewater in normal operation, and with your treatment system operating properly with no system upsets. Samples should be collected from the center of the flow channel, where turbulence is at a maximum, at a site specified in your present permit or at any site adequate for the collection of a representative sample.

Grab and composite samples are defined as follows:

GRAB SAMPLES. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

COMPOSITE SAMPLE. For the purposes of this application, A combination of at least eight sample aliquots of at lease 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24 hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

ANALYSIS. You must use test methods promulgated in 40 CFR Part 136; however, if none has been promulgated for a particular pollutant, you may use any suitable method for measuring the level of the pollutant in your discharge provided that you submit a description of the method or a reference to a published method. Your description should include the sample holding times, preservation techniques and the quality control measures which you used.

If you have two or more substantially identical outfalls, you may request permission from the Missouri Department of Natural Resources to sample and analyze only one outfall and submit the results of the analysis for other substantially identical outfalls. If your request is granted by the Missouri Department of Natural Resources, on a separate sheet attached to the application form, identify which outfall you did test and describe why the outfalls which you did not test are substantially identical to the outfall which you did test.

REPORTING OF INTAKE DATA. You are not required to report data under the "Intake" columns unless you wish to demonstrate your eligibility for a "net" effluent limitation for one or more pollutants, that is, an effluent limitation adjusted by subtracting the average level of the pollutant(s) present in your intake water. National Pollutant Discharge Elimination System (NPDES) regulations allow net limitations only in certain circumstances. To demonstrate your eligibility, under the "Intake" columns report the average of the results of analyses on your intake water (if your water is treated before use, test the water after it is treated), and attach a separate sheet containing the following for each pollutant:

1. A statement that the intake water is drawn from the body of water into which the discharge is made. (Otherwise, you are not eligible for net limitations.)

2. A statement of the extent to which the level of the pollutant is reduced by treatment of your wastewater. (Your limitations will be adjusted only to the extent that the pollutant is not removed.)

3. When applicable, a demonstration of the extent to which the pollutant in the intake vary physically, chemically or biologically from the pollutants contained in your discharge. For example, when the pollutant represents a class of compounds. Your limitations will be adjusted only to the extent that the intake pollutants do not vary from the discharged pollutants.

SPECIFIC INSTRUCTIONS. Table A lists the 34 "primary" industry categories in the left-hand column. For each outfall, if any of your processes that contribute wastewater falls into one of those categories, you must mark "X" in "Testing Required" column (column 2-A) and test for: A. All of the toxic metals, cyanide and total phenols; and B. The organic toxic pollutants contained in the gas chromatography/mass spectrometry (GS/MS) fractions indicated in Table A as applicable to your category, unless you qualify as a small business (see below). The organic toxic pollutants are listed by GC/MS fractions in Table II in 1.30. For example, the Organic Chemicals Industry has an "X" in all four

fractions; therefore, applicants in this category must test for all organic toxic pollutants in 1.30. If you are applying for a permit for a privately owned treatment works, determine your testing requirements on the basis of the industry categories of your contributors. When you determine which industry category you are in to find your testing requirements, you are not determining your category for any other purpose and you are not giving up your right to challenge your inclusion in that category (for example, for deciding whether an effluent guideline is applicable) before your permit is issued.

TABLE A – TESTING REQUIREMENTS FOR ORGANIC TOXIC POLLUTANTS INDUSTRY CATEGORY

		GC/MS FRACTION		
INDUSTRY CATEGORY	**VOLATILE**	**ACID**	**BASE/NEUTRAL**	**PESTICIDE**
Adhesives and sealants	X	X	X	-
Aluminum forming	X	X	X	-
Auto and other laundries	X	X	X	X
Battery manufacturing	X	-	X	-
Coal mining	X	X	X	X
Coil coating	X	X	X	-
Copper forming	X	X	X	-
Electric and electronic compounds	X	X	X	X
Electroplating	X	X	X	-
Explosives manufacturing	X	X	X	-
Foundries	X	X	X	-
Gum and wood chemicals	X	X	X	X
Inorganic chemicals manufacturing	X	X	X	-
Iron and steel manufacturing	X	X	X	-
Leather tanning and finishing	X	X	X	X
Mechanical products manufacturing	X	X	X	-
Nonferrous metals manufacturing	X	X	X	X
Ore Mining	X	X	X	X
Organic chemicals manufacturing	X	X	X	X
Paint and ink formulation	X	X	X	X
Pesticides	X	X	X	X
Petroleum refining	X	X	X	X
Pharmaceutical preparations	X	X	X	-
Photographic equipment and supplies	X	X	X	X
Plastic and synthetic materials mfg.	X	X	X	X
Plastic processing	X	-	-	-
Porcelain enameling	X	-	X	X
Printing and publishing	X	X	X	X
Pulp and paperboard mills	X	X	X	X
Rubber processing	X	X	X	-
Soap and detergent manufacturing	X	X	X	-
Stream electric power plants	X	X	X	-
Textile mills	X	X	X	X
Timber products	X	X	X	X

1 The pollutants in each fraction are listed in Item 1.30
X = Testing required
- = Testing not required

For all other cases (nonprocess wastewater outfalls and nonrequired GC/MS fractions), you must mark "X" in either the "Believed Present" column (column 2-B) or the "Believed Absent" column (column 2-C) for each pollutant, and test for those you believe present (those marked "X" in column 2-B. If you qualify as a small business (see below) you are exempt from testing for the organic toxic pollutants, listed in Table II. For pollutants in intake water, see discussion above. The "Long Term Average Values" column (column 5-2) are not compulsory but should be filled out if data is available.

Use composite samples for all pollutants in this part, except use grab samples for total phenols and cyanide.

You are required to mark "Testing Required" for dioxin if you use or manufacture one of the following compounds:

1. 2,4,5-trichlorophenocy acetic acid (2,4,5-T);
2. 2-(2,4,5-trichlorophenoxy) propanoic acid (Silvex, 2,4,5-TP);
3. 2-(2,4,5-trichlorophenoxy) ethyl 2,2-dichloropropionate (Erbon;
4. O,O-dimethyl O-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel);
5. Hexachlorophene (HCP).

If you mark "Testing Required" or "Believe Present," you must perform a screening analysis for dioxins, using gas chromatography with an electron capture detector. A TCDD standard for quantification is not required. Describe the results of this analysis in the space provided; for example, "no measurable baseline deflection at the retention time of TCDD" or "a measurable peak within the tolerances of the retention time of TCDD." The permitting authority may require you to perform a quantitative analysis if you report a positive result.

The Effluent Guidelines Division of EPA has collected and analyzed samples from some plants for the pollutants listed in Part C in the course of its BAT guidelines development program. If your effluents were sampled and analyzed as part of this program in the last three years, you may use this data to answer provided that the Missouri Department of Natural Resources approves, and provided that no process change or change in raw materials or operating practices has occurred since the samples were taken that would make the analyses unrepresentative of your current discharge.

SMALL BUSINESS EXEMPTION. If you qualify as a "small business" you are exempt from the reporting requirements for the organic toxic pollutants, listed in Table II. If your facility is a coal mine, and if your probable total annual production is less than 100,000 tons per year, you may submit past production data or estimated future production (such as a schedule of estimated total production under 30 CFR Section 795.14(c)) instead of conducting analysis for the organic toxic pollutants. If your facility is not a coal mine, and if your gross total annual sales for the most recent three years average less than $100,000 per year, in second quarter 1980 dollars, you may submit sales data for those years instead of conducting analyses for the organic toxic pollutants.

The production or sales data must be for the facility that is the source of the discharge. The data should not be limited to production or sales for the process or processes which contribute to the discharge, unless those are the only processes at your facility. For sales data, in situations involving intra-corporate transfers of goods and services, the transfer price per unit should approximate market prices for those goods and services as closely as possible. Sales figures for years after 1980 should be indexed to the second quarter of 1980 by using the gross national product price deflator (second quarter of 1980 = 100). This index is available in "National Income and Product Accounts of the United States" (Department of Commerce, Bureau of Economic Analysis).

2.00 A. You may not claim this information as confidential; however, you do not have to distinguish between use or production of the pollutants or list the amounts. Under NPDES regulations your permit will contain limits to control all pollutants you report in answer to this question, as well as all pollutants reported in item 1.30 to 2.00 B at levels exceeding the technology-based limits appropriate to your facility. Your permit will also require you to report to Missouri Department of Natural Resources if you, in the future, begin or expect that you will begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which you did not report here. Your permit may be modified at that time if necessary to control that pollutant.

B. For this item, consider only those variations which may result in concentrations of pollutants in effluents which may exceed two times the maximum values you reported in 1.30. These variations may be part of your routine operations or part of your regular cleaning cycles.

Under NPDES regulations your permit will contain limits to control any pollutant you report in answer to this question at levels exceeding the technology-based limits appropriate to your facility. Your permit will also require you to report to the Missouri Department of Natural Resources if you know or have reason to believe that any activity has occurred or will occur which would make your discharge of any toxic pollutant five times the maximum values reported in 1.30 or in this item, and your permit may be modified at that time if necessary to control the pollutant.

Do not consider variations which are the result of bypasses or upsets. Increased levels of pollutants that are discharged as a result of bypasses or upsets are regulated separately under NPDES regulations.

C. Examples of the types of variations to be described here include:

Changes in raw or intermediate materials;
Changes in process equipment or materials;
Changes in product lines;
Significant chemical reactions between pollutants in waste streams; and
Significant variation in removal efficiencies of pollution control equipment.

You may indicate other types of variations as well, except those which are the result of bypasses or upsets. Missouri Department of Natural Resources may require you to further investigate or document variations you report here.

Base your prediction of expected levels of these pollutants upon your knowledge of your processes, raw materials, past and projected product ranges, etc., or upon any testing conducted upon your effluents that indicates the range of variability that can be expected in your effluent over the next five years.

EXAMPLE: Outfall 001 discharges water used to clean six 500 gallon tanks. These tanks are used for formulation of dispersions of synthetic resins in water (adhesives). Use of toxic pollutants that can be expected in the next five years is:

1. Copper acetate inhibitor, ½, lb. per tank;
2. Dibutyl phthalate, 50 lbs. per tank;
3. Toulene, 5 lbs. per tank; and
4. Antimony oxide, 1 lb. per tank.

Based on normal cleaning an average of 1 percent and a maximum of 3 percent of the contents of each tank is collected and discharged once every two weeks in the 150 gallons of water used for cleaning. Treatment (pH adjustment, flocculation, filtration) removes 85 percent of metals and 50 percent of organic compounds.

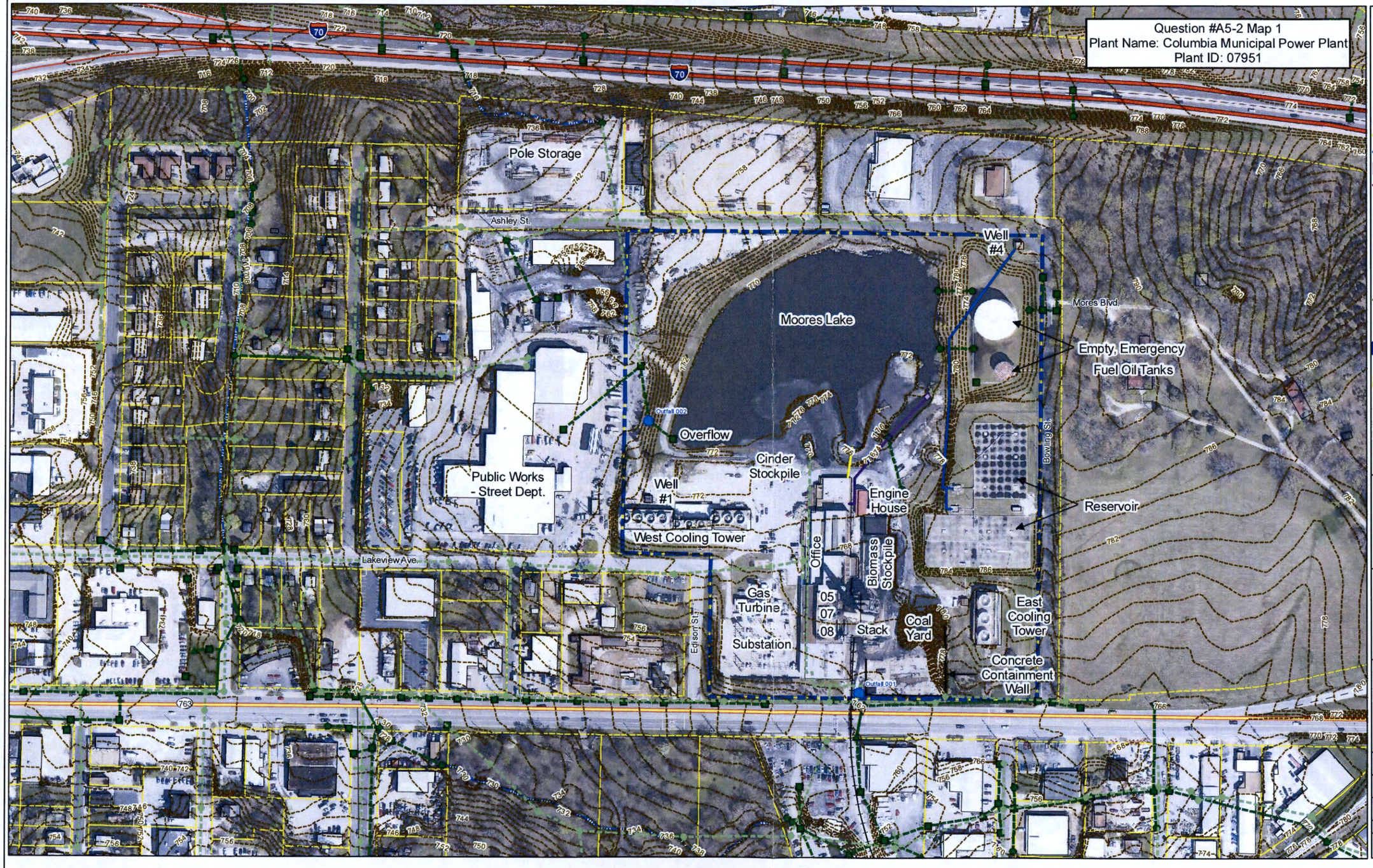
3.00 Self-explanatory.

4.00 The Federal Clean Water Act provides for severe penalties for submitting false information on this application form.

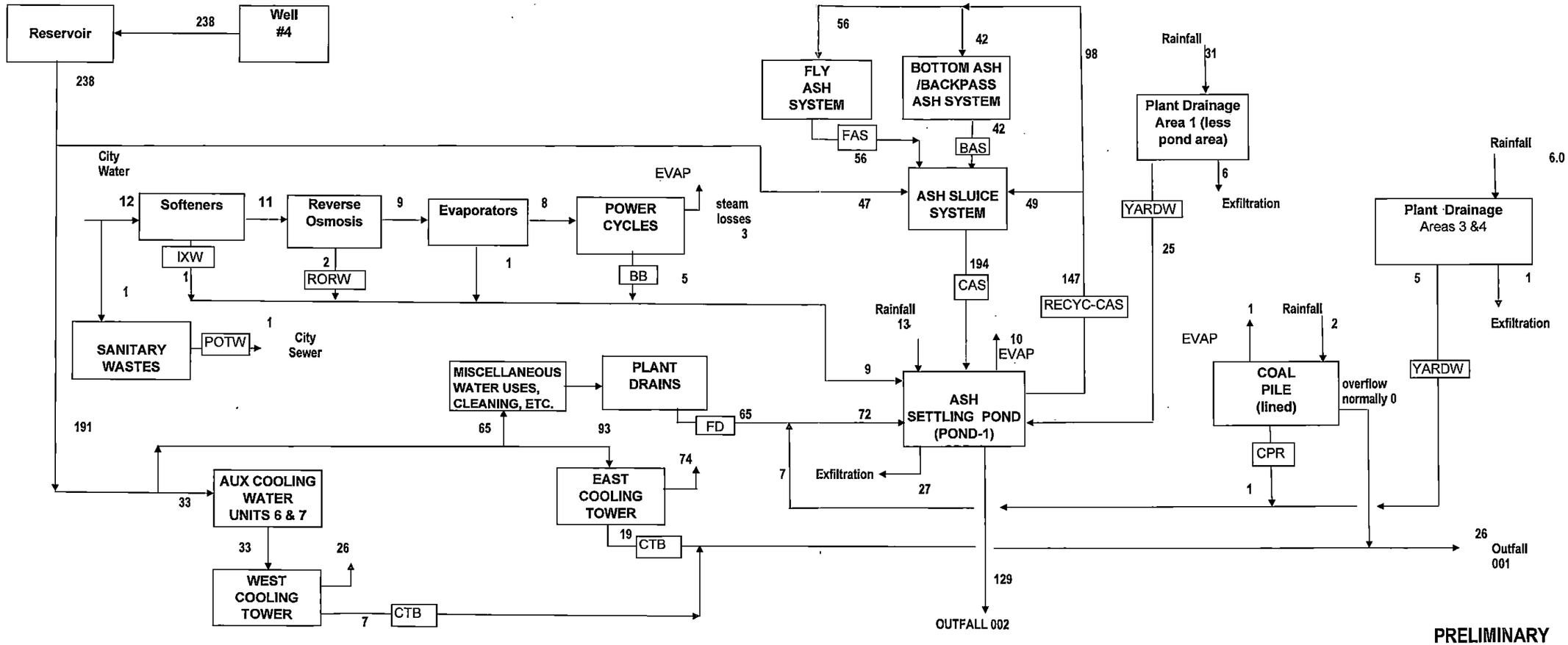
Section 309(c)(2) of the Federal Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application..... shall upon conviction, be punished by a fine of no more than $10,000 or by imprisonment for not more than six months, or both."

STATE REGULATIONS REQUIRE THE CERTIFICATION TO BE SIGNED AS FOLLOWS

1. For a corporation, by an officer of at least the level of plant manager;
2. For a partnership or sole proprietorship, by a general partner or the proprietor; or
3. For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking public official.


Question #A5-2 Map 1
Plant Name: Columbia Municipal Power Plant
Plant ID: 07951
Pole Storage
Ashley St.
Well #4
Moores Lake
Mores Blvd.
Empty, Emergency Fuel Oil Tanks
Outfall 002
Overflow
Cinder Stockpile
Public Works - Street Dept.
Well #1
West Cooling Tower
Engine House
Reservoir
Bowling St.
Office
Biomass Stockpile
Gas Turbine
05
07
08
Stack
Coal Yard
East Cooling Tower
Concrete Containment Wall
Substation
Edison St.
Lakeview Ave.
Outfall 001
763
0 50 100 200
Feet
Legend
Outfall Points
Bottom/Fly Ash Sluice Pipe
Well Line (12") - Approx. Location
Intake Structure
Intake Line - Approx. Location
sewer_san_structures
sewer_san_lines
storm_city_junction
storm_city_inlet
storm_city_culvert
storm_city_pipes
storm_city_box
06_topo_lines
Railroad
Property_Line
Drainage
parcel_Lines
Note: This drawing shows approximate location of utilities. No design should be based off these locations.
Sega
Engineers - Technicians
Design - Construction - Field Service
16041 Foster
P.O. Box 1000
Overland Park, KS 66085-1000
Columbia Water & Light
Columbia, MO
EPA ICR
DESIGN BY:
CHECKED BY:
DRAWN BY: J. CLAUSSEN
DATE: 11-30-10
CLIENT I.D.
SEGA PROJECT NO. 09-0081-01
FILE NAME: Columbia.mxd
DRAWING NO. A5-2-CMPP-Map1
REV. A

Question # A5-3	Plant Name: Columbia Municipal Power Plant Plant ID: 7951 SE Units 5, 7, and 8



PRELIMINARY

NOTES:
1. Flows shown are annual average

FUEL	COAL+WOOD	CONDENSER COOLING	COOLING TOWERS
NET PLANT OUTPUT (MW)	74		
LOAD FACTOR FOR PERIOD		CYCLE MAKEUP RATE	2.00%
		CASE ANNUAL AVERAGE	

SEGA INC		City of Columbia Power & Light Department	Project 9008101.0000
Eng: BAL	Dwg: BAL	Columbia Municipal Power Plant	Drawing
Check:	Date: 11/29/2010		