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 RSMo, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0095575
Owner:	Sikeston Board of Municipal Utilities
Address:	P.O. Box 370, Sikeston MO 63801
Continuing Authority:	same as above
Address:	same as above
Facility Name:	Sikeston Power Station
Facility Address:	1551 West Wakefield, Sikeston MO 63801
Legal Description:	NW ¼, SW ¼, Sec. 23, T26N, R13E, Scott County
UTM Coordinates:	See page 2
Receiving Stream:	Richland Drainage Ditch #4
First Classified Stream and ID:	Ditch #4 (P) WBID # 3046
USGS Basin & Sub-watershed No.:	Ash Slough Ditch 08020204-0604

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

FACILITY DESCRIPTION

Coal Fired Power Plant; SIC #4911; average net 235 MW power generation for the purpose of sale.
The facility operates one coal fired unit rated at 2349 MMBtu/hour and a cooling tower system. The boiler may use coal, pet coke, or #2 oil as fuel. The facility uses groundwater as cooling water. An electrostatic precipitator (ESP) is used to control particulate matter from the air discharge, and wet limestone scrubber may be used to control SOx emissions from this unit; scrubber wastewater is sent to the city sanitary sewer system. All discharges to surface water, including cooling towers, are routed to outfall #003. Domestic waste at this facility is sent to the city's sanitary sewer system. This facility does not require a certified wastewater operator per 10 CSR 20-9.030 as domestic waste is not managed onsite.

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.

February 1, 2023
Effective Date

December 31, 2025
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #003 – Cooling tower blowdown, process waste pond.
Receives process waste pond flow, bottom ash pond flow, fly ash pond flow, groundwater monitoring purge water, coal pile runoff, maintenance operations wastewater, and precipitation runoff. The bottom ash pond receives boiler blowdown, cooling tower basin cleaning discharge, bottom ash handling wastewater; these wastes will be routed to the process waste pond upon closure of the ash ponds. Limestone pile runoff was removed from this discharge at the 2022 renewal.

UTM Coordinates:	X = 800984, Y = 4087203
Design flow:	3.93 MGD
Average Flow:	2.66 MGD

UPSTREAM MONITORING: #SM1:
Ditch #4, sampling point on north side of W. Wakefield Avenue bridge

UTM Coordinates:	X = 800886, Y = 4087234

DOWNSTREAM MONITORING: #SM2:
Ditch #4, sampling point located on the north side of the small bridge next to the main building

UTM Coordinates:	X = 800909, Y = 4086795

PERMITTED FEATURE #CT1 – COOLING TOWER BLOWDOWN DISCHARGE: INTERNAL MONITORING POINT TO #003

Legal Description:	NW ¼, SW ¼, Sec. 23, T26N, R13E, Scott County
UTM Coordinates:	X = 801251, Y = 4086550
Maximum Flow:	2.83 MGD
Average Flow:	1.91 MGD

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #003 *process wastewater*	**TABLE A-1** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The facility is authorized to discharge from outfall(s) as specified. The final effluent limitations shall become effective on **February 1, 2023** and remain in effect until expiration of the permit. Discharges shall be controlled, limited, and monitored by the facility as specified below:

EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M					
PHYSICAL					
Flow	MGD	*	*	daily	24 hr. total
Temperature at #003	°F	90	*	once/week	measured
Temp – Upstream at #SM1	°F	*	*	once/week	measured
Temp – Downstream at #SM2	°F	*	*	once/week	measured
Temp Change ΔT |SM2-SM1|	°F	5	*	once/week	calculated
CONVENTIONAL					
Chlorine, Total Residual ‡	µg/L	16.6 (ML130)	10.5 (ML130)	once/month	grab
Oil & Grease	mg/L	20	15	once/month	grab
pH †	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					
Boron, TR	µg/L	*	*	once/month	grab
Iron, TR	µg/L	1597	917	once/month	grab
Selenium, TR	µg/L	7.0	4.5	once/month	grab
Zinc, TR	µg/L	151	73.7	once/month	grab
NUTRIENTS					
Ammonia as N	mg/L	*	*	once/month	grab
Kjeldahl Nitrogen, Total (TKN)	mg/L	*	*	once/month	grab
Nitrate plus Nitrite as N	mg/L	*	*	once/month	grab
Phosphorus, Total P (TP)	mg/L	*	*	once/month	grab
OTHER					
Chloride	mg/L	*	*	once/month	grab
Sulfate	mg/L	*	*	once/month	grab
Chloride plus Sulfate	mg/L	1000	1000	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2023. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
LIMIT SET: A					
OTHER					
Whole Effluent Toxicity, Chronic -See Special Condition #1	TU_c	*		once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2024. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

OUTFALL #CT1 *cooling tower blowdown*	**TABLE A-2** **FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**			
The facility is authorized to discharge from outfall(s) as specified. The final effluent limitations shall become effective on **February 1, 2023** and remain in effect until expiration of the permit. Discharges shall be controlled, limited, and monitored by the facility as specified below:				
EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
		DAILY MAXIMUM	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
LIMIT SET: M					
PHYSICAL					
Flow	MGD	*	*	once/month	Event Total
CONVENTIONAL					
Chlorine, Free Available	µg/L	500	200	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE MARCH 28, 2023. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.					
LIMIT SET: A					
PRIORITY POLLUTANTS					
(119) Chromium, Total Recoverable	µg/L	200	200	once/year	grab
(128) Zinc, Total Recoverable	µg/L	1000	1000	once/year	grab
MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JANUARY 28, 2024.					

* Monitoring and reporting requirement only

‡ Chlorine, Total Residual. This permit contains a Total Residual Chlorine (TRC) limit. This effluent limit is below the minimum quantification level of the most sensitive EPA approved CLTRC methods. The Department has determined the current acceptable minimum level (ML) for total residual chlorine to be 130 µg/L when using the DPD Colorimetric Method #4500 – CL G. from Standard Methods for the Examination of Waters and Wastewater. The facility will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit. Do not chemically dechlorinate if it is not needed to meet the permit limits.

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

▲ See special condition #3.

B. GROUNDWATER SCHEDULE OF COMPLIANCE

Schedules of compliance are allowed per 40 CFR 122.47 and 10 CSR 20-7.031(11). The facility shall attain compliance with final effluent limitations established below as soon as reasonably achievable:

1. The facility shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits for every calendar year. The first report is due January 28, 2024.

2. Within 10 years (or as amended officially through permit modification or renewal) of the effective date of this permit, the facility shall attain compliance with final limits for groundwater at the site pursuant to 10 CSR 20-7.031:
   a. Boron at 2000 µg/L
   b. Selenium at 50 µg/L
   c. Sulfate at 250 mg/L

3. Changes to this SOC may occur based on new information.

4. The Department agrees to deem the new groundwater limitations in this permit renewal as a "new requirement" for purposes of Section 644.145, RSMo at each permit renewal or modification until the permittee has had the opportunity to develop a realistic understanding of the costs associated with the provisions added in this renewal. The Permittee agrees that any schedule of compliance for groundwater limitations granted pursuant to a CAFCom in a subsequent permit decision will be calculated beginning from the date of issuance of this permit renewal. Therefore, if the schedule of compliance is equal to or less than 10 years, the compliance deadline imposed in this permit will not change, but if it exceeds 10 years, then only the additional time beyond 10 years will be added to the end of the schedule as an extension.

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) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   (d) The laboratory shall not chemically dechlorinate the sample.
   (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. Spills, Overflows, and Other Unauthorized Discharges.
   (a) Any spill, overflow, or other discharge(s) not specifically authorized above are unauthorized discharges.
   (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the regional office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department's 24 hour spill line at 573-634-2436.

3. 40 CFR 423.13(d)(1): The facility shall not discharge any of the 126 priority pollutants (listed in Appendix A of 40 CFR 423) 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). Compliance with this condition shall be determined from:
   (a) Analytical results from the parameters in Appendix A submitted annually. Report "0" for any pollutant not detected by the most sensitive analytical method. A detailed report shall be submitted with the results, including the laboratory's detection limit within the finalized laboratory report 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; or
   (b) Narrative justification or engineering calculations demonstrating the 126 priority pollutants (except for Cr and Zn) are not detectable in the blowdown discharge. Report "0" any pollutant not detectable using these methods. The facility must sample and submit results for total recoverable chromium and total recoverable zinc.

4. Groundwater monitoring and compliance with Groundwater Standards
   (a) The facility shall monitor all groundwater wells onsite for each parameter listed in Appendix I of 10 CSR 80-11.010
   (b) Monitoring frequency shall be at least twice each year (groundwater samples shall be taken two times each year and have enough time between sampling events that each sampling event is independent of the other).
   (c) All data shall be submitted with the application for renewal in electronic table format. Each data shall be individual in each cell (ie. "<" in one cell, "3" in the next cell; not "<3" which cannot be manipulated as easily.
   (d) The facility must submit information to the Department detailing the steps taken to meet future limits for groundwater standards compliance. This information must be submitted per the SOC annual requirements; this same information must be attached with the application for renewal as well.

5. The facility shall not discharge metal cleaning wastes [40 CFR 423.13(e)] to waters of the state unless authorized by the Department through official permit modification or renewal. An antidegradation review must be completed prior to any discharge of metal cleaning wastes to waters of the state.

6. 40 CFR 423.13(g)(1)(i) , (h)(1)(i), and (k)(1)(i): The facility shall not discharge ash transport water [40 CFR 423.11(p)] which is not legacy wastewater as soon as possible; and shall not discharge ash transport water on or after December 31, 2023. Legacy wastewater [FR Vol. 80 No. 212: 11/3/2015; preamble p. 67854, sec. VIII. C. 8.] is any bottom ash transport water, fly ash transport water, and FGD wastewater generated before December 31, 2023. The facility shall not discharge FGD wastewater to waters of the state. Although the 2015 version of 40 CFR 423 defining "legacy wastewater" was remanded in 2020, the Department has determined, through best professional judgment that proper closure of ash holding structures can only occur when dewatered. Dewatering shall be discharged though outfall #003.

7. The facility shall cease utilizing the fly ash pond at permit issuance.

8. The facility shall cease sluicing ash to the bottom ash pond before October 31, 2023.

9. This permit does not authorize the discharge of flue gas desulphurization (FGD) wastewater which is not legacy wastewater. To discharge FGD wastewater, the facility must request a permit modification. The facility shall not discharge FGD legacy wastewater as soon as possible, but no later than December 31, 2025.

10. 40 CFR 423.13(a): There shall be no discharge of polychlorinated biphenyl compounds (PCBs) such as those commonly [historically] used for transformer fluid.

11. 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 [state] the units in a particular location cannot operate at or below this level of chlorination."

12. Electronic Discharge Monitoring Report (eDMR) Submission System. Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, reporting of effluent monitoring data and any report required by the permit (unless specifically directed otherwise by the permit), shall be submitted via an electronic system to ensure timely, complete, accurate, and nationally consistent set of data for the NPDES program. The eDMR system is currently the only Department-approved reporting method for this permit unless specified elsewhere in this permit, or a waiver is granted by the Department. The facility must register in the Department's eDMR system through the Missouri Gateway for Environmental Management (MoGEM) before the first report is due.

13. All outfalls and permitted features must be clearly marked in the field.

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

15. Petroleum Secondary Containment.
The drainage area around the secondary containment area and the interior of the containment area shall be inspected monthly. Solids, sludge, and soluble debris shall not be allowed to accumulate in the secondary containment.
    (a) The interior of the secondary containment area shall be checked at least monthly for signs of leaks, spills, and releases of petroleum.
    (b) All petroleum captured in the secondary containment area shall be expeditiously removed and the source of the petroleum determined. Leaks or otherwise compromised equipment or appurtenances shall be promptly addressed/repaired.
    (c) Before releasing water accumulated in petroleum secondary containment areas, the water and area must be examined for hydrocarbon odor and presence of sheen to protect the general criteria found at 10 CSR 20-7.031(4).
    (d) Unimpacted stormwater (i.e. free from hydrocarbon odor and presence of sheen), should be drained from the secondary containment as soon as reasonably possible after a precipitation event.
    (e) If subparts (a) and (b) above were not followed, impacted stormwater shall not be discharged from the secondary containment and shall instead be managed in accordance with legally approved methods for disposal of process wastewater, such as being sent to an accepting wastewater treatment facility.
    (f) If subparts (a) and (b) were followed, impacted stormwater can only be drained from the secondary containment after removal of all odor or sheen utilizing appropriate methods.
    (g) The area surrounding the secondary containment must be free of signs of vegetative stress or other indicia of petroleum discharge.
    (h) The area below the outlet of the secondary containment area must be maintained to minimize soil washout, such as with stabilized vegetation, rip rap, or by releasing accumulated water slowly.
    (i) Records of all inspections, testing, and/or treatment of water accumulated in secondary containment shall be available on demand to the Department. Electronic records retention is acceptable. These records must be included in the SWPPP.

16. Stormwater Pollution Prevention Plan (SWPPP).
The facility's SIC code or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) and hence shall implement a Stormwater Pollution Prevention Plan (SWPPP) which must be prepared and implemented upon permit effective date. 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 annually or if site conditions affecting stormwater change. The facility 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); 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf The purpose of the 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 ineffective at providing the necessary protections for which it was designed. Corrective action describes the steps the facility took to eliminate the deficiency.
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) A map with all outfalls and structural BMPs marked.
    (c) A schedule for at least 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.
        (1) Operational deficiencies must be corrected within seven (7) calendar days.
        (2) Minor structural deficiencies must be corrected within fourteen (14) calendar days.
        (3) Major structural deficiencies (deficiencies projected to take longer than 14 days to correct) must be reported as an uploaded attachment through the eDMR system with the DMRs. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including proposed timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. If required by the Department, the facility shall work with the regional office to determine the best course of action. The facility should consider temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
        (4) All actions taken to correct the deficiencies shall be included with the written report, including photographs, and kept with the SWPPP. Additionally, corrective action of major structural deficiencies shall be reported as an uploaded attachment through the eDMR system with the DMRs.
        (5) BMP failure causing discharge through an unregistered outfall is considered an illicit discharge and must be reported in accordance with Standard Conditions Part I.

(6) 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 personnel upon request. Electronic versions of the documents and photographs are acceptable.

(d) A provision for designating a responsible individual for environmental matters and a provision for providing training to all personnel involved in housekeeping, material handling (including but not limited to loading and unloading), storage, and staging of all operational, maintenance, storage, and cleaning areas. Proof of training shall be submitted upon request by the Department.

17. Site-wide minimum Best Management Practices (BMPs). At a minimum, the facility shall adhere to the following:
(a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, warehouse activities, and other areas, and thereby prevent the contamination of stormwater from these substances.
(b) Ensure adequate provisions are provided to prevent surface water intrusion into the wastewater storage basins, to divert stormwater runoff around the wastewater storage basin, and to protect embankments from erosion.
(c) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
(d) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so 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. Spill records should be retained on-site.
(e) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
(f) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.
(g) Remove sediment from stormwater sediment pond(s) no less than every ten years, or more frequently dependent on the amount of sediment received; sediment accumulated shall be no more than 20% total volume or as prescribed in the engineering design, whichever is less. Records must be retained since last cleanout.

18. 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 for permit shield, and the CWA §402(k) for toxic substances. 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 CWA §§301(b)(2)(C) and (D), §304(b)(2), and §307(a)(2), 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 already limited in the permit. This permit may be modified, revoked and reissued, or terminated for cause, including determination new pollutants found in the discharge not identified in the application for the new or revised permit. The filing of a request by the facility for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.

19. Changes in Discharges of Toxic Pollutant.
In addition to the reporting requirements under 40 CFR 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) 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) 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 40 CFR 122.21(g)(7).
(4) The level established by the Director in accordance with 40 CFR 122.44(f).

20. Reporting of Non-Detects.
(a) Compliance analysis conducted by the facility or any contracted laboratory shall be conducted in such a way the precision and accuracy of the analyzed result can be enumerated. See sufficiently sensitive test method requirements in Standard

Conditions Part I, §A, No. 4 regarding proper testing and detection limits used for sample analysis. For the purposes of this permit, the definitions in 40 CFR 136 apply; method detection limit (MDL) and laboratory established reporting limit (RL) are used interchangeably in this permit.

(b) The facility shall not report a sample result as "non-detect" without also reporting the MDL. Reporting "non-detect" without also including the MDL will be considered failure to report, which is a violation of this permit.

(c) For the daily maximum, the facility shall report the highest value; if the highest value was a non-detect, use the less than "<" symbol and the laboratory's highest method detection limit (MDL) or the highest reporting limit (RL); whichever is higher (e.g. <6).

(d) When calculating monthly averages, zero shall be used in place of any value(s) not detected. Where all data used in the average are below the MDL or RL, the highest MDL or RL shall be reported as "<#" for the average as indicated in item (c).

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

22. This permit does not apply to fertilizer products receiving a current exemption under the Missouri Clean Water Law and regulations in 10 CSR 20-6.015(3)(B)8., and are land applied in accordance with the exemption.

23. This permit does not cover land disturbance activities.

24. This permit does not authorize the placement of fill materials in flood plains, placement of solid materials into any waterway, the obstruction of stream flow, or changing the channel of a defined drainage course. The facility must contact the U.S. Army Corps of Engineers (Corps) to determine if a CWA §404 Department of Army permit or §401 water quality certification is required for the project.

25. All records required by this permit may be maintained electronically per 432.255 RSMo. These records should be maintained in a searchable format.

26. Any discharges not expressly authorized in this permit and not clearly disclosed in the permit application cannot become authorized or shielded from liability under CWA section 402(k) or Section 644.051.16, RSMo, by disclosure to EPA, state, or local authorities after issuance of this permit via any means, including any other permit applications, funding applications, the SWPPP, discharge monitoring reporting, or during an inspection. Submit a permit modification application, as well as an antidegradation determination, if appropriate, to request authorization of new or expanded discharges.

27. Renewal Application Requirements.

(a) This facility shall submit an appropriate and complete application to the Department no less than 180 days prior to the expiration date listed on page 1 of the permit.

(b) Application materials shall include complete Form A, Form C, and Form D. If the form names have changed, then the facility should ensure they are submitting the correct forms as required by regulation.

(c) The facility may use the electronic submission system to submit the application to the Program, if available.

(d) The facility should review other parts of this permit to determine any additional reports required to be submitted at the renewal.

E. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to pursue an appeal before the administrative hearing commission (AHC) pursuant to 621.250 and 644.051.6 RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557; Jefferson City, MO 65102-1557
Phone: 573-751-2422 Fax: 573-751-5018
Website: https://ahc.mo.gov

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL, MODIFICATION, VARIANCE
OF
MO-0095575
SIKESTON POWER STATION

The Federal Water Pollution Control Act (Clean Water Act (CWA) §402 Public Law 92-500 as amended) established the National Pollutant 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 (§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 644 RSMo as amended). MSOPs may also cover underground injection, non-discharging facilities, and land application facilities. Permits are issued for a period of five (5) years unless otherwise specified for less.

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

PART I. FACILITY INFORMATION

Facility Type:	Industrial: Major, Primary, Categorical; >1 MGD
SIC Code(s):	4911
NAICS Code(s):	221112
Application Date:	06/26/2020
Expiration Date:	12/31/2020
Last Inspection:	08/05/2020

FACILITY DESCRIPTION:
Power generating facility for the purpose of sale. This facility operates one coal fired unit rated at 2349 MMBtu/hour constructed in 1978; and a cooling tower system. The boiler may use coal, pet coke, or #2 oil as fuel. The steam component makes this site subject to 40 CFR 423. The facility uses groundwater as cooling water. An electrostatic precipitator (ESP) is used to control particulate matter from the air discharge, and wet limestone scrubber may be used to control SOx emissions from this unit; scrubber wastewater is sent to the city wastewater treatment system, MO-0035009, if used. The generating unit is a wall fired steam boiler that routes exhaust to one of two stacks. The "wet stack" serves the wet limestone SO_2 scrubber which is currently not used and is blanked off. All flue gas currently passes through the "dry stack" which bypasses the scrubber. All discharges to surface water, including cooling towers and stormwater, are routed to outfall #003.

The facility has disclosed two ash ponds exist at the site and only the bottom ash pond remains in use at this time. However, the federal rules require closure of these ponds during the next permit term. The facility has asked the EPA for an extension on requirements found in 40 CFR 257. The Department issues permits in accordance with 40 CFR 423, and therefore the requirements under 40 CFR 423 (and not 40 CFR 257) will be implemented in this permit. Additional information can be found on the EPA-required site information page at http://www.sikestonpower.com/bottom-ash-pond.php and below in Part III of this fact sheet in the COAL COMBUSTION RESIDUALS and GROUNDWATER sections. This permit allows the discharge of what was historically termed "legacy" wastewater prior to the rule remand of that specific language, in 85 FR 64650, pages 64650-64723, 2020, citing the addition as arbitrary and capricious. However, the Department has latitude to continue to allow these legacy discharges under other regulations. The Department understands that proper closure of historic ash ponds requires dewatering so an appropriate cover can be established. Bottom and fly ash transport water discharge standards are identified in 40 CFR 423.13(k)(1)(i) and 40 CFR 423.13(h)(1)(ii), respectively. The rules, and this permit, continue to identify zero discharge standards for transport water generated after December 31, 2023; however, these limitations do not apply to legacy wastewater remaining in the ash ponds after that date. The permit writer has performed a reasonable potential analysis and found no reasonable potential exists for the dewatering to cause exceedances of water quality standards or criteria. This wastewater shall be directed out to outfall #003.

In an email dated April 6, 2021, the facility indicated they have plans to install a compact flight conveyor, called a submerged grind conveyor (SGC) which is intended to eliminate sluiced bottom ash wastewater. The installation is likely to occur in Spring 2023; see special conditions for compliance with 40 CFR 423.12(k)(1)(i).

The facility has one stormwater shed which contains all outdoor facility operations including coal storage, rail loop, rail car unlading, ash handling, and roof drains; this all discharges to outfall #003.

The facility has disclosed that metals cleaning occurs on a staggered schedule and that boilers and air heaters are chemically cleaned at this site, both of which are typical of power plant operations. This permit and the past permits prohibit the discharge of the metal cleaning wastewaters; the facility is considering other management options but is currently sending these wastewaters offsite through a third party for legal handling and disposal.

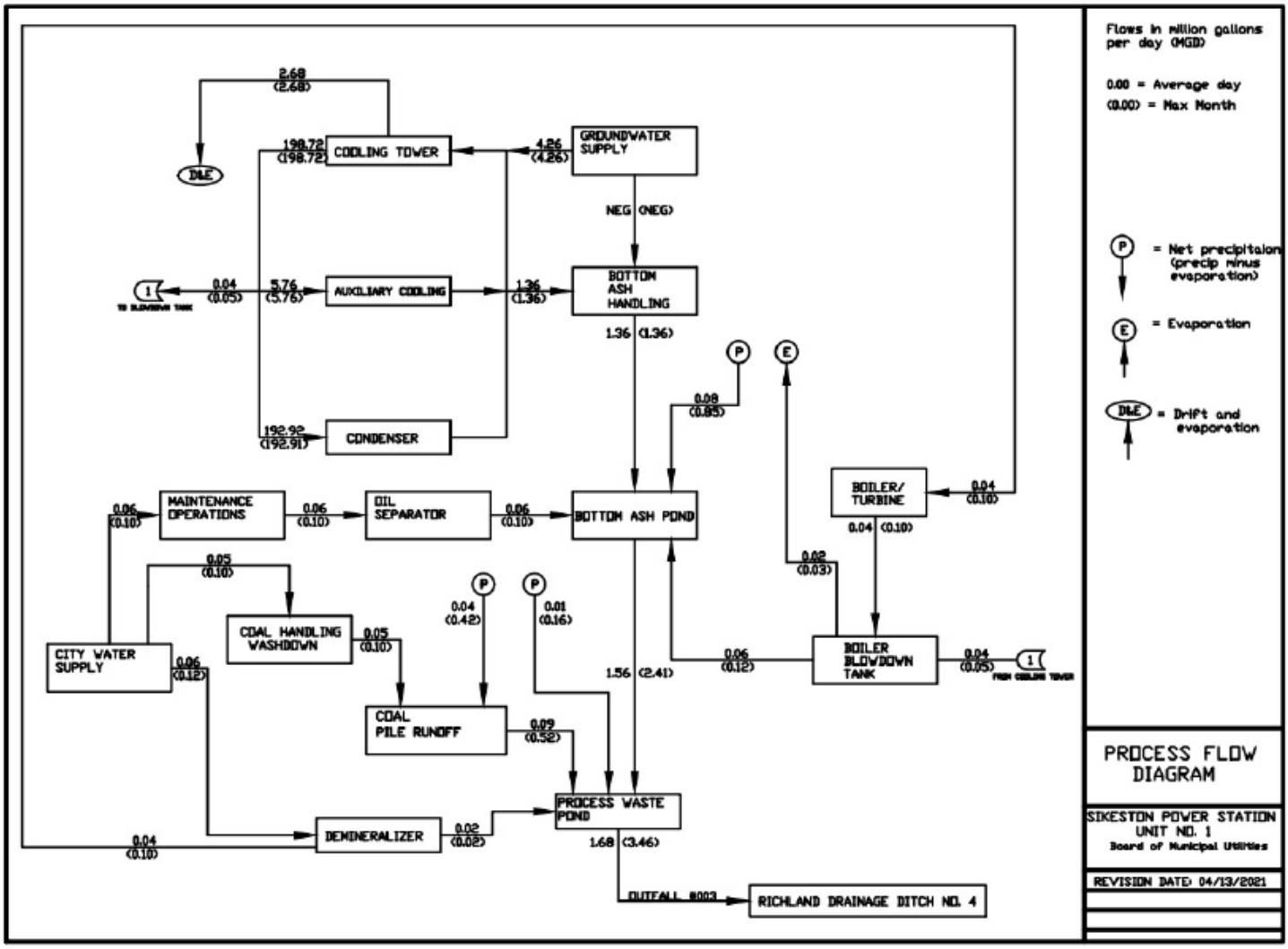
OUTFALL TABLE:

OUTFALL	AVERAGE FLOW	DESIGN FLOW	TREATMENT LEVEL	EFFLUENT TYPE
#003	2.66 MGD	3.93 MGD	cooling, settling	bottom ash pond, fly ash pond, boiler blowdown, cooling tower blowdown, basin cleaning discharge, bottom ash handling wastewater, maintenance operation wastewater, precipitation/stormwater, coal pile runoff, demineralizer wastewater

FACILITY MAP:

FACILITY FEATURES:

WATER BALANCE DIAGRAM:



The facility did not include the flue gas scrubber or bypass on this document as it is not proposed to discharge to waters of the state. Limestone pile is removed in the 2022 renewal.

FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last permit term. Arsenic was exceeded five times, and iron was exceeded once at outfall #003. However, the WQS for arsenic was changed; see part III, ANTIBACKSLIDING for information about arsenic. The effluent was measured by the regional office in August 2020. The data show the facility was in compliance with the Missouri Clean Water Law at that time.

Outfall #001, historically cooling water, was removed from permitting in 2015. The previous permit and this permit indicates an internal monitoring point of #CT1 for cooling tower blowdown. The design flow was 1.3 MGD.

CONTINUING AUTHORITY:
The facility is not required to be registered with the Missouri Secretary of State as this is a municipal facility. The Continuing Authority is the Sikeston Board of Municipal Utilities.

OTHER ENVIRONMENTAL PERMITS:
In accordance with 40 CFR 122.21(f)(6), the Department evaluated other environmental permits currently held by this facility. This facility has a Part 70 Air operating permit, OP2016-035 issued by the Department.

PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY TABLE:

OUTFALL	WATERBODY NAME	CLASS	WBID	DESIGNATED USES	DISTANCE TO SEGMENT	12-DIGIT HUC
#003	Ditch #4	P	3046	HHP, IRR, LWW, SCR, WBC-B, WWH (AQL)	0 miles	Ash Slough Ditch 08020204-0604

Classes are representations of hydrologic flow volume or lake basin size as defined in 10 CSR 20-7.031(1)(F). L1: Lakes with drinking water supply - wastewater discharges are not permitted to occur to L1 watersheds per 10 CSR 20-7.015(3)(C); L2: major reservoirs; L3: all other public and private lakes; P: permanent streams; C: streams which may cease flow in dry periods but maintain pools supporting aquatic life; E: streams which do not maintain surface flow; and W: wetland. Losing streams are defined in 10 CSR 20-7.031(1)(O) and are designated on the losing stream dataset or determined by the Department to lose 30% or more of flow to the subsurface.

WBID = Waterbody Identification: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 100K Extant-Remaining Streams or newer; 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; New C streams described on the dataset per 10 CSR 20-7.031(2)(A)3. as 100K Extent Remaining Streams.

HUC: Hydrologic Unit Code; TMDLs and lake nutrient criteria are the two most common watershed based limits. https://dnr.mo.gov/env/wpp/watersheds.htm will have additional information about the watersheds in Missouri

Designated Uses:
10 CSR 20-7.031(1)(C)1.: **ALP** = Aquatic Life Protection (formerly AQL); current uses are defined to ensure the protection and propagation of fish shellfish and wildlife, 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 ALP effluent limitations in 10 CSR 20-7.031 Table A1-B3 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 not included in WBC-A;
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 and drinking of water;
IRR = irrigation for use on crops utilized for human or livestock consumption, includes aquifers per 10 CSR 20-7.031(6)(A);
LWW = Livestock and Wildlife Watering (current narrative use is defined as LWP = Livestock and Wildlife Protection), includes aquifers per 10 CSR 20-7.031(6)(A);
DWS = Drinking Water Supply, includes aquifers per 10 CSR 20-7.031(6)(A);
IND = industrial water supply
10 CSR 20-7.031(1)(C)8. to 11.: Wetlands (10 CSR 20-7.031 Tables A1-B3 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 20-7.015(7) and 10 CSR 20-7.031(6): **GRW** = Groundwater
10 CSR 20-7.031(4): **GEN** = general criteria
n/a = not applicable

WATERS OF THE STATE DESIGNATIONS:
Waters of the state are divided into seven categories per 10 CSR 20-7.015(1)(B)1 through 7. The applicable water of the state category is listed below. Missouri's technology-based effluent regulations are found in [10 CSR 20-7.015] and are implemented in 10 CSR 20-7.015(2) through (8). When implementing technology regulations, considerations are made for the facility type, discharge type, and category of waters of the state. Effluent limitations may not be applicable to certain waters of the state, facility type, or discharge type. In these cases, effluent limitations may be based on a best professional judgment evaluation. The best professional judgment evaluation will take site specific conditions into consideration; including facility type, the receiving water body classification, and type of discharge. Stormwater discharges and land application sites are not directly subject to limitations found in 10 CSR 20-7.015, but may be subject to limitations determined by the best professional judgment evaluation. Effluent limitation derivations are discussed in PART IV: EFFLUENTS LIMITS DETERMINATIONS.
✓ All other waters; identified at 10 CSR 20-7.015(B)7 and 10 CSR 20-7.015(8)

EXISTING WATER QUALITY:
The receiving waterbody has no relevant water quality data available.

UPSTREAM OR DOWNSTREAM IMPAIRMENTS:
The permit writer has reviewed upstream and downstream stream segments of this facility for impairments.
✓ The permit writer has noted no upstream impairments near this facility.
✓ This facility is located at the top of the watershed therefore no upstream is present at this facility.
✓ The permit writer has noted downstream of the facility the stream has a TMDL; see below for specific permitting information.

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 a water body 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 for that watershed may be developed. The TMDL shall include the WLA calculation. http://dnr.mo.gov/env/wpp/tmdl/

✓ Applicable. This facility discharges to a watershed encompassing the Old Channel Little River (New Madrid, Stoddard, and Scott Counties) TMDL approved by the EPA September 2006 for sediment. The source is listed as non-point agricultural sources and protection of aquatic life is the impaired use. This facility was not enumerated within the TMDL.

RECEIVING WATERBODY MONITORING REQUIREMENTS:

✓ The facility is required to monitor the stream for upstream and downstream temperature. No other receiving water monitoring requirements are recommended at this time.

WATERBODY MIXING CONSIDERATIONS:
For outfall #003, mixing zone and zone of initial dilution are supplied below.

RECEIVING STREAM LOW-FLOW VALUES:

OUTFALL	RECEIVING STREAM	LOW-FLOW VALUES (CFS)				
		GAGING STATION	1Q10	7Q10	30Q10	60Q10
#003	Ash Slough Ditch #4	n/a StreamStats	1.26	1.67	2.15	2.49

The permit writer used an online assessment and calculator developed by the USGS. The report is available upon request.

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) (CHRONIC) [10 CSR 20-7.031(5)(A)5.A.4.B.(II)(a)]				ZONE OF INITIAL DILUTION (CFS) (ACUTE) [10 CSR 20-7.031(5)(A)4.B.(II)(b)]			
1Q10	7Q10	30Q10	60Q10	1Q10	7Q10	30Q10	60Q10
0.315 cfs	0.418 cfs	0.538 cfs	0.623 cfs	0.032 cfs	0.042 cfs	0.054 cfs	0.062 cfs

The ZID cannot be more than 10 times the design flow, therefore the ZID was determined as one tenth of the MZ.

THERMAL MIXING CONSIDERATIONS:
Thermal mixing is based on different regulations than toxic mixing, and thermal mixing considerations are found in 10 CSR 20-7.031(5)(D).

✓ This facility has thermal discharge limitations where mixing is incorporated, see permit Part A and fact sheet Part IV for specific thermal limitations and derivation of the limits.

PART III. RATIONALE AND DERIVATION OF PERMIT CONDITIONS

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

✓ Not applicable; the facility is an existing facility.

ANTIBACKSLIDING:
Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(l)] 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 reissuance conform to the anti-backsliding provisions of CWA §402(o), and 40 CFR 122.44.

- The USGS has developed and provided a tool to determine the low flow of any stream in the United States. As this tool was available to the Department at this permit renewal, the permit writer was able to calculate the low flows (such as 7Q10) for the receiving stream. This then provided mixing considerations to the parameters.
- Any future antidegradation review by the Department related to metals cleaning waste shall not be considered backsliding pursuant to 40 CFR 122.44(l)(2)(i) based on the changing conditions at the facility's closed fly ash pond.

ANTIDEGRADATION REVIEW:
For process water discharges with new, altered, or expanding flows, 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 at this time, therefore no further review necessary.
- ✓ However, the facility anticipates it may conduct an antidegradation review during the upcoming permit term related to potential discharge of metals cleaning wastes, since previously those wastes were stored in the fly ash pond, which is now required to be closed pursuant to federal regulations. The concentrations of pollutants within the metals cleaning wastewater is unknown to the facility at the time of public review and will be determined when periodic metals cleaning events occur.

This permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which must include an alternative analysis (AA) of the BMPs. The SWPPP must be developed, implemented, updated, and maintained at the facility. Failure to implement and maintain the chosen alternative, is a permit violation. The AA is a structured evaluation of BMPs to determine which are reasonable and cost effective. Analysis should include practices designed to be 1) non-degrading, 2) less degrading, or 3) degrading water quality. The chosen BMP will be the most reasonable and cost effective while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The analysis must demonstrate why "no discharge" or "no exposure" are not feasible alternatives at the facility. Existing facilities with established SWPPPs and BMPs need not conduct an additional alternatives analysis unless new BMPs are established to address BMP failures or benchmark exceedances. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.015(9)(A)5 and 7.031(3). For stormwater discharges with new, altered, or expanding discharges, the stormwater BMP chosen for the facility, through the AA 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.

BEST MANAGEMENT PRACTICES:
Minimum site-wide best management practices are established in this permit to ensure all facilities are managing their sites equally to protect waters of the state from certain activities which could cause negative effects in receiving water bodies. While not all sites require a SWPPP because the SIC codes are specifically exempted in 40 CFR 122.26(b)(14), these best management practices are not specifically included for stormwater purposes. These practices are minimum requirements for all industrial sites to protect waters of the state. If the minimum best management practices are not followed, the facility may violate general criteria [10 CSR 20-7.031(4)]. Statutes are applicable to all permitted facilities in the state, therefore pollutants cannot be released unless in accordance with 644.011 and 644.016 (17) RSMo.

CHLORINE/BROMINE BEST PROFESSIONAL JUDGMENT LIMITATIONS:
Many facilities utilize both chlorine and 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 specificity, 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 actively as 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. This best professional judgment determination is supported by 40 CFR 423.11(a).

COST ANALYSIS FOR COMPLIANCE (CAFCOM):
Pursuant to 644.145 RSMo, when incorporating a new requirement for discharges from publicly owned facilities, or when enforcing provisions of this chapter or the CWA, pertaining to any portion of a publicly owned facility, the Department shall make a finding of affordability on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the CWA. This process is completed through a Cost Analysis for Compliance (CAFCom). Permits not including new requirements may be deemed affordable.

- ✓ The facility considered whether to prepare a (CAFCom pursuant to Section 644.145, RSMo for the site during this renewal. However, the facility determined it was impossible to complete a CAFCom at this time given the extensive information necessary to be collected about the Sikeston population. Therefore, although the terms of the permit have changed significantly to include a groundwater schedule of compliance, the Department is not required to complete a cost analysis for compliance because the Permittee has waived the CAFCom analysis for this permit renewal. The Department recognizes the addition of groundwater limits to this permit may require a CAFCom analysis at future permit renewal or modification due to presently unknown costs associated with developing a sufficient groundwater remedy. The Department has agreed to deem the new groundwater limitations in this permit as a "new requirement" for purposes of Section 644.145, RSMo at each permit modification or renewal until the permittee has had the opportunity to develop a realistic understanding of the costs associated with the provisions added in this renewal. The permittee has agreed that any schedule of compliance granted in a subsequent permit decision will be calculated beginning from the date of issuance of this 2022 permit renewal. For example, if the CAFCom determines 12 years is appropriate, the permit will extend the schedule of compliance by 2 years. The Department may consider requirements of federal mandates when making findings of affordability pursuant to Section 644.145.3(3) therefore the Department's affordability assessment can separately delineate costs associated with ash pond closure pursuant to federal mandates of 40 CFR Part 257, or installation of ash handling devices pursuant to 40 CFR Part 423. Any affordability finding which may extend the compliance date of water quality standards compliance, cannot extend any technology or specific federal requirement.

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:
This special condition reiterates the federal rules found in 40 CFR 122.44(f) for technology treatments and 122.42(a)(1) for all other toxic substances. 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 listed in 40 CFR 401.15 and any other toxic parameter the Department determines is applicable for reporting under these rules in the permit. The facility should also consider any other toxic pollutant in the discharge as reportable under this condition and must report all increases to the Department as soon as discovered in the effluent. The Department may open the permit to implement any required effluent limits pursuant to CWA §402(k) where sufficient data was not supplied within the application but was supplied at a later date by either the permittee or other resource determined to be representative of the discharge, such as sampling by Department personnel.

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 facility is not currently under Water Protection Program enforcement action.

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:
Domestic wastewater is defined as wastewater (i.e., human sewage) originating primarily from the sanitary conveyances of bathrooms and kitchens. Domestic wastewater excludes stormwater, animal waste, process waste, and other similar waste.

- ✓ Not applicable; this facility discharges domestic wastewater to an off-site permitted wastewater treatment facility (POTW).

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. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.

Additional information: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74 (WQ422 through WQ449).

- ✓ Not applicable; the facility does not manage domestic wastewater on-site.

EFFLUENT LIMITATIONS:
Effluent limitations derived and established for this permit are based on current operations of the facility and applied per 10 CSR 20-7.015(9)(A) as applicable. Any flow through the outfall is considered a discharge and must be sampled and reported as provided in the permit. Future permit action due to facility modification may contain new operating permit terms and conditions which supersede the

terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).

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. The 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 facilities 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 facility must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each operating permit. An approved waiver is not 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.

To assist the facility in entering data into the eDMR system, the permit describes limit sets designators in each table in Part A of the permit. The data entry personnel should use these identifiers to ensure data entry is being completed appropriately. For example, M for monthly, Q for quarterly, and others.

FEDERAL 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) at 40 CFR 423 applicable to the wastewater and certain stormwater discharges at this site, and is applied under 40 CFR 125.3(a). Should Reasonable Potential be established for any particular parameter, and water-quality derived effluent limits are more protective of the receiving water's quality, the WQS will be used as the limiting factor in accordance with 40 CFR 122.44(d) and 10 CSR 20-7.015(9)(A). See Part IV: EFFLUENT LIMITS DETERMINATION.
- ✓ The new Steam Electrical Power Generating Point Sources [40 CFR Part 423] ELG became effective on January 4, 2016 and is incorporated herein; the revised regulations become effective on December 13, 2020, and are also incorporates as noted.
- ✓ BPT is best practicable control technology applicable to all facilities at all times; 423.12
- ✓ BAT is best available technology economically achievable applicable to this facility; 423.13

PARAMETER	40 CFR 423	DAILY MAXIMUM	MONTHLY AVERAGE
126 Priority Pollutants	Cooling Tower Blowdown	Appendix A	Appendix A
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, legacy ash transport, 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

- ✓ All metals are total recoverable.

- ✓ The facility used an FGD scrubber until 1998; FGD sludges were emptied into the bottom ash pond and are now buried beneath coal ash. However due to the Department's concern that the FGD sludges may not be fully buried, the wastewater at this site may contain legacy FGD wastewater as a sludge maintains moisture.
- ✓ Discharge of FGD wastewater is prohibited. See special conditions for this prohibition. When the FGD scrubber was operational, FGD wastewater was sent through the bottom ash impoundment. Currently, the only water going through the local wastewater treatment facility is residual potable water from sink drains and restroom facilities, which remain winterized.
- ✓ The facility does not discharge metal cleaning wastes. See special conditions for this prohibition.
- ✓ * See special conditions for ash sluice water prohibition.

GENERAL CRITERIA CONSIDERATIONS:
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into permits for pollutants determined to cause, have reasonable potential to cause, or to contribute to, an excursion above any water quality standard, including narrative water quality criteria. In order to comply with this regulation, the permit writer has completed a reasonable potential determination on whether discharges have reasonable potential to cause, or contribute to an excursion of the general criteria listed in 10 CSR 20-7.031(4). In instances where reasonable potential exists, the permit includes limitations within the permit to address the reasonable potential. In discharges where reasonable potential does not exist, the permit may include monitoring to later determine the discharge's potential to impact the narrative criteria. Additionally, 644.076.1 RSMo, as well as Part I §D – Administrative Requirements of Standard Conditions included in this permit state it shall be unlawful for any person to cause or allow any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of §§644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule, or regulation promulgated by the commission. See Part IV for specific determinations.

GROUNDWATER MONITORING, COAL COMBUSTION RESIDUALS AND COMPLIANCE WITH GROUNDWATER STANDARDS:
Groundwater is a water of the state according to 644.016(27) RSMo, is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6), and must be protected accordingly.

- ✓ This facility is monitoring the groundwater at the site because ash ponds are being assessed for discharges from the waste mass into groundwater.

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. This permit does not regulate the disposition of the ash, but does regulate water discharges from ash containing structures. The US EPA has 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 2019 data show compliance with 40 CFR 257 due to no statistically significant increase (SSI) in values between background and downgradient wells. 40 CFR 257 bases compliance on the facility determining if a set of "detection monitoring" parameters. In summary, the statistical analysis results for samples obtained during the fourth and fifth groundwater detection monitoring events conducted on May 28 and August 28, 2019, respectively, do not indicate the presence of confirmed SSIs associated with the bottom ash pond groundwater monitoring system. Therefore, the consultant recommended detection monitoring of the bottom ash pond continue on a semi-annual basis in accordance with §257.94(b). The Department's groundwater monitoring is changed to twice annually based on the data supplied and per the facility's request.

Groundwater data supplied with the application for renewal were based on Missouri's groundwater criteria being assessed at this site and per the previous permits special conditions at the request of the permit writer. Data show elevated levels of boron in wells MW-7 and MW-9. At this time, these wells are not in compliance with the Missouri groundwater standards found in 10 CSR 20-7.031. Understanding how difficult it is to treat groundwater, the Department is providing a schedule of compliance for the facility to assess and determine a method of compliance with these regulations. See Part B SCHEDULE OF COMPLIANCE in the permit. Iron and manganese, while retaining groundwater standards below the reported values, were not found to be in non-compliance. The data show iron and manganese are ubiquitous at the site and present generally equally in all wells, both upgradient, side-gradient, and downgradient, except for instances where boron is displacing iron in the downgradient wells.

Statistical independence of groundwater samples is most likely when samples are collected at time intervals sufficiently large to prevent sampling the same volume of groundwater. Accordingly, it was determined the time intervals separating monitoring events were sufficient to ensure physical independence of samples. A minimum interval between monitoring events was calculated with hydraulic gradient, hydraulic conductivity and effective porosity based on Unified Guidance. The calculated interval is based on the time required for groundwater to travel the distance of the well bore (maximum diameter of the well and surrounding filter pack).

Boron is a known contaminant of coal ash. Studies show that boron is a primary leaching parameter in ash. 40 CFR 257 assesses boron in the detection monitoring constituents of Appendix III to Part 257. However, the site has not yet identified the bottom ash

pond as needing assessment monitoring. Monitoring wells 3 through 6, and 8 serve the bottom ash pond, and the site has identified wells 1 through 3, 7 and 9 as associated with the fly ash pond. The report for 2019 was available online and while three parameters were shown to have increased significantly in the downgradient wells, the facility instead completed an alternative source evaluation which concluded the calcium, sulfate, and total dissolved solids (TDS) was coming from the coal pile leaching into groundwater, which is allowed under 40 CFR 257.

The method the facility is using to determine statistically increased constituents failed to determine that boron is higher in the downgradient wells than the upgradient. Additionally, the reports show that the coal pile is also leaching constituents into the groundwater at the site.

As site conditions continue to change as the ponds are closed or wastewater handling methods changed, the site will continue to be evaluated to collect additional groundwater data to further determine potential groundwater contamination in comparison to the groundwater standards in 10 CSR 20-7.031. The special conditions within this permit require the facility to monitor, evaluate, and comply with groundwater standards over the next two permit terms.

The groundwater monitoring requirements are tied to the EPA requirements for closure of the ash ponds, which the facility has requested two time extensions in November 2020 for achieving final compliance. The extension requests indicate the facility has submitted requests for additional time to complete requirements of 40 CFR 257 promulgated in 2015 within Subpart D for required closure of impoundments; and the edicts of 40 CFR 423 for ceasing discharge of ash sluice waste water and for separating ash impoundment wastewater from all other wastewater sources. The Department does not regulate activities performed under 40 CFR 257, as that regulation is self-implementing. However, the Department is the administrator over NPDES compliance which includes implementing conditions found in Missouri Clean Water Law, 10 CSR 20, and 40 CFR Subpart N, and other regulations implementing the federal Clean Water Act.

While the facility has submitted a request under 40 CFR 257, the facility is also subject to the NPDES Effluent Limit Guidelines in 40 CFR 423, which regulates the discharge of bottom ash transport wastewater and flue gas desulphurization wastewater. This facility does not actively discharge FGD wastewater, so only discussion of bottom ash transport water is addressed here. 40 CFR 423 was revised in 2017 by extending the previously established compliance dates for "as soon as possible" from 11/1/2018, to 11/1/2020. In the newest revised regulation published 10/13/2020 and effective December 14, 2020, the bottom ash transport wastewater must cease discharge at the very latest, by 12/31/2023. If the facility wishes to continue to discharge bottom ash transport wastewater beyond the 12/31/2023 date, the engineered specifications must be submitted to the Department for engineering approval under a permit modification in accordance with the 10/13/2020 Federal Register #64650. In the 10/2020 revised regulation, the allowance for continuation of discharge of these two wastewater streams and allowing engineered systems to discharge up to 10% of these wastewaters. However, this facility has not provided any engineering documentation indicating they wish to continue to discharge bottom ash transport wastewater after 12/31/2023. The allowance to continue discharging bottom ash transport wastewater will require a permit modification. The 2023 final date is included in the permit as a special condition.

While the rule mentioned above is geared towards solid waste, the water protection program considers 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. While this permit does not regulate the fate of coal ash outside of discharge, this operating permit contains a special condition to address concerns regarding ash ponds/impoundments at this facility and their potential to impact groundwater. As EPA's rules on coal ash are self-implementing and the Department's Waste Management Program regulates the usage of coal ash, this permit is limited to potential discharges of coal piles per 40 CFR 423 and the potential discharges from the storage impoundments to surface or subsurface waters. 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...*" And 644.016(27) includes subsurface water in the definition of waters of the state. 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 the GROUNDWATER MONITORING section below. The CCR compliance website for this facility is: http://www.sikestonpower.com/

During the 2018 legislative session, the Missouri legislature revised statute 260.242, RSMo directing the Department to develop and adopt rules for coal combustion residuals. The statute became effective August 28, 2018. Under the statute, rules will be developed by the Waste Management Program and allows for the development of a risk based approach. For updates on the development of the rule and the risk based approach, see the WMPs Laws and Regulations webpage https://dnr.mo.gov/env/swmp/lawsregs.htm The Water Protection Program is uncertain how this statute will affect the Program's future requirements for ash impoundments. However, in May 2019, the rulemaking was withdrawn because of the uncertainty with the federal regulations and the expectation they would change based on litigation.

The current monitoring wells were previously listed in the "Facility Description" portion of the permit during the last permit term. However, the wells were removed from this section because the well positions are not require to be maintained, only that the groundwater monitoring network effectively monitor the groundwater at the site and that the other groundwater terms and conditions of the permit be met. The facility should not be penalized by requiring a permit modification to remove or relocate a well. Monitoring

well locations are typically determined through consultation with the Water Protection Program and the Environmental Assistance Unit of the Missouri Geological Survey. The WPP acts as the intermediary between the two units, providing coordination and a clearing house for groundwater. Should the facility need to relocate or remove a well, the facility may contact the WPP for coordination, although coordination is not necessarily required when the facility is monitoring under the CCR Rule.

As a facility with groundwater limits, the Department has made available the Missouri Risk-Based Corrective Action (MRBCA) process to try to demonstrate the impacted groundwater will not result in an unreasonable risk to human health or the environment; thereby becoming eligible for alternative groundwater effluent limits. The regulations citing the MRBCA process are found at 10 CSR 20-7.015(7)(E)6.A. The Department notes that sites have numerous ways to comply with groundwater limits and does not promote one method over another.

FLY ASH POND

The site has identified wells 1 through 3, 7, and 9 as associated with the fly ash pond. The fly ash pond will cease receiving wastes and initiate closure by April 11, 2021.

FLY ASH POND MONITORING WELLS:

BOTTOM ASH POND

Monitoring wells 3 through 6, and 8 serve the bottom ash pond, The bottom ash pond is regulated with compliance dates under both 40 CFR 257 and 40 CFR 423. Under 40 CFR 257, the facility initiated a request to EPA for the delay of the bottom ash pond as they have not determined a closure path at this time. Their request is available online, "Demonstration for a Site-Specific Alternate to Initiation of Closure Deadline for the Bottom Ash Pond at Sikeston under the Coal Combustion Residual (CCR) Rule, 40 CFR Part 257, Subpart D". Under this request, the impoundment would continue to receive CCR and non-CCR, such as low volume wastes, waste streams until conversion to a "dry" bottom ash handling system and redirection of other low volume waste streams are complete. Specifically, to continue operation, the facility wants allowances of additional time to complete the following activities in order to cease routing flow to the bottom ash pond:

- Cease sluicing of bottom ash, economizer, and pyrites to the bottom ash pond by installing a compact submerged conveyor, storage bunker, and ancillary equipment by May 1, 2023.
- Reroute non-CCR waste streams, boiler blowdown and oil water separator effluent to the existing process water pond by April 29, 2022.
- Reroute non-CCR waste stream, cooling tower blowdown, effluent to a new low volume waste pond (LVWW) or the existing process water pond by October 15, 2023. This may require an antidegradation review and construction permit; these items should be factored into the timeline for completion.

BOTTOM ASH POND MONITORING WELLS:

In comments marked Stinson, dated January 2021, the facility requested twice-annual groundwater monitoring. This is congruent with current 40 CFR 257 sampling requirements and was granted to the facility.

LAND APPLICATION:
Land application, or surficial dispersion of wastewater and/or sludge, is performed by facilities to maintain a basin as no-discharge. Requirements for these types of operations are found in 10 CSR 20-6.015; authority to regulate these activities is from 644.026 RSMo.

- ✓ Not applicable; this permit does not authorize operation of a surficial land application system to disperse wastewater or sludge.
- ✓ This permit does not authorize land disposal or the application of hazardous waste.
- ✓ This facility has expressed interest and may consider land application of wastewater from metal cleaning in a future permit modification or renewal.

LAND DISTURBANCE:
Land disturbance, sometimes called construction activities, are actions which cause disturbance of the root layer or soil; these include clearing, grading, and excavating of the land. 40 CFR 122.26(b)(14) and 10 CSR 20-6.200(3) requires permit coverage for these activities. Coverage is not required for facilities when only providing maintenance of original line and grade, hydraulic capacity, or to continue the original purpose of the facility.

- ✓ Not applicable; this permit does not provide coverage for land disturbance activities. The facility may obtain a separate land disturbance permit (MORA) online at https://dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm; MORA permits do not cover disturbance of contaminated soils, however, site specific permits such as this one can be modified to include appropriate controls for land disturbance of contaminated soils by adding site-specific BMP requirements and additional outfalls. Closure activities of waste masses, such as the ash holding ponds are not considered land disturbance.

MAJOR WATER USER:
Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). https://dnr.mo.gov/pubs/pub2236.htm

- ✓ Applicable; this facility is a major water user and is registered with the state as user number 50371573.

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). "Aquatic Life Protection" in 10 CSR 20-7.031 Tables A1 and A2, as well as general criteria protections in 10 CSR 20-7.031(4) apply to this discharge. The hardness value used for hardness-dependent metals calculations was based on the ecoregion's 50th percentile, also known as the median per 10 CSR 20-7.015(1)(CC), and is reported in the calculations below. Per a memorandum dated August 6, 2019, the Director has determined permit writers should use the median of the Level III Ecoregion to calculate permit limits, or site specific data if applicable. Additional use criterion (HHP, DWS, GRW, IRR, or LWW) may also be used, as applicable, to determine the most protective effluent limit for the receiving waterbody's class and uses. The previous permit's derivations used 162 mg/L for hardness, however, the ecoregion hardness was identified as 130 mg/L for the Mississippi Alluvial Plain. This will make some calculations more restrictive. However, due to development of a new tool, StreamStats, the USGS has been able to supply the low flow values of almost all streams in Missouri. Because of this, the calculations will be a little higher for the parameters due to the small amount of mixing the stream provides. Each parameter with which decreased effluent limits are implemented in the renewal, will be reviewed in Part III, ANTIBACKSLIDING.

MODIFICATION REQUESTS:
Facilities have the option to request a permit modification from the Department at any time under RSMo 644.051.9. Requests must be submitted to the Water Protection Program with the appropriate forms and fees paid per 10 CSR 20-6.011. It is recommended facilities contact the permit writer early so the correct forms and fees are submitted, and the modification request can be completed in a timely fashion. Minor modifications, found in 40 CFR 122.63, are processed without the need for a public comment period. Major modifications, those requests not explicitly fitting under 40 CFR 122.63, do require a public notice period. Modifications to permits should be completed when: a new pollutant is found in the discharge; operational or functional changes occur which affect the technology, function, or outcome of treatment; the facility desires alternate numeric benchmarks; or other changes are needed to the permit.

Modifications are not required when utilizing or changing additives in accordance with the publication https://dnr.mo.gov/pubs/pub2653.htm nor are required when a temporary change or provisional discharge has been authorized by the regional office. While provisional discharges may be authorized by the regional office, they will not be granted for more than the time necessary for the facility to obtain an official modification from the Water Protection Program. Temporary provisional discharges due to weather events or other unforeseen circumstances may or may not necessitate a permit modification. The facility may ask for a Compliance Assistance Visit (CAV) from the regional office to assist in the decision-making process; CAVs are provided free to the permitted entity.

NUTRIENT MONITORING:
Nutrient monitoring is required for facilities characteristically or expected to discharge nutrients (nitrogenous compounds and/or phosphorus) when the design flow is equal to or greater than 0.1 MGD per 10 CSR 20-7.015(9)(D)8. This requirement is applicable to all Missouri waterways.

✓ The total design flow for this facility is >1 MGD and the facility discharges nutrients, therefore nutrient monitoring is required on a monthly basis per 10 CSR 20-7.015(9)(D)8.B. for discharges equal to or greater than 1 MGD. This facility is required to monitor for ammonia, total Kjeldahl nitrogen, nitrate plus nitrite, and phosphorus.

Water quality standards per 10 CSR 20-7.031(5)(N) describe nutrient criteria requirements assigned to lakes (which include reservoirs) in Missouri, equal to or greater than 10 acres during normal pool conditions. The Department's Nutrient Criteria Implementation Plan (NCIP) may be reviewed at: https://dnr.mo.gov/env/wpp/rules/documents/nutrient-implementation-plan-final-072618.pdf Discharges of wastewater in to lakes or lake watersheds designated as L1 (drinking water use) are prohibited per 10 CSR 20-7.015(3)(C).

✓ Not applicable; this facility does not discharge in a lake watershed or the lake is less than 10 acres.

OIL/WATER SEPARATORS:
Oil water separator (OWS) tank systems are frequently found at industrial sites where process water and stormwater may contain oils and greases, oily wastewaters, or other immiscible liquids requiring separation. Food industry discharges typically require pretreatment prior to discharge to municipally owned treatment works. Per 10 CSR 26-2.010(2)(B), all oil water separator tanks must be operated according to manufacturer's specifications and authorized in NPDES permits per 10 CSR 26-2.010(2) or may be regulated as a petroleum tank.

✓ Not applicable; the facility has not disclosed the use of any oil water separators they wish to include under the NPDES permit at this facility and therefore oil water separator tanks are not authorized by this permit under the above regulations.

OPERATOR CERTIFICATION REQUIREMENTS:
Operators or supervisors of operations at regulated domestic wastewater treatment facilities shall be certified in accordance with 10 CSR 20-9 and any other applicable state law or regulation.

✓ Not applicable; this facility is not required to have a certified operator. This permit does not cover domestic wastewater or the domestic wastewater population equivalent (PE) is less than two hundred (200) individuals.

PERIODIC CLEANING PROCESSES:
The facility periodically undertakes equipment cleaning processes common to the industry to prevent corrosion and maintain equipment performance, as described below. If associated wastes are discharged, they will be consistent with state and federal regulations and any antidegradation analysis required by the Department pursuant to 10 CSR 20-7.031(3).

(a) Boiler Chemical Clean
A boiler chemical clean may be performed to remove water-side deposits that can damage tubes through heat transfer insulation or under-deposit corrosion mechanisms. In this process, chemicals are added to the boiler to remove deposits and return tube internal surfaces and the effective heat transfer properties to near original conditions. Waste solvents are neutralized prior to disposal. This is an industry-common maintenance practice that must be repeated approximately every five (5) years.

(b) Main Condenser Chemical Clean
A main condenser chemical clean is performed to remove cooling water-side deposits that can damage tubes through heat transfer insulation or under-deposit corrosion mechanisms. In this process, chemicals are added to the main condenser to remove deposits and return tube internal surfaces and the effective heat transfer properties to near original conditions. Waste solvents are neutralized prior to disposal. This is an industry-common maintenance practice that must be repeated approximately every seven (7) to ten (10) years.

(c) Main Condenser Mechanical Clean
The main condenser is cleaned to mechanically remove cooling water-side deposits which can damage tubes through heat transfer insulation or under-deposit corrosion mechanisms. In this process, brushes are propelled through tubes in the main condenser in an attempt to remove deposits and return tube internal surfaces and the effective heat transfer properties to near original conditions. There are no chemical waste solvents generated and the deposits removed may contain constituents originating from local water wells. Rinse water containing deposits is collected through plant drains then treated through the pond system prior to reaching Outfall #003. Historically, sampling has detected no measurable impact at Outfall #001 from this process. This is an industry-common maintenance practice that must be repeated every two (2) to three (3) years.

(d) Air Heater Wash
High pressure water is used to clean heat transfer surfaces inside air preheaters approximately every three (3) to five (5) years. There are no chemical waste solvents utilized or generated in this process.

PRETREATMENT:
This permit does not regulate pretreatment requirements for facilities discharging to an accepting permitted wastewater treatment facility. If applicable, the receiving entity (the publicly owned treatment works - POTW) is to ensure compliance with any effluent limitation guidelines for pretreatment listed in 40 CFR Subchapter N per 10 CSR 20-6.100. Pretreatment regulations per 644.016 RSMo are limitations on the introduction of pollutants or water contaminants into publicly owned treatment works or facilities.

✓ The facility sends scrubber wastewater to the municipal wastewater treatment facility. This requires the facility to hold a separate permit (or authorization) with the city for these wastewaters.

REASONABLE POTENTIAL (RP):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants which 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. Per 10 CSR 20-7.031(4), general criteria shall be applicable to all waters of the state at all times; however, acute toxicity criteria may be exceeded by permit in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit in mixing zones. If the permit writer determines any given pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for the pollutant per 40 CFR Part 122.44(d)(1)(iii) and the most stringent limits per 10 CSR 20-7.031(9)(A). Permit writers may use mathematical reasonable potential analysis (RPA) using the Technical Support Document for Water Quality Based Toxics Control (TSD) methods (EPA/505/2-90-001) as found in Section 3.3.2, or may also use reasonable potential determinations (RPD) as provided in Sections 3.1.2, 3.1.3, and 3.2 of the TSD.

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

#003 Parameter:	Units	CMC Acute	CCC Chronic	Listing	Daily Max	Monthly Average	n#	CV	n Max	MF	RWC Acute	RWC Chronic	RP
Arsenic	µg/L	340	150	AQL	221.77	143.59	31	0.325	25.5	1.48	37.49	35.32	No
Boron, TR	µg/L	n/a	2000	IRR	2716.99	1978.50	31	0.228	1330	1.32	1743.93	1643.16	No
Chloride + Sulfate	mg/L	1000	n/a	AQL	1007	n/a	31	0.125	914.8	1.17	1059.86	1056.37	Yes
Copper, TR	µg/L	17.92	11.67	AQL	18.04	10.96	10	0.384	2.67	2.09	5.55	5.23	No
Iron, TR	µg/L	n/a	1000	AQL	1597.13	916.86	31	0.439	848	1.68	1416.03	1339.13	Yes
Selenium, TR	µg/L	n/a	5	AQL	6.96	4.90	31	0.254	1.75	1.36	2.37	2.23	No
Zinc, TR	µg/L	149.95	148.73	AQL	150.99	73.67	31	0.628	88	2.04	178.35	168.04	Yes
TRC - warm	µg/L	19	11	AQL-Warm	16.6	10.5	10	0.348	100	1.96	194.58	183.33	Yes

Units are (µg/L) unless otherwise noted.
n/a Not Applicable
n number of samples; if the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent.
CV Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the mean of the same sample set.
CCC continuous chronic concentration
CMC continuous maximum concentration
RWC Receiving Water Concentration: concentration of a toxicant or the parameter in the receiving water after mixing (if applicable)
MF Multiplying Factor; 99% confidence level and 99% probability basis
RP Reasonable Potential: an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

✓ Applicable; the permit writer conducted an RPD on applicable parameters within the permit. See Part IV: Effluent Limits Determinations below.

✓ A mathematical RPA was not conducted on the stormwater for this facility. This permit establishes permit limits and benchmarks for stormwater. The Department has determined stormwater is not a continuous discharge and is therefore not necessarily dependent on mathematical RPAs. However, the permit writer completed an RPD, a reasonable potential determination, using best professional judgment for all of the appropriate parameters in this permit; see individual parameter discussion. An RPD consists of reviewing application data and/or discharge monitoring data for the last five years and comparing those data to narrative or numeric water quality criteria.

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 facility 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.

RENEWAL REQUIREMENTS:
The renewal special condition permit requirement is designed to guide the facility to prepare and include all relevant and applicable information in accordance with 10 CSR 20-6.010(7)(A)-(C), and if applicable, federal regulations. The special condition may not

include all requirements and requests for additional information may be made at the time of permit renewal under 644.051.13(5) RSMo and 40 CFR 122.21(h). Prior to submittal, the facility must review the entire submittal to confirm all required information and data is provided; it is the facility's responsibility to discern if additional information is required. Failure to fully disclosure applicable information with the application or application addendums may result in a permit revocation per 10 CSR 20-6.010(8)(A) and may result in the forfeiture of permit shield protection authorized in 644.051.16 RSMo.

SAMPLING FREQUENCY JUSTIFICATION:
Sampling and reporting frequency for several parameters were changed from the previous permit, but were generally retained for other parameters in the previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges, such as wastewater discharges, shall be permitted with daily maximum and monthly average limits. Minimum sampling frequency for all parameters is annually per 40 CFR 122.44(i)(2).

SAMPLING TYPE JUSTIFICATION:
Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, *E. coli*, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others. For further information on sampling and testing methods see 10 CSR 20-7.015(9)(D)2.

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 and 10 CSR 20-7.031(11) providing certain conditions are met. An SOC is not allowed:

- For effluent limitations based on technology-based standards established in accordance with federal requirements, if the deadline for compliance established in federal regulations has passed in accordance with 40 CFR 125.3.
- For a newly constructed facility in most cases per 644.029 RSMo. Newly constructed facilities must meet all applicable effluent limitations (technology and water quality) when discharge begins. New facilities are required to install the appropriate control technologies as specified in a permit or antidegradation review. A SOC is allowed for a new water quality based effluent limit not included in a previously public noticed permit or antidegradation review, which may occur if a regulation changes during construction.
- To develop a TMDL, UAA, or other study associated with development of a site specific criterion. A facility is not prohibited from conducting these activities, but a SOC may not be specifically granted for conducting these activities.

In order to provide guidance in developing SOCs, and to attain a greater level of consistency, the Department issued a policy on development of SOCs on October 25, 2012. The policy provides guidance to permit writers on standard time frames for schedules for common activities, and guidance on factors to modify the length of the schedule.

✓ Applicable, the Department is providing time for the facility to attain compliance with groundwater standards for the fly ash pond, bottom ash pond, and coal pile leachate into groundwater. See further discussion under CAFCom.

SPILLS, OVERFLOWS, AND OTHER UNAUTHORIZED DISCHARGE REPORTING:
Per 260.505 RSMo, 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

Any other spills, overflows, or unauthorized discharges reaching waters of the state must be reported to the regional office during normal business hours, or after normal business hours, to the Department's 24 hour Environmental Emergency Response spill line at 573-634-2436.

SLUDGE – INDUSTRIAL:
Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process or non-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 any material derived from industrial sludge. Industrial sludge could also be derived from lagoon dredging or other similar maintenance activities.

✓ Applicable; sludge is stored in the basin. Groundwater monitoring is required for this action.

STANDARD CONDITIONS:
The standard conditions Part I attached to this permit incorporate all sections of 10 CSR 20-6.010(8) and 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the facility to ascertain compliance with this permit, state regulations, state statues, federal regulations, and the Clean

Water Act. Standard Conditions Part III, if attached to this permit, incorporate requirements dealing with domestic wastewater, domestic sludge, and land application of domestic wastes.

STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:
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-only discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) §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), a benchmark, or a monitoring requirement as dictated by site specific conditions, the BMPs in place, the BMPs proposed, past performance of the facility, and the receiving water's current quality. When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.

✓ Not applicable; this facility does not have any stormwater-only outfalls.

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 §304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under §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*, (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf, 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. Additional information can be found in *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006; September 1992).

A SWPPP must be prepared by the facility 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 facility 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 which are reasonable and cost effective. The AA evaluation should include practices 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), §II.B.

If parameter-specific numeric benchmark exceedances continue to occur and the facility 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 facility 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, which includes an appropriate fee; the application is found at: https://dnr.mo.gov/forms/#WaterPollution

✓ Applicable; a SWPPP shall be developed and implemented for this facility; see specific requirements in the SPECIAL CONDITIONS section of the permit.

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, §A, No. 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 and incorporated within this permit. 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 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 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 facility is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive.

UNDERGROUND INJECTION CONTROL (UIC):

The UIC program for all classes of wells in the State of Missouri is administered by the Missouri Department of Natural Resources and approved by EPA pursuant to §§1422 and 1425 of the Safe Drinking Water Act (SDWA) and 40 CFR 147 Subpart AA. Injection wells are classified based on the liquids which are being injected. Class I wells are hazardous waste wells which are banned by 577.155 RSMo; Class II wells are established for oil and natural gas production; Class III wells are used to inject fluids to extract minerals; Class IV wells are also banned by Missouri in 577.155 RSMo; Class V wells are shallow injection wells; some examples are heat pump wells and groundwater remediation wells. Domestic wastewater being disposed of sub-surface is also considered a Class V well. In accordance with 40 CFR 144.82, construction, operation, maintenance, conversion, plugging, or closure of injection wells shall not cause movement of fluids containing any contaminant into Underground Sources of Drinking Water (USDW) if the presence of any contaminant may cause a violation of drinking water standards or groundwater standards under 10 CSR 20-7.031, or other health based standards, or may otherwise adversely affect human health. If the director finds the injection activity may endanger USDWs, the Department may require closure of the injection wells, or other actions listed in 40 CFR 144.12(c), (d), or (e). In accordance with 40 CFR 144.26, the facility shall submit a Class V Well Inventory Form for each active or new underground injection well drilled, or when the status of a well changes, to the Missouri Department of Natural Resources, Geological Survey Program, P.O. Box 250, Rolla, Missouri 65402. The Class V Well Inventory Form can be requested from the Geological Survey Program or can be found at the following web address: http://dnr.mo.gov/forms/780-1774-f.pdf Single family residential septic systems and non-residential septic systems used solely for sanitary waste and having the capacity to serve fewer than 20 persons a day are excluded from the UIC requirements (40 CFR 144.81(9)).

✓ Not applicable; the facility has not submitted materials indicating the facility will be performing UIC at this site.

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 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. Thermal variances are regulated separately and are found under 644.

✓ 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; definitions], the WLA is the maximum amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits

(TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A).

✓ Applicable; wasteload allocations for toxic parameters were calculated using water quality criteria or water quality model results and by applying the dilution equation below; WLAs are calculated using the *Technical Support Document For Water Quality-Based Toxics Control* or "TSD" EPA/505/2-90-001; 3/1991, §4.5.5.

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

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).
- Number of Samples "n": effluent quality is determined by the underlying distribution of daily values, 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 assumption 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 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 uses an assumed number of samples "n = 4".

WASTELOAD ALLOCATION (WLA) MODELING:

Facilities 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 STANDARD REVISION:

In accordance with 644.058 RSMo, the Department is required to utilize an evaluation of the environmental and economic impacts of modifications to water quality standards of twenty-five percent or more when making individual site-specific permit decisions.

✓ This operating permit contains a permit requirement for hardness-dependent metals for which water quality criteria has been modified by twenty-five percent or more since the issuance of the previous permit. The hardness calculation changed from the 25th percentile to the 50th percentile. The change of this requirement was necessary to ensure the criteria implemented in permits are reflective of the most current science available, while protecting the water quality of the receiving streams, and also without placing needless and overly burdensome requirements on regulated entities.

WHOLE EFFLUENT TOXICITY (WET) TEST:

A WET test is a quantifiable method to conclusively determine if discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, typically when mixed with receiving stream water. Under the CWA §101(a)(3), requiring WET testing is reasonably appropriate for Missouri State Operating Permits to quantify toxicity. WET testing is also required by 40 CFR 122.44(d)(1) when RP is found. WET testing ensures the provisions in 10 CSR 20-6 and Missouri's Water Quality Standards in 10 CSR 20-7 are being met; the acute WQS for WET is 0.3 TUa. Under 10 CSR 20-6.010(8)(A)4, the Department may require other terms and conditions it deems necessary to ensure compliance with the CWA and related regulations of the Missouri Clean Water Commission. Missouri Clean Water Law (MCWL) RSMo 644.051.3 requires the Department to set permit conditions complying with the MCWL and CWA. 644.051.4 RSMo specifically references toxicity as an item the Department must consider in permits (along with water quality-based effluent limits); and RSMo 644.051.5 is the basic authority to require testing conditions. Requirements found in the federal application requirements for POTWs (40 CFR 122.21(j)(5)) do not apply to industrial facilities, therefore WET testing can be implemented on a case by case basis following the factors outlined below. Annual testing is the minimum testing frequency if reasonable potential is found; monitoring requirements promulgated in 40 CFR 122.44(i)(2) state "requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once per year." To determine reasonable potential, factors considered are: 1) history of toxicity; 2) quantity and quality of substances (either limited or not) in the permit with aquatic life protections assigned; and 3) operational controls on toxic pollutants. See Part III under REASONABLE POTENTIAL for additional information. A facility does not have to be designated as a major facility to receive WET testing; and being a major facility does not automatically require WET testing. Additionally per 40 CFR 122.44(d)(1)(v), limits on whole effluent toxicity are not necessary where the permitting authority demonstrates in the fact sheet, using the procedures in 40 CFR 122.44(d)(1)(ii) of this section, that chemical-specific limits or specified operational controls are sufficient to attain and maintain applicable numeric and narrative water quality standards.

If WET limits are applied to this facility, follow up testing applies. When a facility exceeds the TU established in the permit, three additional follow-up tests are triggered. The follow up test results do not negate the initial testing result. If the facility is within the prescribed TU limit for all three follow up tests, then no further testing is required until the next regularly scheduled tests. If one or

more additional tests exceed the TU limit, the facility may consider beginning the Toxicity Identification Evaluation (TIE) and Toxicity Identification Reduction (TRE) processes instead of waiting for three consecutive TU exceedances. The TIE and TRE process can take up to two years, especially when toxicity is variable or transient. We urge facilities to work closely with their WET testing laboratory to follow nationwide guidance for determining causes of toxicity and curative activities to remove toxicity. Additional wastewater controls may be necessary; and while, generally, no Construction Permit (CP) is required for adding treatment at industrial facilities, the facility may check with the Engineering Section to determine a plan of action.

If WET testing failures are from a known toxic parameter, and the facility is working with the Department to alleviate that pollutant's toxicity in the discharge, please contact the Department prior to conducting follow-up WET testing. Under certain conditions, follow-up testing may be waived when the facility is already working to reduce and eliminate toxicity in the effluent.

- ✓ Applicable; WET testing is found in this permit. See additional information regarding the decision points for WET testing in Part IV of the fact sheet.

PART IV. EFFLUENT LIMIT DETERMINATIONS

OUTFALL #003 – COMBINED WASTEWATER AND STORMWATER

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	DAILY	MONTHLY	24 HR. TOT
TEMPERATURE #003	°F	90	*	SAME	ONCE/WEEK	MONTHLY	MEASURED
TEMP CHANGE ΔT |SM2-SM1|	°F	5	*	SAME	ONCE/WEEK	MONTHLY	CALCULATE
CONVENTIONAL							
CHLORINE, TOTAL RESIDUAL	µg/L	16.6 (ML)	10.5 (ML)	NEW	ONCE/MONTH	MONTHLY	GRAB
OIL & GREASE	mg/L	20	15	SAME	ONCE/MONTH	MONTHLY	GRAB
PH †	SU	6.5 TO 9.0	6.5 TO 9.0	SAME	ONCE/MONTH	MONTHLY	GRAB
TOTAL SUSPENDED SOLIDS (TSS)	mg/L	100	30	SAME	ONCE/MONTH	MONTHLY	GRAB
METALS							
BORON, TR	µg/L	*	*	SAME	ONCE/MONTH	MONTHLY	GRAB
IRON, TR	µg/L	1597	917	1679, 822	ONCE/MONTH	MONTHLY	GRAB
SELENIUM, TR	µg/L	7.0	4.5	SAME	ONCE/MONTH	MONTHLY	GRAB
ZINC, TR	µg/L	151	73.7	181, 81.8	ONCE/MONTH	MONTHLY	GRAB
NUTRIENTS							
AMMONIA AS N	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
KJELDAHL NITROGEN, TOTAL (TKN)	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
NITRATE PLUS NITRITE AS N	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
PHOSPHORUS, TOTAL P (TP)	mg/L	*	*	NEW	ONCE/MONTH	MONTHLY	GRAB
OTHER							
CHLORIDE	mg/L	*	*	SAME	ONCE/MONTH	MONTHLY	GRAB
SULFATE	mg/L	*	*	SAME	ONCE/MONTH	MONTHLY	GRAB
CHLORIDE PLUS SULFATE	mg/L	1000	1000	SAME	ONCE/MONTH	MONTHLY	GRAB
WET TEST - CHRONIC	TUc	*	-	ACUTE	ONCE/YEAR	ANNUALLY	GRAB

* monitoring and reporting requirement only
† report the minimum and maximum pH values; pH is not to be averaged
new parameter not established in previous state operating permit
interim parameter requirements prior to end of SOC
final parameter requirements at end of SOC
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 ensure compliance with permitted effluent limitations. If the facility is unable to obtain effluent flow, then it is the responsibility of the facility 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 monitoring continued from previous permit.

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 (90.0 °F). The permittee is to measure this parameter at SM2. The permittee will report this parameter with outfall #003. This parameter is allowed to receive mixing considerations. Because the facility can not determine mixing as there are no stream flow measurements, the permit writer has allowed the facility to sample at SM2 for this parameter.

The permit writer did not feel it necessary to perform a technology-based evaluation for thermal discharges at this facility as this facility uses cooling towers, an established best technology per the permit writer's best professional judgment. Weekly Monitoring continued.

Temperature Change (ΔT)
The change in temperature between the receiving stream and the effluent shall not be greater than five degrees Fahrenheit per 10 CSR 20-7.031(5)(D). An upstream monitoring point is necessary to calculate delta (Δ) T which is the change in stream temperature caused by the effluent. Maximum ΔT is 5.0 degrees Fahrenheit. The ΔT will be reported with the DMR for outfall #003. The downstream monitoring point was retained at ¼ mile downstream of the outfall. This is consistent with other permits for facilities discharging to smaller streams which do not measure stream volume. The facility has not installed (and does not plan to install) a stream flow measuring device. Weekly Monitoring continued.

CONVENTIONAL:

Chlorine, Total Residual (TRC)
Previous permit removed limits for TRC citing no RP. The permit writer has determined there is RP for this parameter at this time because the facility uses potable water in the processes, see flow diagram. City water is used in the demineralizer, which discharges to the process waste pond the out to waters of the state through outfall #003. Secondly, the facility, like most facilities, cannot detect the actual amount of chlorine in the wastewater. The facility must meet the new limits of 16.6 µg/L daily maximum and 10.5 µg/L monthly average. Because the detection limit is above the water quality standard, a minimum level (ML) is established for this parameter at 130 µg/L. The ML does not authorize the facility to discharge more than the effluent limits provided in this permit; only that the testing methodology is recognized as not able to measure below at those levels. There is no SOC for this parameter; the facility can meet the ML.
Acute AQL: 19 µg/L
Chronic AQL: 11 µg/L
Acute WLA: Ce = ((6.081 cfsDF + 0.042 cfsZID) * 19 – (0.042 cfsZID * 0 background)) / 6.081 cfsDF = 19.131
Chronic WLA: Ce = ((6.081 cfsDF + 0.4175 cfsMZ) * 11 – (0.418 cfsMZ * 0 background)) / 6.081 cfsDF = 11.755
LTAa: WLAa * LTAa multiplier = 19.131 * 0.483 = 9.234 [CV: 0.348, 99th %ile]
LTAc: WLAc * LTAc multiplier = 11.755 * 0.68 = 7.988 [CV: 0.348, 99th %ile]
use most protective LTA: 7.988
Daily Maximum: MDL = LTA * MDL multiplier = 7.988 * 2.072 = 16.6 µg/L [CV: 0.348, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 7.988 * 1.308 = 10.5 µg/L [CV: 0.348, 95th %ile, n=4]

Oil & Grease
The permittee is subject to the ELG at 40 CFR 423.12(b)(3) BPT for low volume wastes; 20 mg/L daily maximum, 15 mg/L monthly average, continued from previous permit. As this facility does not have reasonable potential to cause or contribute to in-stream water quality contamination, the ELG limits must be applied. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or xylene, but these constituents are often lost during testing due to their boiling points. The facility reported all non-detects. The permit writer completed an RPD on this parameter and found no RP due to the data submitted. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the facility to visually observe the discharge and receiving waters for sheen or bottom deposits. The limit this permit applies does not allow the facility to violate general criteria even if data provided are below the numeric limit.

pH
6.5 to 9.0 SU – instantaneous grab sample. Water quality limits [10 CSR 20-7.031(5)(E)] are applicable to this outfall. pH is a fundamental water quality indicator. Additionally, metals leachability and ammonia availability in wastewater is dependent on pH. Limitations in this permit will protect against aquatic organism toxicity, downstream water quality issues, human health hazard contact, and negative physical changes in accordance with the general criteria at 10 CSR 20-7.031(4) and the Clean Water Act's (CWA) goal of 100% fishable and swimmable rivers and streams.

Total Suspended Solids (TSS)
Technology limit of 100 mg/L daily maximum and 30 mg/L monthly average per 40 CFR 423.12(b)(3) for low volume waste sources. There are no numeric water quality limits established for this parameter in the Missouri regulations. However, visual changes to the receiving stream would be a violation of the general criteria in 10 CSR 20-7.031(4) for turbidity, unsightly color, scum, or harmful bottom deposits.

METALS:

Arsenic, Total
The aquatic life use (AQL) water quality standards for arsenic increased from 20 µg/L chronic standard, to a 340 µg/L acute standard, and 150 µg/L chronic standard. After review of the data submitted by the facility during the last permit term, this parameter no longer has reasonable potential at outfall #003; the maximum data point was 25.5 µg/L, well below the new AQL and historical HHP standard. The ELG limits for scrubber wastewater is not applied because the facility is not discharging scrubber sludge. Ditch #4 is not impaired for arsenic.

Boron, Total Recoverable
Previous permit requirements were monitoring only; this parameter does not have RP; but monitoring is continued as boron is a known contaminant from coal ash. Until the ash ponds are capped, this parameter will remain as a monitoring requirement.

Iron, Total Recoverable
New limits of 1597 µg/L daily maximum, 917 µg/L monthly average. Previous permit limits were 1679 µg/L daily maximum, 822 µg/L monthly average; the facility reported between 96.8 and 848 µg/L for this parameter; this parameter has RP; see fact sheet Part III, REASONABLE POTENTIAL. The facility is able to meet the new limits therefore no SOC is afforded. The facility's limitations for this parameter have been recalculated to less stringent limitations for the monthly average; see fact sheet Part III, ANTIBACKSLIDING for more information. Any number of processes may contribute to the iron in the wastewater at the site, including groundwater used in cooling towers, or from ash leachate. Ditch #4 is not impaired for iron.
Chronic AQL: 1000 µg/L
Chronic WLA: Ce = ((6.081 cfsDF + 0.4175 cfsMZ) * 1000 – (0.418 cfsMZ * 85.22 background)) / 6.081 cfsDF = 1062.81
LTAc: WLAc * LTAc multiplier = 1062.81 * 0.618 = 656.991 [CV: 0.439, 99th %ile]
Daily Maximum: MDL = LTA * MDL multiplier = 656.991 * 2.431 = 1597.1 µg/L [CV: 0.439, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 656.991 * 1.396 = 916.9 µg/L [CV: 0.439, 95th %ile, n=4]

Selenium, Total Recoverable
Previous permit limits were 7.0 µg/L daily maximum, 4.5 µg/L monthly average, continued. The facility reported between 0.474 and 1.75 µg/L for this parameter; this parameter does not have RP per RPA; see fact sheet Part III, REASONABLE POTENTIAL. However, selenium is a known contaminant of desulphurization wastewater, which at this time the facility is not utilizing, but has permission to discharge to the city. Technology limits are 23 µg/L daily maximum and 12 µg/L monthly average. Scrubber sludge routed to the bottom ash pond and sludge may remain exposed to wastewater and stormwater in this area. To assure compliance with SOx regulations, the facility may need to utilize the stack scrubber. Selenium limits will remain in the permit to ensure SOx wastewater is not being discharged to waters of the state, to ensure sludges are not being entrained in stormwater, and to comply with antibacksliding regulations. Additionally, the facility will likely be closing the ash ponds during this permit term, and the settling time will be reduced; when settling time is reduced, metals will be entrained in wastewater to a larger extent and reduction of treatment (time of retention) will be reduced. Maintaining this parameter will control for future planned changes at this facility. Ditch #4 is not impaired for selenium.

Zinc, Total Recoverable
New limits of 151 µg/L daily maximum, 73.7 µg/L monthly average. Previous permit limits were 181 µg/L daily maximum, 81.8 µg/L monthly average; the facility reported between 4.27 and 88 µg/L for this parameter; this parameter has RP; see fact sheet Part III, REASONABLE POTENTIAL. The facility is able to meet the new limits (only 1 value was reported above the derived monthly average over the last permit term) therefore no SOC is afforded. Zinc could be from the groundwater used in the cooling towers, from ash, or from the coal pile. Ditch #4 is not impaired for zinc.
Acute AQL: e^(0.8473 * ln130 + 0.884) * 0.98 = 146.652 µg/L [at hardness 130]
Chronic AQL: e^(0.8473* ln130 + 0.884) * 0.98 = 146.652 µg/L [at hardness 130]
TR Conversion: AQL/Translator = 146.652 / 0.978 = 149.95 [at hardness 130]
TR Conversion: AQL/Translator = 146.652 / 0.986 = 148.734 [at hardness 130]
Acute WLA: Ce = ((6.081 cfsDF + 0.042 cfsZID) * 149.95 – (0.042 cfsZID * 0 background)) / 6.081 cfsDF = 150.986
Chronic WLA: Ce = ((6.081 cfsDF + 0.4175 cfsMZ) * 148.734 – (0.418 cfsMZ * 0 background)) / 6.081 cfsDF = 158.946
LTAa: WLAa * LTAa multiplier = 150.986 * 0.309 = 46.623 [CV: 0.628, 99th %ile]
LTAc: WLAc * LTAc multiplier = 158.946 * 0.514 = 81.63 [CV: 0.628, 99th %ile]
use most protective LTA: 46.623
Daily Maximum: MDL = LTA * MDL multiplier = 46.623 * 3.238 = 151 µg/L [CV: 0.628, 99th %ile]
Monthly Average: AML = LTA * AML multiplier = 46.623 * 1.58 = 73.7 µg/L [CV: 0.628, 95th %ile, n=4]

NUTRIENTS:

Ammonia, Total as Nitrogen
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. The facility reported non-detect in the application, but because other forms of nitrogen are present, the facility is required to monitor this parameter so the Department may determine total nitrogen using all the nitrogenous data.

Kjeldahl Nitrogen, Total (TKN)
Nitrogen is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. The facility did not monitor for this parameter for the renewal application, but because other forms of nitrogen are present, the facility is required to monitor this parameter so the Department may determine total nitrogen using all the nitrogenous data.

Nitrate plus Nitrite
Monthly monitoring required based on 10 CSR 20-7.015(9)(D)8.B.

Phosphorus, Total P (TP)
Phosphorus is expected to be present in this discharge therefore monthly monitoring is required per 10 CSR 20-7.015(9)(D)8.B. The facility reported 0.583 mg/L in the application.

OTHER:

Chloride
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate. The most likely source of chloride is from the FGD sludge and cooling tower chemicals.

Sulfate
Monitoring required to determine chloride plus sulfate below. The facility shall sample and independently report the analytical value of sulfate. Sulfate in the discharge is likely from coal pile runoff and coal ash.

Chloride Plus Sulfate
The previous permit implemented a schedule of compliance for 1000 mg/L for this parameter. The schedule has completed and the limit is continued. This limit does not receive mixing at this time. The WQS contained in 10 CSR 20-7.031(5)(L) are applicable to all streams where natural background concentrations cannot be determined. The facility reported from 484.4 to 914.8 mg/L during the last permit term. The facility has RP for this parameter.

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. This permit changes the test from acute to chronic because the receiving stream supports life year-round and the discharge from the facility is a constant discharge. The Department should have made the test Chronic from the initial implementation of WET testing, for this type of industrial site. Acute toxicity testing does not always measure the full effects of the effluent on the receiving stream for more than 48 hours. A chronic test is representative of the actual conditions of the site, and a better representation of the chronic aquatic life protection standards which are measured on a 4-day scale. The facility has several pollutants identified and limited in the effluent as chronically toxic to aquatic organisms: total residual chlorine, oil and grease, iron, selenium, and zinc have chronic aquatic life protection water quality standards. Because the discharge flow is constant (>4 days), chronic water quality standards must be met, this includes WET testing evaluations. Realizing that the facility has shown no toxicity utilizing the acute method in the past, this permit did not include limits for the chronic test because RP has not been demonstrated. It is the responsibility of the Department to evaluate all chronic and acute WQS, including WET, and apply those WQS to the facility equally.

The standard Allowable Effluent Concentration (AEC) for facilities without mixing considerations is 100%. The standard dilution series for facilities discharging to waterbodies with no mixing considerations is 100%, 50%, 25%, 12.5%, & 6.25% as 10 CSR 20-7.015((9)(L)4.A. states the dilution series must be proportional.

IN-STREAM MONITORING: #SM1 AND SM2

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG.	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
TEMP – UPSTREAM AT #SM1	°F	*	*	SAME	ONCE/WEEK	MONTHLY	MEASURED
TEMP – DOWNSTREAM AT #SM2	°F	*	*	SAME	ONCE/WEEK	MONTHLY	MEASURED
CONVENTIONAL							
HARDNESS	mg/L	*	*	NEW	ONCE/YEAR	ANNUAL	GRAB
METALS							
IRON, TR, DISS	µg/L	*	*	NEW	ONCE/YEAR	ANNUAL	GRAB
MANGANESE, TR, DISS	µg/L	*	*	NEW	ONCE/YEAR	ANNUAL	GRAB

* monitoring and reporting requirement only
† report the minimum and maximum pH values; pH is not to be averaged
TR total recoverable
Diss dissolved fraction

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Temperature
In-stream temperature sampling is required to determine compliance with Missouri's WQS for temperature at 10 CSR 20-7.031(5)(D). Weekly Monitoring continued.

CONVENTIONAL:

Hardness
Monitoring for hardness upstream and downstream is important to determine the in-stream changes the facility may be causing. Annual monitoring is sufficient at this time to gather information. Because the facility is altering the wastewater composition in the future by ceasing ash transport water discharge, the data can be used to compare before and after as well. Site specific hardness is used to determine limits for metals which are hardness dependent, instead of utilizing the ecoregion's standard value.

METALS:

Iron, Total Recoverable and Dissolved
Monitoring for iron upstream and downstream is important to determine the in-stream changes the facility may be causing. Annual monitoring is sufficient at this time to gather information. Because the facility is altering the wastewater composition in the future by ceasing ash transport water discharge, the data can be used to compare before and after as well. While this parameter sampling is not required by regulation, the Department has asked the facility to sample in-stream for the benefit of data collection for determining future permit limits.

Manganese, Total Recoverable and Dissolved
Monitoring for manganese upstream and downstream is important to determine the in-stream changes the facility may be causing. Annual monitoring is sufficient at this time to gather information. Because the facility is altering the wastewater composition in the future by ceasing ash transport water discharge, the data can be used to compare before and after as well. While this parameter sampling is not required by regulation, the Department has asked the facility to sample in-stream for the benefit of data collection for determining future permit limits.

PERMITTED FEATURE #CT1 – COOLING TOWER BLOWDOWN

EFFLUENT LIMITATIONS TABLE:

PARAMETERS	UNIT	DAILY MAX	MONTHLY AVG	PREVIOUS PERMIT LIMITS	MINIMUM SAMPLING FREQUENCY	MINIMUM REPORTING FREQUENCY	SAMPLE TYPE
PHYSICAL							
FLOW	MGD	*	*	SAME	ONCE/MONTH	ONCE/MONTH	24 HR. TOT
CONVENTIONAL							
CHLORINE, FREE AVAILABLE	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	▲	-	SAME	ONCE/YEAR	ONCE/YEAR	GRAB

* Monitoring requirement only
TR total recoverable
▲ See 126 Priority Pollutants below

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 ensure compliance with permitted effluent limitations. If the facility is unable to obtain effluent flow, then it is the responsibility of the facility 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 monitoring continued from previous permit.

CONVENTIONAL:

Chlorine, Free Available
Required per ELG at the cooling tower blowdown: 0.5 mg/L daily maximum, 0.2 mg/L monthly average. Permit limitations will be in µg/L to coincide with other parameters as 500 µg/L daily maximum, 200 µg/L monthly average. Monthly monitoring continued.

METALS:

Chromium, Total Recoverable
Limitations for total recoverable zinc are 200 µg/L daily maximum and monthly average found at 40 CFR 423; annual sampling; continued from previous permit.

Zinc, Total Recoverable
Limitations for total recoverable zinc are 1000 µg/L daily maximum and monthly average found at 40 CFR 423; annual sampling; continued from previous permit.

OTHER:

126 Priority Pollutants
This permit continues the requirement of 40 CFR 423.13(d)(1) for the facility either testing or certifying the absence of the 126 priority pollutants listed in Appendix A of 40 CFR 423. Because this discharge is not directly to waters of the state, reasonable potential was not assessed at the cooling towers, but was assessed at the outfall to waters of the state, at #003. During the last permit term, the permit writer believed it was required to submit each data point directly into the database to meet the electronic rule reporting requirements. However, new information showed this is not required, and the facility may upload a document into the eDMR system. The Department also has learned the eDMR system has a time limit, and individuals were having trouble entering the data into the system before they were kicked out.

PART V. 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:
Permits are normally issued on a five-year term, but to achieve watershed synchronization some permits will need to be issued for less than the full five years as allowed by regulation. The intent is 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 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 two years old, such 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 industrial permit is not to be being synchronized.

PUBLIC NOTICE:
The Department shall give public notice a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with 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 facility must be notified of the denial in writing. http://dnr.mo.gov/env/wpp/permits/pn/index.html The Department must issue public notice of a pending operating 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 wishing to submit comments regarding this proposed operating permit, 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. All comments must be in written form.

✓ The Public Notice period for this operating permit started April 29, 2022 and ended May 30, 2022.

✓ One comment letter was received from Great Rivers Environmental Law Clinic.

Appendix A: Comment Letter
Appendix B: Comment Response Letter

DATE OF FACT SHEET: JANUARY 13, 2023

COMPLETED BY:
PAM HACKLER, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
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Appendix A:
Comment Letter

May 30, 2022

VIA ELECTRONIC MAIL

Missouri Department of Natural Resources
Water Protection Program
1101 Riverside Drive
P.O. Box 176
Jefferson City, Missouri 65102
publicnoticenpdes@dnr.mo.gov

Re: Comments on Sikeston Power Plant Draft NPDES Permit – MO-0095575

Dear Sir or Madam:

The following comments are submitted by Great Rivers Environmental Law Center ("Great Rivers") and Sierra Club concerning the reissuance of the Draft Missouri State Operating Permit No. MO-0095575 ("Draft Permit") to Sikeston Power Station (the "Facility"). Sierra Club and Great Rivers respectfully request that the Missouri Department of Natural Resources ("DNR") revise the Draft Permit to include the following corrections before issuing it in its final form.

The Sierra Club seeks to amplify the power of its 3.8 million members and supporters to defend all citizens' right to a healthy world. The Sierra Club's purpose is to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. The Sierra Club diligently works to explore the integration of social justice and environmental concerns. It seeks to provide an effective framework for addressing the damage, risk and discrimination facing many communities today. Members of the Sierra Club are residents of the communities near the Facility, recreate near the Facility, and are adversely affected by the water emissions from the Facility.

Great Rivers is a nonprofit public interest environmental organization providing free and reduced-fee legal services to individuals, organizations, and citizen groups who are working to protect the environment and public health. Great Rivers has dedicated much time and effort since 2012 to investigating and attempting to alleviate the negative impacts imposed on Missouri residents and workers from the pollution caused by business located in and near minority or low-

income communities. As part of that mission, Great Rivers is committed to monitoring permitting actions for sites proposed for development that will unfairly burden such populations. Through this work, Great Rivers has asserted environmental justice claims against the DNR and local health departments.

The proposed Draft Permit would likely increase the amount of pollutants entering Ditch #4 and area groundwater aquifers, thus contributing to the impairment of water quality and the environment, and potentially harming the health of nearby residents. The Draft Permit also does not impose stringent enough monitoring requirements on the Facility; the lenient monitoring requirements mean that DNR and the Facility will not fully know the impact of the Facility's pollution discharges on Ditch #4 or the groundwater aquifer. This is especially significant in light of the fact that eight wells supply the Sikeston area with drinking water, the Facility's ash ponds are located as little as 350 feet away from residential areas, and are surrounded by agricultural land.[1] Great Rivers and Sierra Club urge DNR to edit the Draft Permit to address the comments set out in this letter, as the Draft Permit as currently written is contrary to the intent of the Clean Water Act, would contribute to the continued degradation of Missouri's waterways, and has the potential to harm the health of nearby residents, many of whom are low-income minorities that shoulder a disproportionate share of the area's environmental pollution.

DNR Should Establish Effluent Limits and Require Monitoring and Reporting for Arsenic

Sierra club and Great Rivers are concerned that the Draft Permit no longer contains effluent limits or requires monitoring and reporting for arsenic at the Facility. During the last permit cycle, the Facility repeatedly violated effluent limitations for arsenic, leading EPA to identify a significant/category I violation.[2] Although the aquatic life water quality standards for arsenic have been loosened during the previous permit cycle, this does not negate DNR's responsibility to include effluent limits for arsenic. DNR should still set effluent limitations and require monitoring and reporting for arsenic, especially considering the recent closure of the imminent closure of the coal ash pond at the Facility. As DNR states in the Draft Permit, closure of a coal ash pond reduces the settling time for metals in wastewater, and "when settling time is reduced, metals will be entrained in wastewater to a larger extent and reduction of treatment (time of retention) will be reduced." While DNR was referring to selenium in the above quote, the same logic applies to arsenic, which is also a metalloid and can leach into ground and surface waters from coal ash waste.[3] Because the closure of the ash pond will likely increase arsenic levels in wastewater released from the Facility, and because the Facility has shown an inability to

[1] Sikeston, Missouri Utilities, located at https://www.sikeston.org/departments/economic_development/utilities.php; Draft Permit.
[2] *See* U.S. EPA, *Effluent Charts*, https://echo.epa.gov/effluent-charts#MO0095575 (last visited May 29, 2022).
[3] *See* U.S. EPA, *Coal Ash Basics*, https://www.epa.gov/coalash/coal-ash-basics#:~:text=Coal%20ash%20contains%20contaminants%20like,drinking%20water%2C%20and%20the%20air. (last visited May 29, 2022).

limit arsenic pollution in the past, DNR should establish effluent limits and continue to require frequent monitoring and reporting for arsenic in the Draft Permit.

When setting the effluent limits for arsenic, DNR should take into account the effluent limitations contained in 40 CFR 423. Although the Draft Permit fact sheet references the 11 µg/L daily maximum and 8 µg/L monthly average for arsenic, these recommendations are not reflected in the requirements for Outfall #3 in the Draft Permit itself. Even though the aquatic life water quality standards for arsenic have recently increased, DNR should not ignore the federal requirements contained in 40 CFR 423. Additionally, aquatic life is not the only designated use for Ditch #4. For instance, Ditch #4 is also designated for human health protection, a use that comes with far stricter federal recommended criteria for arsenic.[4] By focusing solely on the aquatic life standards and ignoring other uses as well as the effluent limits in 40 CFR 423, DNR is in danger of violating the anti-backsliding provisions of the Clean Water Act. Section 402(o) of the Clean Water Act clearly prohibits the imposition of effluent limitations that are less stringent than those contained in the prior permit.[5] If DNR proceeds with the Draft Permit in current form, it risks potential violations of the federal Clean Water Act.

DNR Cannot Backslide on Iron Effluent Limits

In the Draft Permit, DNR proposes to loosen the monthly average limits for iron from 822 µg/L in the previous permit to 917 µg/L in the new draft. Under Section 402(o) of the federal Clean Water Act, DNR cannot issue a permit with less stringent limits unless such an action would fit one of the exceptions provided in the statute. In the Draft Permit, DNR justifies this change "because the data variability are low…"[6] Data variability is not one of the exceptions enumerated in Section 402(o)(2) of the Clean Water Act and is therefore not a valid justification for loosening the monthly average effluent limit. DNR should rectify this error and come into compliance with the Clean Water Act by establishing a monthly average effluent limit for iron that is at least as stringent as the 822 µg/L limit contained in the previous permit.

DNR Should Establish Effluent Limitations for Boron

Wastewater from coal ash ponds at the Facility discharge to Outfall #3.[7] Analysis from groundwater monitoring reports for the Facility shows groundwater in the vicinity of the plant moves in a west southwesterly direction – away from the ash ponds and towards Ditch #4.[8] As a

[4] *See* Draft Permit p. 5 (listing HHP as designated use); *See* U.S. EPA, *National Recommended Water Quality Criteria – Human Health Criteria Table*, https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table (last visited May 30, 2022).
[5] 33 U.S.C. § 1342(o) (2019).
[6] Draft Permit at p.7.
[7] Draft Permit.
[8] *See,* Sikeston Power CCR Rule compliance data, located at http://www.sikestonpower.com/ (last visited May 30, 2022).

result, the coal ash ponds at the Facility represent a direct risk to the Ditch. Consistent with this expectation, sampling results from the most recent CCR groundwater monitoring report for the Facility show repeated exceedances of boron at the plant.[9] Boron is a known contaminant from coal ash, and a primary leaching parameter in ash.[10] 40 CFR 257 assesses boron in the detection monitoring constituents for coal ash ponds pursuant to Appendix III to Part 257. But the Draft Permit proposes no effluent limit for boron. This makes no sense in light of the repeated exceedances, the likelihood that groundwater flows directly from the ash ponds to Ditch #4, as well as the impending closure of coal ash ponds, which increases the risk of contaminants concentrating in wastewater, as outlined in more detail above.

DNR Should Require More Frequent Groundwater Monitoring

Sampling results from the Facility's most recent CCR groundwater monitoring report also show exceedances of sulfate, calcium, total dissolved solids, fluoride, and chloride standards, as well as pH, from the Facility's coal ash ponds. The Draft Permit proposes to allow the Facility to monitor these ash ponds only twice per year. Allowing such infrequent monitoring, in light of the history of excess groundwater emissions from the Facility, is dangerous and not protective of public health. DNR should mandate monthly, or at least quarterly, groundwater monitoring at the Facility.

DNR Should Require More Frequent Monitoring and Reporting at Outfall #003

Although the permit requires monthly monitoring and reporting for most pollutants, there are still several, including whole effluent toxicity, chromium, and zinc, that are monitored and reported annually. DNR should require monthly monitoring and reporting of all pollutants so that the Department and the public have the current information necessary to police activity at the Facility. Annual reporting significantly hampers the ability of the public to enforce the Facility's permit obligations through citizen suits. The Clean Water Act allows citizens to act as "private attorneys general" to ensure compliance with the law. As Congress has noted "[c]itizen suits are a proven enforcement tool. They operate as Congress intended-to both spur and supplement…government enforcement actions. They have deterred violators and achieved significant compliance gains."[11] Citizen suits are especially important when regulators do not have the time and funding necessary to effectively police all potential permit violators. Because the Clean Water Act requires citizen suit plaintiffs to show that violations are ongoing, rather than "wholly past,"[12] it is essential that such plaintiffs have the most up-to-date information possible. DNR should facilitate citizen oversight by requiring monthly–or at the very least, quarterly–monitoring and reporting for all pollutants.

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[9] *Id*. *See also,* Ashtracker, located at https://ashtracker.org/index/facility#MO (last visited May 30, 2022).
[10] Draft Permit.
[11] S. Rep. No. 99-50, at 28 (1985).
[12] *See Gwaltney of Smithfield, LTD v. Chesapeake Bay Found.*, 484 U.S. 49 (1987).

DNR Should Impose More Stringent Emission Limitations and Monitoring Requirements to Protect Vulnerable Communities

The Facility is an electric generating station located in Scott County, Missouri, on the northwest side of Sikeston. Its boiler burns coal or a blend of coal and petroleum coke. The Facility also stores and conveys limestone; stores, crushes, and conveys coal; utilizes several large petroleum storage tanks; and operates an emergency fire pump and an emergency diesel generator. Although coal plants are commonly thought of major air polluters, they can also have devastating impacts on water supplies.[13] "[P]ower plants discharge large wastewater volumes, containing vast quantities of pollutants, into waters of the United States. The pollutants include both toxic and bioaccumulative pollutants such as arsenic, mercury, selenium, chromium, and cadmium. Today, these discharges account for about 30 percent of all toxic pollutants discharged into surface waters by all industrial categories regulated under the CWA.[14] Coal plants frequently pollute waterways, drinking water, and fishing and swimming areas with the heavy metals chromium, molybdenum, nickel, selenium, mercury, arsenic, cadmium, thallium, lead, arsenic and boron.[15] Consistent with this analysis, the Facility discharges chlorine, boron, iron, selenium, zinc, ammonia, nitrate, nitrite, phosphorous, chloride, sulfate, chromium, arsenic, copper, mercury, and manganese, among others.[16]

Exposure to the substances discharged by the Facility, via absorption through the skin or through ingestion of contaminated drinking water, is associated with a variety of negative health effects. Consuming water or fish contaminated with these substances can lead to cancer, cardiovascular disease, neurological disorders, kidney and liver damage, and lower IQs in children.[17] Moreover, exposure to heavy metals in particular through multiple pathways can lead to birth defects, cancer, and death among other effects.[18] Heavy metals can also get into the food chain, traveling from the water to fish, predators, and humans who eat the fish. These heavy metals then accumulate in the body, causing further harm.[19] Additionally, arsenic causes an

[13] U.S. EPA, *Fact Sheet: Final Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Industry*, located at https://www.epa.gov/sites/default/files/2015-10/documents/steam-electric-final-rule-factsheet_10-01-2015.pdf (last visited May 30, 2022) (hereinafter, "Steam Electric Fact Sheet"). *See also* Union of Concerned Scientists, *Coal and Water Pollution*, located at https://www.ucsusa.org/resources/coal-and-water-pollution (last visited May 26, 2022).
[14] Steam Electric Fact Sheet.
[15] Sierra Club, *Water & Food Supply*, located at https://coal.sierraclub.org/the-problem/water-food-supply (last visited May 26, 2022); Natural Resources Defense Council, *Dirty Coal is Hazardous to Your Health: Moving Beyond Coal-Based Energy*, located at https://www.nrdc.org/sites/default/files/coalhealth.pdf (last visited May 26, 2022).
[16] Draft Permit.
[17] Steam Electric Fact Sheet.
[18] Sierra Club, *Water & Food Supply*, located at https://coal.sierraclub.org/the-problem/water-food-supply (last visited May 26, 2022).
[19] Earthjustice, *Cleaning Up Power Plant Water Pollution*, located at https://earthjustice.org/cases/2014/cleaning-up-power-plant-water-pollution (last visited May 26, 2022).

increased risk of multiple cancers including kidney and prostate cancer, as well as liver disease, anemia, and gangrene.[20]

In infants, boron has been known to cause erythema in the diaper area, mild congestion or a pus-like discharge in the eye, vomiting, signs of irritability, diarrhea, and even convulsive seizures.[21] In adults, it has been known to cause vomiting, ulcers in the throat, nausea, and diarrhea.[22] The EPA has determined that exposure to boron in drinking water above a level of 4 mg/L for one day or 0.9 mg/L for ten days can cause adverse effects to a child and that a lifetime exposure to 1 mg/L of boron also can cause adverse effects.[23] Despite these recommended levels for boron, the Facility's draft NPDES permit allows the Facility up to ten years to attain compliance with a groundwater limit of 2 mg/L for boron releases from its coal ash ponds.[24] As a result, it is likely that the Facility will release more boron than EPA itself admits is safe until closure is finalized. It has been reported that as levels of boron in drinking water increase, there is an increased risk of effects on the testes of young males; and there is also an increased risk of effects on human fetuses and adult male testes.[25] This is in addition to the other common symptoms of boron poisoning which include vomiting, diarrhea, abdominal pain, lethargy, lightheadedness, rash, and headache.[26] These are risks DNR will force the area community to assume unless it takes stricter action against the Facility in the Draft Permit.

The Facility's draft NPDES permit also mandates that the facility must attain compliance with a groundwater limit of 0.05 mg/L of selenium, the same as EPA's maximum contaminant level (MCL) for selenium.[27] But again, because the Draft Permit allows the Facility up to ten years to come into compliance with that standard, the Facility will be able to release more than 0.05 mg/L of selenium until that point. The EPA has found that when people are exposed to levels of selenium above the MCL even for short periods of time, they can experience changes to their hair and fingernails, damage to their peripheral nervous system, irritability, and fatigue.[28] A lifetime of exposure to selenium to MCL can cause hair and fingernail loss and damage to kidney

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[20] Natural Resources Defense Council, *Dirty Coal is Hazardous to Your Health: Moving Beyond Coal-Based Energy*, located at https://www.nrdc.org/sites/default/files/coalhealth.pdf (last visited May 26, 2022).
[21] EPA, *Summary Document from the Health Advisory for Boron and Compounds*, located at https://www.epa.gov/sites/default/files/2014-09/documents/summary_document_from_the_ha_for_boron.pdf (last visited May 26, 2022).
[22] *Id.*
[23] *Id.*
[24] Draft NPDES permit, pg. 6.
[25] *See* note 13.
[26] EPA, *Health Effects Support Document for Boron, January 2008*, located at https://www.epa.gov/sites/default/files/2014-09/documents/health_effects_support_document_for_boron.pdf (last visited May 27, 2022).
[27] Draft Permit at p. 6; 40 CFR 141 Part C.
[28] EPA, *US EPA Archived Document: Consumer Factsheet on Selenium*, located at https://archive.epa.gov/water/archive/web/pdf/archived-consumer-fact-sheet-on-selenium.pdf (last visited May 26, 2022).

and liver tissue and the nervous and circulatory systems.[29] Studies have also shown that chronic exposure to selenium in water has led to excessive tooth decay, lack of mental alertness, and listlessness.[30] Additionally, although information is not available as to the reproductive effects of selenium in humans, it has been shown that high levels of selenium in the diets of pigs, sheep, and cattle interferes with normal fetal development and leads to fetal malformations.[31] Again, these are health risks DNR is asking the area community to assume by allowing the Facility extra time to comply with applicable drinking water standards.

Finally, power plant pollution raises municipal water bills. This happens when water treatment plants must do additional work and spend additional money to make sure that people are receiving water that is safe to drink.[32] As a result, insufficient pollution restrictions in the Draft Permit has the potential to impact the budgets of adjacent residents, many of whom are already in a lower socioeconomic bracket.

The Community That Will Be Impacted by the Facility and the Draft Permit Constitutes an Environmental Justice Community Under EPA Title VI Civil Rights Regulations and Policy.

The Facility is located on the outskirts of Sikeston, just northwest of the city.[33] Sikeston has a total population of 16,023, and minority residents make up just over 30% of that population.[34] In contrast, 57% of the residents living within a mile of the Facility are racial or ethnic minorities, which is significantly higher than the 20% average for the State of Missouri.[35] Furthermore, the residents living within a mile of the Facility are also economically depressed: 44% of the population is considered to be low-income, which is significantly greater than the state average of 33%.[36]

More than one-quarter of the population living within a mile of the Facility are 17 years of age or younger, and 10% of this population is 4 years of age or younger.[37] No less than 3 early childhood schools, 5 elementary schools, 4 middle schools, and 2 high schools are located within

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[29] *Id.*
[30] EPA, *Selenium Compounds*, located at https://www.epa.gov/sites/default/files/2016-09/documents/selenium-compounds.pdf (last visited May 26, 2022).
[31] *Id.*
[32] Steam Energy Fact Sheet.
[33] See Google Maps.
[34] See, U.S. Census Bureau, Quick Facts: Sikeston city, Missouri, located at https://www.census.gov/quickfacts/fact/table/sikestoncitymissouri,US/PST045219 (last visited December 15, 2021).
[35] See U.S. EPA, EJScreen Report (Version 2020), EJScreen ACS Summary Report 2014-2018, EJScreen Census 2010 Summary Report, all for a radius drawn one mile from the Facility, copies attached hereto as Exhibit A.
[36] *Id.*
[37] *Id.*

three miles of the Facility.[38] These 9 schools have a total enrollment of 3,747.[39] Daycare centers are also present in the area.[40] Simply put, any environmental effects from the Facility will have a significant impact on a large population of children. The schools within the area have a significant percentage of minority students: 46% of the students enrolled in schools within this three-mile radius of the Facility are minority.[41] Because the residents living and attending school close to the Facility are made up of a significant minority population, the area qualifies as an Environmental Justice community as that term is used in Title VI, and in EPA Title VI Civil Rights regulations and policy.

The DNR's Failure to Ensure Meaningful Involvement of Minority, Low- Income and Limited English Proficient Communities in the Permitting Process, and to Provide a Grievance Procedure for Environmental Justice Complaints Violates EPA Regulations Promulgated Under Title VI of the Civil Rights Act of 1964

As a condition of receiving funding under EPA's continuing environmental program grants, recipient agencies must comply with EPA's Title VI regulations, which are incorporated by reference into the grants. These regulations preclude discrimination on the basis of race, color or national origin by any program or agency receiving financial assistance from the EPA.[42] In other words, Title VI creates for recipients a nondiscrimination obligation that is contractual in nature, in exchange for accepting Federal funding. Acceptance of EPA funding creates an obligation on the recipient to comply with the regulations for as long as that funding remains in place.[43] The regulations define a "[r]recipient" as "any state or its political subdivision, any instrumentality of a state or its political subdivision, any public or private agency, institution, organization, or other entity, or any person to which Federal financial assistance is extended directly or through another recipient…."[44] The DNR is a recipient of financial assistance from EPA, and accordingly, is governed by these requirements.[45]

In particular, a state agency accepting EPA funding may not issue permits that are intentionally discriminatory or have a discriminatory effect based on race, color, or national origin.[46] The EPA has explained that an important way for a recipient agency to accomplish this

[38] See Chart of Area Schools, attached hereto as Exhibit B.
[39] *Id.*
[40] See Google Maps.
[41] Exhibit B.
[42] 40 C.F.R. § 7.30.
[43] U.S. Environmental Protection Agency, Title VI Public Involvement Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs, 71 Fed. Reg. 14207, 14209 (Mar. 21, 2006) ("Final Recipient Guidance").
[44] 40 C.F.R. § 7.25.
[45] The Governor's 2019 Recommended Budget states that MDNR's WPP received $42,232,808 of its $713,294,673 operating expenses in 2019 from federal funds, including federal grants. See Page 76, https://oa.mo.gov/sites/default/files/FY_2019_Natural_Resources_Gov_Rec.pdf (last visited May 30, 2022).
[46] Final Recipient Guidance at p. 14209.

goal is to ensure that impacted communities are allowed substantial involvement in the agency's decision-making process, particularly throughout the permitting decision-making process.[47] In addition, each recipient of EPA funding must designate a Title VI compliance coordinator, shall "adopt grievance procedures that assure the prompt and fair resolution of complaints," and shall conspicuously post notice of nondiscrimination, in languages other than English where appropriate.[48] The DNR has failed to adopt any kind of Title VI program in compliance with these requirements, and accordingly, is operating in violation of EPA regulations and Title VI. These violations are of even greater significance in the face of a proposed DNR decision to permit a facility such as the Sikeston Power Station, which has a significant environmental impact on minority and low-income communities.

The DNR has failed to ensure meaningful public involvement in the National Pollution Discharge Elimination System (NPDES) permit decision making process in direct violation of Title VI.[49] This is especially true with respect to those minority and low-income communities that are most impacted by water pollution from the permits, such as the neighborhoods impacted by the Facility. The issuance of a generic online public notice to persons who have signed up for a listserv is not sufficient to meet this need because minority and low-income communities are the least likely groups to be able to effectively navigate and comment on public notices for draft permits. For example, persons with limited financial or technical resources may be in need of additional assistance in order to be able to review the proposed permit, ascertain its impact on their neighborhoods, or to be heard in response thereto. Many residents living near the Facility fall within this category, but no such efforts appear to have been undertaken by the DNR or the Facility to make such provisions.

To this end, the DNR should create a position for an Environmental Justice liaison to operate across all DNR programs that receive federal funding to engage and inform minority and low-income communities whenever the DNR conducts permitting and siting decisions that might have disproportionate impacts on such communities. The DNR should proactively facilitate informational meetings for minority and low-income communities when water permitting decisions are proposed such as the one relating to the Facility's NPDES permit that might impact such communities. The DNR should provide public information about the proposed permit and the facility in languages other than English and should offer translators and interpreters at public meetings. Such procedures could be modeled after those employed by other states such as Illinois, or the EPA's Final Recipient Guidance.[50] Without these types of components, the DNR's Water Protection Program ("WPP") remains in violation of Title VI regulations.

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[47] *Id.* at p. 14211.
[48] 40 C.F.R. §§ 7.85 -7.95.
[49] Final Recipient Guidance at pp. 14213-14. See also, United States Environmental Protection Agency, Office of Environmental Justice, Model Plan for Public Participation, EPA-300-K-96-003 (Feb. 2000).
[50] *Id.* See also, http://www.epa.illinois.gov/topics/environmental-justice/ej-policy/index

The DNR also lacks a proper grievance procedure for environmental justice complaints as required by law. EPA's Title VI implementing regulations state that each recipient of EPA funding shall "adopt grievance procedures that assure the prompt and fair resolution of complaints which allege violation of this part."[51] The DNR has adopted no such procedures and is therefore in violation of this regulation. To remedy this violation of EPA regulations, the DNR should develop a complaint procedure whereby members of minority and low-income communities are provided a vehicle to address potential environmental justice and civil rights issues in the DNR's air permitting process.

The DNR's Failure to Consider Disparate Impacts to Minority and Low-Income Communities in Issuing the Sikeston Power Station Draft Operating Permit Violates Title VI of the Civil Rights Act of 1964 and EPA Regulations and Guidance Promulgated Thereunder

The Draft Permit is evidence that the DNR's permitting program causes a disparate impact on minority and low-income communities, in the form of concentrated pollutant discharges from a variety of permitted sources as well as cumulative and synergistic impacts from those emissions. The DNR is not conducting any analysis of environmental justice disparate impacts in making its decision to approve, modify, or extend air permits in this environmental justice community, specifically, or environmental justice communities statewide, generally. As a recipient of funding from the EPA to operate its WPP, the DNR is also required to consider and analyze environmental justice factors in issuing permits through programs funded by the EPA.

This mandate is clearly not being met, and the DNR is depriving environmental justice communities in this area of their civil rights. Without consideration and analysis of environmental justice impacts caused by the pending approval of the Facility's operating permit, the administrative process to grant such permit is illegal and in violation of Title VI of the Civil Rights Act of 1964, and EPA's regulations promulgated thereunder. Before issuing an operating permit to the Sikeston Power Station, the DNR must conduct a disproportionate impact analysis and analyze the potential impact the pollutants released by the Facility can have on environmental justice communities in the region.

EPA's implementing regulations prohibit recipients of EPA funding from discriminating. Specifically, EPA's Title VI regulations provide that an EPA funding recipient:

> shall not use criteria or methods of administering its program or activity which have the effect of subjecting individuals to discrimination because of their race, color, national origin, or sex, or have the effect of defeating or substantially impairing accomplishment

[51] 40 C.F.R. 7.90(a).

> of the objectives of the program or activity with respect to individuals of a particular race, color, national origin, or sex.[52]

Any decision by the DNR to approve the Facility's NPDES Permit as drafted would violate the agency's statutory and regulatory duty to administer all programs and activities in a nondiscriminatory manner. Furthermore, by failing to conduct an analysis of the effects of the pollutants discharged by the Facility on the minority and low-income communities located near the Facility, the DNR has failed to satisfy its requirement as a recipient of federal funds to identify disproportionate impacts associated with their actions. To comply with these Title VI requirements, the DNR must evaluate whether pollutants released by the Sikeston Power Station will have a disparate impact on these low-income, minority communities, but has not done so.

The Draft Permit document published by the DNR does not raise or identify the issue of disproportionate impacts at all, much less conduct a disproportionate impacts analysis for the types of pollutants discharged by the Facility into the minority and low-income communities around it. Without consideration of environmental justice issues, the DNR's actions in approving the Draft Permit will have an adverse impact that is discriminatory on the bases of race, color, or national origin, and on the basis of economic status. Under the Draft Permit, residents living near the Facility will be exposed to a multitude of pollutants in amounts that are likely to threaten human health. Residents in this area are disproportionately minority and low-income compared to other areas of Missouri. Therefore, the DNR's decision to approve the Facility's operating permit as drafted will disparately impact minority and low-income communities in violation of Title VI.

Even if the Facility's NPDES permit complies with the Clean Water Act, such compliance does not absolve the DNR or the Facility from performing a disproportionate impact analysis related to the issuance of the permit on neighboring communities. Since 2013, EPA has stated in policy documents that it "will no longer presume an absence of adversity if a …health-based threshold…is satisfied."[53] EPA explained that "presuming compliance with civil rights laws wherever there is compliance with environmental health-based thresholds may not give sufficient consideration to other factors that could also adversely impact human health."[54] EPA's position has been applied to Title VI complaints filed with the EPA, in which EPA explained "compliance with federal and/or state environmental regulations, does not, by itself, ensure compliance with Title VI."[55]

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[52] 40 C.F.R. 7.35(b).
[53] U.S. Environmental Protection Agency, Draft Policy Papers Released for Public Comment: Title VI of the Civil Rights Act of 1964: Adversity and Compliance with Environmental and Health-Based Thresholds, and Role of Complainants and Recipients in the Title VI Complaints and Resolution Process, 78 Fed. Reg. 24739, 24742 (April 26, 2013).
[54] *Id.*
[55] *See*, *Angelita C. et al v. California Department of Pesticide Regulation*, US EPA, Re: Title VI Complaint 16R-99-R9 (2011).

The permit approval process for the Facility should be no less involved just because it is a permit renewal. Since 1998, the EPA has explained that permit renewals should be treated and analyzed as if they were new facility permits.[56] "[P]ermit renewal is, by definition, an occasion to review the overall operations of a permitted facility and make any necessary changes."[57] Environmental Justice factors that may not have been considered at the time the Facility opened should nonetheless be examined now, upon renewal.

To address Title VI, and EPA regulations and guidance documents, the DNR should require the Facility to conduct a robust analysis of disproportionate impacts to residents living near the Facility, to consider the cumulative environmental impacts from this and other nearby permitted facilities regulated by the DNR, and allow public comment on that disproportionate impacts analysis. Alternatively, the DNR should conduct such analysis itself for public comment.

Conclusion

The Draft Permit undermines the intent and purpose of the Clean Water Act by removing the Facility's effluent limitation for arsenic, by loosening the Facility's limitation for iron, by failing to impose an effluent limitation or monitoring and reporting requirement for boron, and by failing to mandate sufficiently frequent monitoring and reporting. These failings are especially dangerous in light of the Facility's history of exceedances, the impending closure of the Facility's coal ash ponds, the local area's reliance on groundwater as a source of drinking water, and the fact that the residents located closest to the plant are largely low-income, minorities. Sierra Club and Great Rivers request that DNR revise the Draft Permit to impose stricter requirements more protective of the environment and public health, and conduct an

[56] U.S. Environmental Protection Agency, Interim Guidance for Investigating Title VI Administrative Complaints Challenging Permits, (February 1998).
[57] *Id.*

appropriate disproportionate impact analysis as required under Title VI. Thank you for your consideration of these comments. We look forward to your response.

Sincerely,

Ethan Thompson
Staff Attorney
Great Rivers Environmental Law Center

Sarah Rubenstein
Staff Attorney
Great Rivers Environmental Law Center

EXHIBIT A

EJSCREEN ACS Summary Report

Location: User-specified point center at 36.879461, -89.623842
Ring (buffer): 1-miles radius
Description:

Summary of ACS Estimates	2014 - 2018
Population	681
Population Density (per sq. mile)	223
People of Color Population	391
% People of Color Population	57%
Households	287
Housing Units	316
Housing Units Built Before 1950	15
Per Capita Income	28,327
Land Area (sq. miles) (Source: SF1)	3.05
% Land Area	96%
Water Area (sq. miles) (Source: SF1)	0.13
% Water Area	4%

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	681	100%	306
Population Reporting One Race	675	99%	691
White	298	44%	263
Black	345	51%	285
American Indian	33	5%	91
Asian	0	0%	25
Pacific Islander	0	0%	11
Some Other Race	0	0%	16
Population Reporting Two or More Races	5	1%	31
Total Hispanic Population	8	1%	120
Total Non-Hispanic Population	672		
White Alone	289	43%	258
Black Alone	345	51%	285
American Indian Alone	33	5%	91
Non-Hispanic Asian Alone	0	0%	25
Pacific Islander Alone	0	0%	11
Other Race Alone	0	0%	16
Two or More Races Alone	5	1%	31
Population by Sex			
Male	286	42%	178
Female	395	58%	201
Population by Age			
Age 0-4	67	10%	80
Age 0-17	175	26%	155
Age 18+	506	74%	255
Age 65+	156	23%	130

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018 .

EXHIBIT A

EJSCREEN ACS Summary Report

Location: User-specified point center at 36.879461, -89.623842
Ring (buffer): 1-miles radius
Description:

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	443	100%	205
Less than 9th Grade	13	3%	73
9th - 12th Grade, No Diploma	37	8%	69
High School Graduate	131	30%	141
Some College, No Degree	157	35%	120
Associate Degree	18	4%	80
Bachelor's Degree or more	105	24%	130
Population Age 5+ Years by Ability to Speak English			
Total	614	100%	282
Speak only English	593	97%	246
Non-English at Home[1+2+3+4]	21	3%	84
[1]Speak English "very well"	21	3%	72
[2]Speak English "well"	0	0%	11
[3]Speak English "not well"	0	0%	22
[4]Speak English "not at all"	0	0%	11
[3+4]Speak English "less than well"	0	0%	22
[2+3+4]Speak English "less than very well"	0	0%	22
Linguistically Isolated Households*			
Total	0	0%	11
Speak Spanish	0	0%	11
Speak Other Indo-European Languages	0	0%	11
Speak Asian-Pacific Island Languages	0	0%	11
Speak Other Languages	0	0%	11
Households by Household Income			
Household Income Base	287	100%	139
< $15,000	65	23%	112
$15,000 - $25,000	11	4%	64
$25,000 - $50,000	124	43%	83
$50,000 - $75,000	30	10%	86
$75,000 +	58	20%	90
Occupied Housing Units by Tenure			
Total	287	100%	139
Owner Occupied	166	58%	96
Renter Occupied	122	42%	124
Employed Population Age 16+ Years			
Total	520	100%	248
In Labor Force	306	59%	201
Civilian Unemployed in Labor Force	14	3%	53
Not In Labor Force	214	41%	161

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EXHIBIT A

EJSCREEN ACS Summary Report

Location: User-specified point center at 36.879461, -89.623842
Ring (buffer): 1-miles radius
Description:

	2014 - 2018 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	1,064	100%	238
English	1,043	98%	234
Spanish	7	1%	20
French	0	0%	11
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	0	0%	11
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	0	0%	11
Chinese	3	0%	13
Japanese	N/A	N/A	N/A
Korean	0	0%	11
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	0	0%	11
Other Asian	0	0%	11
Tagalog	0	0%	11
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	0	0%	11
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	11	1%	46
Total Non-English	21	2%	334

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018.
*Population by Language Spoken at Home is available at the census tract summary level and up.

EJSCREEN Census 2010 Summary Report

Location: User-specified point center at 36.879461, -89.623842
Ring (buffer): 1-miles radius
Description:

Summary	Census 2010
Population	710
Population Density (per sq. mile)	233
People of Color Population	370
% People of Color Population	52%
Households	310
Housing Units	332
Land Area (sq. miles)	3.05
% Land Area	96%
Water Area (sq. miles)	0.13
% Water Area	4%

Population by Race	Number	Percent
Total	710	
Population Reporting One Race	698	98%
White	342	48%
Black	351	49%
American Indian	1	0%
Asian	3	0%
Pacific Islander	1	0%
Some Other Race	0	0%
Population Reporting Two or More Races	12	2%
Total Hispanic Population	6	1%
Total Non-Hispanic Population	704	99%
White Alone	340	48%
Black Alone	347	49%
American Indian Alone	1	0%
Non-Hispanic Asian Alone	3	0%
Pacific Islander Alone	1	0%
Other Race Alone	0	0%
Two or More Races Alone	12	2%

Population by Sex	Number	Percent
Male	318	45%
Female	392	55%

Population by Age	Number	Percent
Age 0-4	53	7%
Age 0-17	177	25%
Age 18+	533	75%
Age 65+	135	19%

Households by Tenure	Number	Percent
Total	310	
Owner Occupied	164	53%
Renter Occupied	146	47%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1.

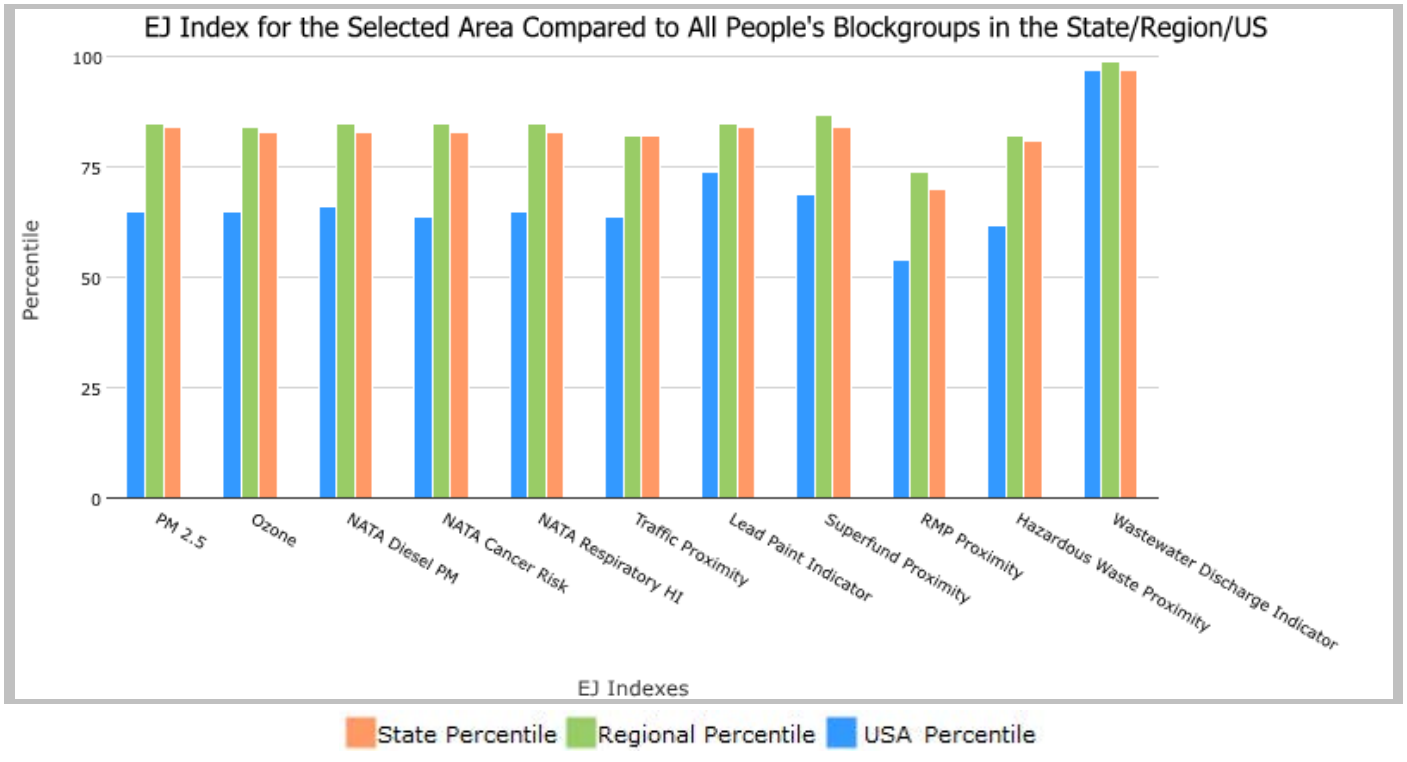
EJSCREEN Report (Version 2020)

1 mile Ring Centered at 36.879461,-89.623842, MISSOURI, EPA Region 7

Approximate Population: 681

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	84	85	65
EJ Index for Ozone	83	84	65
EJ Index for NATA* Diesel PM	83	85	66
EJ Index for NATA* Air Toxics Cancer Risk	83	85	64
EJ Index for NATA* Respiratory Hazard Index	83	85	65
EJ Index for Traffic Proximity and Volume	82	82	64
EJ Index for Lead Paint Indicator	84	85	74
EJ Index for Superfund Proximity	84	87	69
EJ Index for RMP Proximity	70	74	54
EJ Index for Hazardous Waste Proximity	81	82	62
EJ Index for Wastewater Discharge Indicator	97	99	97



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2020)

1 mile Ring Centered at 36.879461,-89.623842, MISSOURI, EPA Region 7

Approximate Population: 681

Input Area (sq. miles): 3.14

No map available

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

United States Environmental Protection Agency

EJSCREEN Report (Version 2020)

1 mile Ring Centered at 36.879461,-89.623842, MISSOURI, EPA Region 7

Approximate Population: 681

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	9.49	8.56	98	8.17	99	8.55	81
Ozone (ppb)	45.4	45.6	46	44.4	67	42.9	73
NATA* Diesel PM (µg/m^3)	0.398	0.447	51	0.367	60-70th	0.478	50-60th
NATA* Cancer Risk (lifetime risk per million)	31	32	50	27	70-80th	32	<50th
NATA* Respiratory Hazard Index	0.46	0.42	75	0.36	80-90th	0.44	50-60th
Traffic Proximity and Volume (daily traffic count/distance to road)	94	370	43	330	45	750	34
Lead Paint Indicator (% Pre-1960 Housing)	0.12	0.29	38	0.34	33	0.28	41
Superfund Proximity (site count/km distance)	0.098	0.099	65	0.098	72	0.13	66
RMP Proximity (facility count/km distance)	0.41	0.64	60	0.95	45	0.74	55
Hazardous Waste Proximity (facility count/km distance)	0.52	1.6	44	1.3	47	5	39
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	17	8	96	4	98	9.4	98
Demographic Indicators							
Demographic Index	51%	27%	88	25%	89	36%	74
People of Color Population	57%	20%	89	20%	92	39%	71
Low Income Population	44%	33%	71	31%	76	33%	73
Linguistically Isolated Population	0%	1%	72	2%	66	4%	45
Population With Less Than High School Education	11%	10%	62	9%	69	13%	58
Population Under 5 years of age	10%	6%	85	6%	84	6%	84
Population over 64 years of age	23%	16%	81	16%	82	15%	84

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EXHIBIT B - CHART OF AREA SCHOOLS

School Name	Grade Level	Enrollment	Number of Minority Students	Percentage of Minority Students	Number of Economically Disadvantaged Students*	Percent Economically Disadvantaged
Christian Academy	PreK through Upper	111	25	23%	NA	NA
Lee Hunter Elementary School	Elementary	360	147	41%	357	99%
Matthews Elementary School	Elementary	356	200	56%	256	72%
Sikeston 5th and 6th Grade Center	Middle	548	262	48%	545	99%
Sikeston 7th and 8th Grade Center	Middle	536	245	46%	533	99%
Sikeston High School	Upper	952	413	43%	949	100%
Sikeston Kindergarten and Early Childhood Center	PreK and Kindergarten	375	168	45%	372	99%
St. Francis Xavier School	PreK through Middle	150	NA	NA	NA	NA
Wing Elementary School	Elementary	359	185	52%	356	99%
TOTAL		**3747**	**1645**	**46%**	**3368**	**95%**

* Measured by receipt of reduced or free lunch

Source: National Center for Education Statistics, located at https://nces.ed.gov/ccd/schoolsearch/ (last visited December 8, 2021); Private School Review, located at privateschoolreview.com (last visited December 15, 2021); Public School Review, located at publicschoolreview.com (last visited December 15, 2021); individual school websites.

Appendix B:
Comment Response Letter

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

February 3, 2023

Great Rivers Environmental Law Center
319 North 4th Street, Suite 800
St. Louis, MO 63102

Dear Ethan Thompson and Sarah Rubenstein:

Thank you for your comments dated May 30, 2022, concerning the draft renewal permit for the Sikeston Power Station, MO State Operating Permit MO-0095575. Following are our responses.

DNR Should Establish Effluent Limits and Require Monitoring and Reporting for Arsenic
Sierra club and Great Rivers are concerned that the Draft Permit no longer contains effluent limits or requires monitoring and reporting for arsenic at the Facility. During the last permit cycle, the Facility repeatedly violated effluent limitations for arsenic, leading EPA to identify a significant/category I violation. Although the aquatic life water quality standards for arsenic have been loosened during the previous permit cycle, this does not negate DNR's responsibility to include effluent limits for arsenic. DNR should still set effluent limitations and require monitoring and reporting for arsenic, especially considering the recent closure of the imminent closure of the coal ash pond at the Facility. As DNR states in the Draft Permit, closure of a coal ash pond reduces the settling time for metals in wastewater, and "when settling time is reduced, metals will be entrained in wastewater to a larger extent and reduction of treatment (time of retention) will be reduced." While DNR was referring to selenium in the above quote, the same logic applies to arsenic, which is also a metalloid and can leach into ground and surface waters from coal ash waste. Because the closure of the ash pond will likely increase arsenic levels in wastewater released from the Facility, and because the Facility has shown an inability to limit arsenic pollution in the past, DNR should establish effluent limits and continue to require frequent monitoring and reporting for arsenic in the Draft Permit. When setting the effluent limits for arsenic, DNR should take into account the effluent limitations contained in 40 CFR 423. Although the Draft Permit fact sheet references the 11 µg/L daily maximum and 8 µg/L monthly average for arsenic, these recommendations are not reflected in the requirements for Outfall #3 in the Draft Permit itself. Even though the aquatic life water quality standards for arsenic have recently increased, DNR should not ignore the federal requirements contained in 40 CFR 423. Additionally, aquatic life is not the only designated use for Ditch #4. For instance, Ditch #4 is also designated for human health protection, a use that comes with far stricter federal recommended criteria for arsenic. By focusing solely on the aquatic life standards and ignoring other uses as well as the effluent limits in 40 CFR 423, DNR is in danger of violating the anti-backsliding provisions of the Clean Water Act. Section 402(o) of the Clean Water Act clearly prohibits the imposition of effluent limitations that are less stringent than those contained in the

prior permit. If DNR proceeds with the Draft Permit in current form, it risks potential violations of the federal Clean Water Act.

Arsenic Response:
Since the last renewal, the Department promulgated, and the EPA approved, new higher water quality standards for the protection of aquatic life (AQL) for arsenic. Effluent concentrations for this parameter indicate the facility does not have reasonable potential (RP) to cause or contribute to an excursion above AQL water quality standards. The human health protection (HHP) water quality standard for arsenic is 100 µg/L. The permit also does not apply the HHP standard because the discharge does not have RP under the HHP standard either. For further discussion on uses assigned to streams, see response below.

There are no federal standards applicable to this discharge for arsenic. The Commenters referenced 11 µg/L daily maximum and 8 µg/L monthly average, but these requirements are specifically for categorical effluent which can only be applied to Flue Gas Desulphurization (FGD) type wastewater pursuant to 40 CFR 423.13(g)(1)(i). This type of wastewater is not discharged by the Sikeston Power Station therefore those limits cannot be lawfully applied in this permit.

The Department did not violate antibacksliding provisions. First, there is no reasonable potential pursuant to 40 CFR 122.44(d); and second, the standard has changed. CWA 402(o)(2)(B)(i) is an exception to an exception and describes responsibilities of the permitting authority related to "revised regulations, guidance, or test methods". The numeric requirements for protection of aquatic life for arsenic is a revised regulation. Finally, while CWA 402(o)(3) is the safety clause, the receiving stream is not impaired for arsenic, therefore the adjusted permit limit is allowed under CWA 303(d)(4)(B). Because the water quality standard has changed, that becomes the comparison for reasonable potential. While the safety clause is designed to protect from ill-advised changes to the permit, the receiving stream is not impaired for arsenic so the permit can be changed.

DNR Cannot Backslide on Iron Effluent Limits
In the Draft Permit, DNR proposes to loosen the monthly average limits for iron from 822 µg/L in the previous permit to 917 µg/L in the new draft. Under Section 402(o) of the federal Clean Water Act, DNR cannot issue a permit with less stringent limits unless such an action would fit one of the exceptions provided in the statute. In the Draft Permit, DNR justifies this change "because the data variability are low…" Data variability is not one of the exceptions enumerated in Section 402(o)(2) of the Clean Water Act and is therefore not a valid justification for loosening the monthly average effluent limit. DNR should rectify this error and come into compliance with the Clean Water Act by establishing a monthly average effluent limit for iron that is at least as stringent as the 822 µg/L limit contained in the previous permit.

Iron Response:
Site specific data almost always changes the coefficient of variation, part of the statistical procedures used to calculate a water quality based effluent limit. This revision is implementing the same WQS. When CWA 402(o)(2)(B)(i) is read in conjunction with the concurring language in CWA 402(o)(2)(E), then recalculating the effluent limits based on new data is an allowed

permit change. Summarily, CWA 402(o)(3) requires the reissued permit to not violate approved water quality standards, which the recalculation does not because the underlying assumption (the water quality standard itself) is the same. CWA 303(d)(4) allows backsliding because the stream is not impaired for iron.

DNR Should Establish Effluent Limitations for Boron
Wastewater from coal ash ponds at the Facility discharge to Outfall #3. Analysis from groundwater monitoring reports for the Facility shows groundwater in the vicinity of the plant moves in a west southwesterly direction – away from the ash ponds and towards Ditch #4. As a result, the coal ash ponds at the Facility represent a direct risk to the Ditch. Consistent with this expectation, sampling results from the most recent CCR groundwater monitoring report for the Facility show repeated exceedances of boron at the plant. Boron is a known contaminant from coal ash, and a primary leaching parameter in ash. 40 CFR 257 assesses boron in the detection monitoring constituents for coal ash ponds pursuant to Appendix III to Part 257. But the Draft Permit proposes no effluent limit for boron. This makes no sense in light of the repeated exceedances, the likelihood that groundwater flows directly from the ash ponds to Ditch #4, as well as the impending closure of coal ash ponds, which increases the risk of contaminants concentrating in wastewater, as outlined in more detail above.

Boron Response:
Boron discharge data from outfall #003 were reviewed, and the data do not show reasonable potential (RP) to cause or contribute to excursions above Missouri's water quality standards for protection of irrigation (IRR). Groundwater is not discharged from outfall #003 therefore was not included in the review of outfall #003 discharge. The highest discharge data point reported was 1330 µg/L; the irrigation standard is 2000 µg/L. Because there is no RP, limits are not required pursuant to 40 CFR Part 122.44(d)(1)(i) at outfall #003. The source of boron is from coal ash. Federal regulations also require power plants to cease sluicing ash, another major contributor of boron in discharges. Special Condition #8 requires the facility to cease sluicing ash by October 31, 2023. When the ash ponds are closed, the stormwater will no longer contact boron thereby removing the source of boron in surface water discharges through outfall #003.

Groundwater data is not used in the assessment of discharges from outfall #003 but there are future limits for boron in groundwater. The groundwater has been assessed for exceedances of the irrigation standard in groundwater. The irrigation (IRR) standard of 2000 µg/L applies to groundwater and surface water and has the same limit for surface water and groundwater exist for boron, as an irrigation standard (IRR) at 2000 µg/L. The groundwater limit will protect Ditch #4 if a subsurface to surface water connection is occurring, although that connection has not been scientifically established.

The commenters provided a reference to the 2014 EPA health advisory for boron. However, the EPA has not promulgated drinking water standards for boron.

DNR Should Require More Frequent Groundwater Monitoring
Sampling results from the Facility's most recent CCR groundwater monitoring report also show exceedances of sulfate, calcium, total dissolved solids, fluoride, and chloride standards, as well as pH, from the Facility's coal ash ponds. The Draft Permit proposes to allow the Facility to

monitor these ash ponds only twice per year. Allowing such infrequent monitoring, in light of the history of excess groundwater emissions from the Facility, is dangerous and not protective of public health. DNR should mandate monthly, or at least quarterly, groundwater monitoring at the Facility.

Groundwater Monitoring Response:
In comments dated January 2021, the facility requested twice-annual groundwater monitoring. This is congruent with current operations of the facility. The Department does not enforce, authorize or consider 40 CFR 257 sampling requirements; but because additional sampling is costly, twice annual monitoring was granted to the facility. Sampling groundwater more often does not equate to more expedient remediation measures or enhance or hasten compliance with groundwater requirements. Groundwater movement through subsurface formations is slow, and twice annual sampling required under this permit would not provide any distinctly different data than sampling monthly. The Department does not determine applicability or compliance with 40 CFR 257; that is a self-implementing regulation. Missouri has not established a state coal ash program nor is Missouri required to establish any such program. As such, 40 CFR 257 Subpart D (the "coal ash rule") is not managed by Missouri. The federal coal ash regulations are self-implementing. A self-implementing regulation completely applies to all applicable facilities without the need for a permit or other type of initiating document to establish specified conditions. A self-implementing regulation requires facilities to follow the rules and self-manage all documents, reporting, and compliance requirements, if they are subject. Missouri's Water Protection Program does not have the authority to determine regulatory applicability or compliance with any facility's operations under 40 CFR 257 Subpart D.

DNR Should Require More Frequent Monitoring and Reporting at Outfall #003
Although the permit requires monthly monitoring and reporting for most pollutants, there are still several, including whole effluent toxicity, chromium, and zinc, that are monitored and reported annually. DNR should require monthly monitoring and reporting of all pollutants so that the Department and the public have the current information necessary to police activity at the Facility. Annual reporting significantly hampers the ability of the public to enforce the Facility's permit obligations through citizen suits. The Clean Water Act allows citizens to act as "private attorneys general" to ensure compliance with the law. As Congress has noted "[c]itizen suits are a proven enforcement tool. They operate as Congress intended-to both spur and supplement…government enforcement actions. They have deterred violators and achieved significant compliance gains." Citizen suits are especially important when regulators do not have the time and funding necessary to effectively police all potential permit violators. Because the Clean Water Act requires citizen suit plaintiffs to show that violations are ongoing, rather than "wholly past," it is essential that such plaintiffs have the most up-to-date information possible. DNR should facilitate citizen oversight by requiring monthly–or at the very least, quarterly–monitoring and reporting for all pollutants.

Outfall #003 Monitoring Response:
Table A-1 is for outfall #003. Zinc monitoring at outfall #003 is monthly. This requirement is based on elevated pollutant levels of zinc being discharged at outfall #003 in comparison to the water quality standard. Chromium does not have reasonable potential because there are very low levels of chromium (1.58 µg/L) at outfall #003 compared to the water quality standard, therefore

neither monitoring nor a limit is required pursuant to 40 CFR 122.44(d)(1)(i) at outfall #003 for zinc.

Table A-2 is for #CT1 which is for only cooling tower blowdown wastewater type. Cooling tower blowdown limits are required pursuant to the effluent limitation guideline at 40 CFR 423.13(d)(1); and are technology limits, not water quality limits. Technology limits are required based on the type of wastewater, not the pollutant content. The effluent limit from 40 CFR 423 is required to be applied prior to mixing with other waste streams. This permit has an internal monitoring point pursuant to 40 CFR 122.44(i)(1)(iii). Zinc and chromium are specifically called out for monitoring for the cooling tower blowdown wastewater type. Cooling tower blowdown is measured annually at outfall #CT1 which is an internal monitoring point. This water is not discharged directly but combines with other waste streams then is discharged ultimately from outfall #003.

Whole Effluent Toxicity (WET) is measured annually. WET testing is a comprehensive test, which is not performed like other pollutant testing. WET testing uses live organisms and visual examination of those organisms to determine toxicity. The Department frequently measures WET annually at industrial sites. The facility has not shown reasonable potential for WET as there has been no toxicity demonstrated in the past, therefore a limit is not required pursuant to 40 CFR 122.44(d)(1)(ii).

Data is publically available the day after it is uploaded by the facility into the eDMR system. Online, access https://apps5.mo.gov/mocwis_public/dmrDisclaimer.do to obtain the data.

DNR Should Impose More Stringent Emission Limitations and Monitoring Requirements to Protect Vulnerable Communities

The Facility is an electric generating station located in Scott County, Missouri, on the northwest side of Sikeston. Its boiler burns coal or a blend of coal and petroleum coke. The Facility also stores and conveys limestone; stores, crushes, and conveys coal; utilizes several large petroleum storage tanks; and operates an emergency fire pump and an emergency diesel generator. Although coal plants are commonly thought of major air polluters, they can also have devastating impacts on water supplies. “[P]ower plants discharge large wastewater volumes, containing vast quantities of pollutants, into waters of the United States. The pollutants include both toxic and bioaccumulative pollutants such as arsenic, mercury, selenium, chromium, and cadmium. Today, these discharges account for about 30 percent of all toxic pollutants discharged into surface waters by all industrial categories regulated under the CWA. Coal plants frequently pollute waterways, drinking water, and fishing and swimming areas with the heavy metals chromium, molybdenum, nickel, selenium, mercury, arsenic, cadmium, thallium, lead, arsenic and boron. Consistent with this analysis, the Facility discharges chlorine, boron, iron, selenium, zinc, ammonia, nitrate, nitrite, phosphorous, chloride, sulfate, chromium, arsenic, copper, mercury, and manganese, among others.

Exposure to the substances discharged by the Facility, via absorption through the skin or through ingestion of contaminated drinking water, is associated with a variety of negative health effects. Consuming water or fish contaminated with these substances can lead to cancer, cardiovascular disease, neurological disorders, kidney and liver damage, and lower IQs in children. Moreover,

exposure to heavy metals in particular through multiple pathways can lead to birth defects, cancer, and death among other effects. Heavy metals can also get into the food chain, traveling from the water to fish, predators, and humans who eat the fish. These heavy metals then accumulate in the body, causing further harm. Additionally, arsenic causes an increased risk of multiple cancers including kidney and prostate cancer, as well as liver disease, anemia, and gangrene.

In infants, boron has been known to cause erythema in the diaper area, mild congestion or a pus-like discharge in the eye, vomiting, signs of irritability, diarrhea, and even convulsive seizures. In adults, it has been known to cause vomiting, ulcers in the throat, nausea, and diarrhea. The EPA has determined that exposure to boron in drinking water above a level of 4 mg/L for one day or 0.9 mg/L for ten days can cause adverse effects to a child and that a lifetime exposure to 1 mg/L of boron also can cause adverse effects. Despite these recommended levels for boron, the Facility's draft NPDES permit allows the Facility up to ten years to attain compliance with a groundwater limit of 2 mg/L for boron releases from its coal ash ponds. As a result, it is likely that the Facility will release more boron than EPA itself admits is safe until closure is finalized. It has been reported that as levels of boron in drinking water increase, there is an increased risk of effects on the testes of young males; and there is also an increased risk of effects on human fetuses and adult male testes. This is in addition to the other common symptoms of boron poisoning which include vomiting, diarrhea, abdominal pain, lethargy, lightheadedness, rash, and headache. These are risks DNR will force the area community to assume unless it takes stricter action against the Facility in the Draft Permit. The Facility's draft NPDES permit also mandates that the facility must attain compliance with a groundwater limit of 0.05 mg/L of selenium, the same as EPA's maximum contaminant level (MCL) for selenium. But again, because the Draft Permit allows the Facility up to ten years to come into compliance with that standard, the Facility will be able to release more than 0.05 mg/L of selenium until that point. The EPA has found that when people are exposed to levels of selenium above the MCL even for short periods of time, they can experience changes to their hair and fingernails, damage to their peripheral nervous system, irritability, and fatigue. A lifetime of exposure to selenium to MCL can cause hair and fingernail loss and damage to kidney and liver tissue and the nervous and circulatory systems. Studies have also shown that chronic exposure to selenium in water has led to excessive tooth decay, lack of mental alertness, and listlessness. Additionally, although information is not available as to the reproductive effects of selenium in humans, it has been shown that high levels of selenium in the diets of pigs, sheep, and cattle interferes with normal fetal development and leads to fetal malformations. Again, these are health risks DNR is asking the area community to assume by allowing the Facility extra time to comply with applicable drinking water standards. Finally, power plant pollution raises municipal water bills. This happens when water treatment plants must do additional work and spend additional money to make sure that people are receiving water that is safe to drink. As a result, insufficient pollution restrictions in the Draft Permit has the potential to impact the budgets of adjacent residents, many of whom are already in a lower socioeconomic bracket.

The Community That Will Be Impacted by the Facility and the Draft Permit Constitutes an Environmental Justice Community Under EPA Title VI Civil Rights Regulations and Policy.

The Facility is located on the outskirts of Sikeston, just northwest of the city. Sikeston has a total population of 16,023, and minority residents make up just over 30% of that population. In contrast, 57% of the residents living within a mile of the Facility are racial or ethnic minorities, which is significantly higher than the 20% average for the State of Missouri. Furthermore, the residents living within a mile of the Facility are also economically depressed: 44% of the population is considered to be low-income, which is significantly greater than the state average of 33%.

More than one-quarter of the population living within a mile of the Facility are 17 years of age or younger, and 10% of this population is 4 years of age or younger. No less than 3 early childhood schools, 5 elementary schools, 4 middle schools, and 2 high schools are located within three miles of the Facility. These 9 schools have a total enrollment of 3,747. Daycare centers are also present in the area. Simply put, any environmental effects from the Facility will have a significant impact on a large population of children. The schools within the area have a significant percentage of minority students: 46% of the students enrolled in schools within this three-mile radius of the Facility are minority. Because the residents living and attending school close to the Facility are made up of a significant minority population, the area qualifies as an Environmental Justice community as that term is used in Title VI, and in EPA Title VI Civil Rights regulations and policy.

The DNR's Failure to Ensure Meaningful Involvement of Minority, Low- Income and Limited English Proficient Communities in the Permitting Process, and to Provide a Grievance Procedure for Environmental Justice Complaints Violates EPA Regulations Promulgated Under Title VI of the Civil Rights Act of 1964

As a condition of receiving funding under EPA's continuing environmental program grants, recipient agencies must comply with EPA's Title VI regulations, which are incorporated by reference into the grants. These regulations preclude discrimination on the basis of race, color or national origin by any program or agency receiving financial assistance from the EPA. In other words, Title VI creates for recipients a nondiscrimination obligation that is contractual in nature, in exchange for accepting Federal funding. Acceptance of EPA funding creates an obligation on the recipient to comply with the regulations for as long as that funding remains in place. The regulations define a "[r]recipient" as "any state or its political subdivision, any instrumentality of a state or its political subdivision, any public or private agency, institution, organization, or other entity, or any person to which Federal financial assistance is extended directly or through another recipient…." The DNR is a recipient of financial assistance from EPA, and accordingly, is governed by these requirements.

In particular, a state agency accepting EPA funding may not issue permits that are intentionally discriminatory or have a discriminatory effect based on race, color, or national origin. The EPA has explained that an important way for a recipient agency to accomplish this goal is to ensure that impacted communities are allowed substantial involvement in the agency's decision-making process, particularly throughout the permitting decision-making process. In addition, each recipient of EPA funding must designate a Title VI compliance coordinator, shall "adopt grievance procedures that assure the prompt and fair resolution of complaints," and shall conspicuously post notice of nondiscrimination, in languages other than English where

appropriate. The DNR has failed to adopt any kind of Title VI program in compliance with these requirements, and accordingly, is operating in violation of EPA regulations and Title VI. These violations are of even greater significance in the face of a proposed DNR decision to permit a facility such as the Sikeston Power Station, which has a significant environmental impact on minority and low-income communities.

The DNR has failed to ensure meaningful public involvement in the National Pollution Discharge Elimination System (NPDES) permit decision making process in direct violation of Title VI. This is especially true with respect to those minority and low-income communities that are most impacted by water pollution from the permits, such as the neighborhoods impacted by the Facility. The issuance of a generic online public notice to persons who have signed up for a listserv is not sufficient to meet this need because minority and low-income communities are the least likely groups to be able to effectively navigate and comment on public notices for draft permits. For example, persons with limited financial or technical resources may be in need of additional assistance in order to be able to review the proposed permit, ascertain its impact on their neighborhoods, or to be heard in response thereto. Many residents living near the Facility fall within this category, but no such efforts appear to have been undertaken by the DNR or the Facility to make such provisions.

To this end, the DNR should create a position for an Environmental Justice liaison to operate across all DNR programs that receive federal funding to engage and inform minority and low-income communities whenever the DNR conducts permitting and siting decisions that might have disproportionate impacts on such communities. The DNR should proactively facilitate informational meetings for minority and low-income communities when water permitting decisions are proposed such as the one relating to the Facility's NPDES permit that might impact such communities. The DNR should provide public information about the proposed permit and the facility in languages other than English and should offer translators and interpreters at public meetings. Such procedures could be modeled after those employed by other states such as Illinois, or the EPA's Final Recipient Guidance. Without these types of components, the DNR's Water Protection Program ("WPP") remains in violation of Title VI regulations.

The DNR also lacks a proper grievance procedure for environmental justice complaints as required by law. EPA's Title VI implementing regulations state that each recipient of EPA funding shall "adopt grievance procedures that assure the prompt and fair resolution of complaints which allege violation of this part." The DNR has adopted no such procedures and is therefore in violation of this regulation. To remedy this violation of EPA regulations, the DNR should develop a complaint procedure whereby members of minority and low-income communities are provided a vehicle to address potential environmental justice and civil rights issues in the DNR's air permitting process.

The DNR's Failure to Consider Disparate Impacts to Minority and Low-Income Communities in Issuing the Sikeston Power Station Draft Operating Permit Violates Title VI of the Civil Rights Act of 1964 and EPA Regulations and Guidance Promulgated Thereunder

The Draft Permit is evidence that the DNR's permitting program causes a disparate impact on minority and low-income communities, in the form of concentrated pollutant discharges from a

variety of permitted sources as well as cumulative and synergistic impacts from those emissions. The DNR is not conducting any analysis of environmental justice disparate impacts in making its decision to approve, modify, or extend air permits in this environmental justice community, specifically, or environmental justice communities statewide, generally. As a recipient of funding from the EPA to operate its WPP, the DNR is also required to consider and analyze environmental justice factors in issuing permits through programs funded by the EPA.

This mandate is clearly not being met, and the DNR is depriving environmental justice communities in this area of their civil rights. Without consideration and analysis of environmental justice impacts caused by the pending approval of the Facility's operating permit, the administrative process to grant such permit is illegal and in violation of Title VI of the Civil Rights Act of 1964, and EPA's regulations promulgated thereunder. Before issuing an operating permit to the Sikeston Power Station, the DNR must conduct a disproportionate impact analysis and analyze the potential impact the pollutants released by the Facility can have on environmental justice communities in the region.

EPA's implementing regulations prohibit recipients of EPA funding from discriminating. Specifically, EPA's Title VI regulations provide that an EPA funding recipient: shall not use criteria or methods of administering its program or activity which have the effect of subjecting individuals to discrimination because of their race, color, national origin, or sex, or have the effect of defeating or substantially impairing accomplishment of the objectives of the program or activity with respect to individuals of a particular race, color, national origin, or sex.

Any decision by the DNR to approve the Facility's NPDES Permit as drafted would violate the agency's statutory and regulatory duty to administer all programs and activities in a nondiscriminatory manner. Furthermore, by failing to conduct an analysis of the effects of the pollutants discharged by the Facility on the minority and low-income communities located near the Facility, the DNR has failed to satisfy its requirement as a recipient of federal funds to identify disproportionate impacts associated with their actions. To comply with these Title VI requirements, the DNR must evaluate whether pollutants released by the Sikeston Power Station will have a disparate impact on these low-income, minority communities, but has not done so.

The Draft Permit document published by the DNR does not raise or identify the issue of disproportionate impacts at all, much less conduct a disproportionate impacts analysis for the types of pollutants discharged by the Facility into the minority and low-income communities around it. Without consideration of environmental justice issues, the DNR's actions in approving the Draft Permit will have an adverse impact that is discriminatory on the bases of race, color, or national origin, and on the basis of economic status. Under the Draft Permit, residents living near the Facility will be exposed to a multitude of pollutants in amounts that are likely to threaten human health. Residents in this area are disproportionately minority and low-income compared to other areas of Missouri. Therefore, the DNR's decision to approve the Facility's operating permit as drafted will disparately impact minority and low-income communities in violation of Title VI.

Even if the Facility's NPDES permit complies with the Clean Water Act, such compliance does not absolve the DNR or the Facility from performing a disproportionate impact analysis related

to the issuance of the permit on neighboring communities. Since 2013, EPA has stated in policy documents that it "will no longer presume an absence of adversity if a …health based threshold…is satisfied." EPA explained that "presuming compliance with civil rights laws wherever there is compliance with environmental health-based thresholds may not give sufficient consideration to other factors that could also adversely impact human health." EPA's position has been applied to Title VI complaints filed with the EPA, in which EPA explained "compliance with federal and/or state environmental regulations, does not, by itself, ensure compliance with Title VI."

The permit approval process for the Facility should be no less involved just because it is a permit renewal. Since 1998, the EPA has explained that permit renewals should be treated and analyzed as if they were new facility permits. "[P]ermit renewal is, by definition, an occasion to review the overall operations of a permitted facility and make any necessary changes." Environmental Justice factors that may not have been considered at the time the Facility opened should nonetheless be examined now, upon renewal.

To address Title VI, and EPA regulations and guidance documents, the DNR should require the Facility to conduct a robust analysis of disproportionate impacts to residents living near the Facility, to consider the cumulative environmental impacts from this and other nearby permitted facilities regulated by the DNR, and allow public comment on that disproportionate impacts analysis. Alternatively, the DNR should conduct such analysis itself for public comment.

Response:

Regulatory Requirements to Issue a Lawful Operating Permit

Section 640.016.1, RSMo, prohibits the Department from establishing "in any permit any requirement, provision, stipulation, or any other restriction which is not prescribed or authorized by regulation or statute, unless the requirement, provision, stipulation, or other restriction is pursuant to the authority addressed in statute." Therefore, the Department can only impose permit requirements that are authorized by law. Section 644.051.2 requires facilities to obtain a Missouri State Operating Permit which for this facility is a National Pollutant Discharge Elimination System (NPDES) permit to discharge water contaminants.

The Department cannot require facilities to perform tasks not authorized by the federal Clean Water Act or the Missouri Clean Water Law, nor impose obligations before they are made mandatory by state or federal law. The Commenter's generalities, assumptions, and hypothetical information simply do not apply to this facility as the following responses will show. The hypothetical and generalized information provided is irrelevant to this facility's discharges, as there is sufficient site specific data to make reasonable and factual determinations of pollutant loading on a parameter by parameter basis.

The commenters requested that the Department create a position for an environmental justice liaison; these types of requests are well beyond the scope of the permit under review here.

Discharges authorized in operating permits are limited to the contaminants of concern and outfalls or activities described in the permit, and do not cover other media.

Environmental Justice Concerns

Regarding all comments related to environmental justice, the Department has no federal or state statutory or regulatory basis to conduct itself, or require the facility to conduct, any analysis, including cumulative impacts analysis, as a direct result of federal environmental justice policy. Additionally, if the Department acted in such a manner without statutory or regulatory authority, it would further have no basis to articulate the results of that analysis into new or different permit conditions. In short, the Department does not have the authority to establish the additional conditions that the commenters assert should be part of the permitting obligation.

Further, the renewal of a facility's operating permit does not create an opportunity to revisit the physical location of a facility or the requirements of the original construction permit. The commenters point to an EPA interim guidance document from 1998 as support for its assertion that "permit renewals should be treated and analyzed as if they were new facility permits." However, an operating permit, whether new or renewed, cannot be used to modify the facility's construction permit (and therefore cannot alter the facility's physical location) or to implement new or different construction permit conditions. The purpose of an operating permit is to incorporate or otherwise establish all applicable regulatory requirements at the time of permit issuance. The NPDES operating permit identifies, in one document, the regulatory requirements pertaining to discharges of water, to which the facility is subject. The permit's fact sheet enables the State, EPA, the permittee, and the public to better understand those requirements and determine whether the permit's requirements are being met. The NPDES permit does not apply to other regulated areas, such as air or waste materials.

Surface discharges are limited to entering Ditch #4 from outfall #003 and groundwater is also considered in the permit. The permit does not and cannot address air pollution, and therefore only water concerns are reviewed. There is no basis in law to make adjustments to water permit conditions based upon another media.

There are fundamental differences between Title VI, which is applicable federal law, and environmental justice, which is federal policy guidance. As discussed above, the Department can only impose permit conditions for which there is basis in statute or regulation. To the extent the Commenters suggest that the Department should violate state law in order to meet the spirit of a federal policy, the Department does not have the authority to do so.

Title VI of the Civil Rights Act of 1964

It is important to note that presence of a pollutant does not automatically equate to exposure, risk, harm, disparity, or adversity. And while numerous pollutants and their adverse health effects were listed by the commenters, these are misleading because the facility is not discharging levels of the pollutants established as causing negative health effects or harm; and there are no receptors for the groundwater exposure pathway.

The commenters allege that the Department has not adopted grievance procedures to resolve complaints, and that the Department has failed to adopt a Title VI program. However, the Department has had Title VI grievance procedures available, and more recently has revised and updated those grievance procedures in conjunction with EPA. Therefore, the Department has met in the past and is currently meeting its obligations under Title VI of the Civil Rights Act of 1964 and has the necessary procedural safeguards to ensure Title VI compliance in place. All procedural materials required by federal law and regulation are available on the Department's website.

The permit review and issuance process are facially neutral actions, and therefore the Title VI analysis must be limited to whether there is adversity or harm, disparity, and causation. The Department used the same permit practice with this permit, as with other permits across the state. This impartiality ensures that this permit's decisions do not have a sufficiently adverse or disparate effect based on race, color, national origin, or sex.

In a Title VI analysis, adversity exists if a fact-specific inquiry determines that the nature, size, or likelihood of the impact is sufficient to make it an actionable harm. The presence of a discharge or a regulated water contaminant source does not automatically equate to harm, much less actionable harm.

The facility's operating permit implements the appropriate and relevant water quality standards, and the commenters have not presented any actionable or specific rationale to demonstrate specific harms. The commenters listed chemicals that typically exist at power plants and their toxicological profiles; the list is not evidence of harm arising from the facility's discharge. Therefore, there is no cause to take additional action under the permit and the Department has not breached any legal duties. The permit's effluent limits are derived based on applicable regulations.

Regulatory Basis for Operating Permit Conditions

Operating permits are issued to facilities to prohibit discharges above any specified pollutant's numeric criteria by providing maximum allowable discharge limits (daily maximum limits and monthly average limits). Two types of numeric limits are found in Missouri Operating permits. Water quality parameters of concern with need to be limited in the permit are determined by a given contaminant's reasonable potential (RP) to cause or contribute to an excursion above water quality standards, in accordance with the provisions of the Missouri Clean Water Law and implementing regulations. The permits issued by the Water Protection Program only implement water requirements, and parameter-specific water quality requirements are found in 10 CSR 20-7.031 Tables A1 through B3. This facility is also subject to technology requirements for the Steam-Electric category: 40 CFR 423. A reasonable potential determination is not completed on ELG requirements. Parameters for ELGs are implemented based on the applicability statements within the federal regulation.

The commenters observed that arsenic, mercury, selenium, chromium, and cadmium are discharged by the facility into the local watershed. While some of these pollutants are being

discharged from outfall #003, these pollutants are limited appropriately according to applicable regulations and established practices regarding determining reasonable potential.

To determine which pollutants have relevant water quality standards (WQS), uses are assigned to each classified stream, of which Ditch #4 is classified as a permanent stream. Uses for Ditch #4 are: ALP or AQL for Aquatic Life Protection for warm water habitat; WBC-B for whole body contact for recreation; SCR for Secondary Contact Recreation; HHP for Human Health Protection as it relates to the consumption of fish; IRR for irrigation for use on crops utilized for human or livestock consumption; and LWW for Livestock and Wildlife Watering. Each of these uses have varying degrees of protections based on the requirements assigned within 10 CSR 20-7.031 Table H. Additional information follows.

There is no Reasonable Potential (RP) for the facility to violate in-stream WQS for arsenic or boron, therefore the permit does not implement limits for these parameters at outfall #003 based on the Missouri Clean Water Law.

Persons in the Sikeston Area are not Drinking Coal Ash Contaminated Water

The City of Sikeston does not withdraw its public drinking water from a groundwater source that is contaminated by the in-situ coal ash located at the Sikeston Power Station. There are no public water supplies withdrawing water from Ditch #4 to use as a drinking water source. Ditch #4, the stream to which the facility discharges from outfall #003, does not have a drinking water use assigned. There are no registered private drinking water wells located nearby.

Sikeston's public drinking water wells are beyond the reach of the localized groundwater occurring under the in-situ coal ash. Groundwater has flow and elevation similar to surface topography. Groundwater flow direction and speed is based on pressure gradients and elevation under the ground's surface. The closest public well is located at Northwest Ave and Compress Rd, approximately 0.6 miles east of the facility. The groundwater has been shown to flow to the southwest. However, the city's well is an up gradient well, meaning that groundwater flow is moving away from the city well.

To verify that the Sikeston residents are not drinking coal ash impacted groundwater, the Department reviewed the 2021 drinking water quality report (https://dnrservices.mo.gov/ccr/MO4021151.pdf) for Sikeston municipal water. The city is required to test for selenium and sulfate because those pollutants are listed within the National Primary Drinking Water Standards in 40 CFR Part 141. The drinking water report indicated the presence of sulfate, a known pollutant of concern in coal ash leachate, but is also naturally occurring. The municipal drinking water well's value of sulfate was 29.4 mg/L, which is a typical natural level. The maximum contaminant level (MCL) in drinking water for sulfate is 250 mg/L. The city reported non-detect of selenium in April 2021; the MCL for selenium is 50 µg/L. Boron is not listed as a drinking water contaminant in Part 141 therefore was not reported by the city at the drinking water well.

A review of the facility's monitoring wells was also completed. The monitoring wells are not used for drinking but instead only monitoring, which means the wells are used to extract water

for taking water quality samples to determine in-situ pollutant concentrations. The in-situ coal ash and coal ash monitoring wells are down gradient wells. Down gradient means downstream, the water is flowing away from the city's drinking water wells. As expected, the monitoring wells show an increase of sulfate above the background levels because the monitoring wells are influenced by in-situ coal ash. The levels in the down gradient monitoring wells are between 72 mg/L and 250 mg/L. Monitoring well (MW) 4 was between 72 and 170 mg/L for sulfate; MW5 was between 130 and 250 mg/L; and MW8 was between 110 and 140 mg/L.

Nonetheless, drinking water protections are applied within the permit pursuant to 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6); and irrigation protections are applied pursuant to 10 CSR 20-7.031(1)(F)4. The permit implements future limits for boron (IRR), sulfate (DWS), and selenium (DWS) in the groundwater. The irrigation standard applied to subsurface water for boron is not a pollutant listed in the federal primary drinking water regulations.

Persons in the Sikeston Area are not Contacting, Absorbing, or Ingesting Pollutants from Outfall #003 at Levels Known to Cause Harm

The commenters hypothesize that Sikeston residents are being exposed to heavy metals, or other contaminants that could lead to cancer, cardiovascular disease, liver damage, lower IQs, or pass through the food chain. The drinking water pathway was explored above. Each additional pathway has a concurrent use assigned, the uses assigned to Ditch #4 (AQL, WBC-B, SCR, HHP, IRR, LWW) were explained above. Of these, the contact, absorption, and ingestion pathways are identified under WBC-B (10 CSR 20-7.031(1)(F)2.A.II.), SCR (10 CSR 20-7.031(1)(F)2.B.), HHP (10 CSR 20-7.031(1)(F)3.), and LWW (10 CSR 20-7.031(1)(F)5.) designations. Missouri WQS for human health (HHP) standards takes ingestion into account, which includes fish consumption; and the WBC use accounts for infrequent ingestion of water. Per 10 CSR 20-7.031(1)(F)2.A, the standards explain that the WBC use accounts for activities involving direct human contact to the point of complete body submergence. The water may be ingested accidentally and certain sensitive body organs, such as the eyes, ears, and the nose, will be exposed to the water. Although the water may be ingested accidentally, it is not intended to be used as a potable supply unless acceptable treatment is applied.

Of the pollutants listed by the commenters above, there are no HHP or WBC listings in 10 CSR 20-7.031 Table A for any pollutant except arsenic. However, as the permit examined the pollutants present in the discharge and applied water-quality based effluent limits where necessary, these contact, adsorption, or ingestion pathway exposure risks are not found in outfall #003 discharge. All of the pollutants with water-quality based effluent limits at outfall #003 (temperature, chlorine, pH, iron, selenium, zinc, and chloride plus sulfate) are based on limits to protect aquatic life (AQL). There are no WBC-B, SCR, HHP, or LWW more stringent than the protection of aquatic life for these parameters that have reasonable potential.

Schedule of Compliance

Regarding the Schedule of Compliance, 10 years is a typical amount of time for a facility to determine how they will comply. Groundwater management is very different than surface discharges, and it takes greater study and evaluations to determine a method of compliance.

Public Involvement

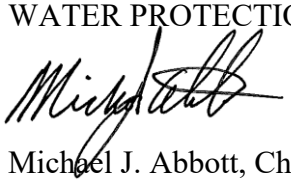
Regarding meaningful public involvement, the draft permit was placed on public notice from April 29, 2022 to May 30, 2022 pursuant to 10 CSR 20-6.020. The draft permit was made available on the Department's website, and was also sent to the local post office and the facility's office to be posted. These actions satisfied the Department's statutory and regulatory obligations, but the Department is voluntarily taking proactive efforts to improve outreach to and access by limited English proficiency communities. The public notice page is available electronically; the web page is here https://dnr.mo.gov/water/what-were-doing/public-notices and updated, usually, each Friday.

The public may also become involved in the development of water quality standards and may also provide comment on stream uses assigned. Water quality standards are reviewed triennially, and the public may participate by utilizing https://dnr.mo.gov/water/what-were-doing/water-planning/quality-standards-impaired-waters-total-maximum-daily-loads/standards/review.

If you have any legal questions concerning this response, please contact the Department's attorney, Joel Reschly, by phone at 573-526-0460 by email at joel.reschly@dnr.mo.gov, or by mail at Department of Natural Resources, General Counsel's Office, P.O. Box 176, Jefferson City, MO 65102-0176. Thank you. Technical questions will be routed to Pam Hackler through our attorney.

Sincerely,

WATER PROTECTION PROGRAM



Michael J. Abbott, Chief
Operating Permits Section

MJA:phv

Enclosure

c: Sarah Rubenstein: srubenstein@greatriverslaw.org
Ethan Thompson: ethompson@greatriverslaw.org
Southeast Regional Office

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.

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	FEE SUBMITTED
JET PAY CONFIRMATION NUMBER	

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

IF YOUR FACILITY IS ELIGIBLE FOR A NO EXPOSURE EXEMPTION:
Fill out the No Exposure Certification Form (Mo 780-2828): https://dnr.mo.gov/forms/780-2828-f.pdf

1. REASON FOR APPLICATION:

☑ a. This facility is now in operation under Missouri State Operating Permit (permit) MO – 0095575, is submitting an application for renewal, and there is no proposed increase in design wastewater flow. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.

☐ b. This facility is now in operation under permit MO – _____, is submitting an application for renewal, and there is a proposed increase in design wastewater flow. Antidegradation Review may be required. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.

☐ c. This is a facility submitting an application for a new permit (for a new facility). Antidegradation Review may be required. New permit fee is required.

☐ d. This facility is now in operation under Missouri State Operating Permit (permit) MO – _____ and is requesting a modification to the permit. Antidegradation Review may be required. Modification fee is required.

2. FACILITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Sikeston Power Station		(573) 471-5000	
ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE
1551 West Wakefield	Sikeston	MO	63801

3. OWNER

NAME		TELEPHONE NUMBER WITH AREA CODE	
Sikeston Board of Municipal Utilities		(573) 471-3328	
EMAIL ADDRESS			
customerservice@sbmu.net			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
P.O. Box 370	Sikeston	MO	63801

4. CONTINUING AUTHORITY

NAME		TELEPHONE NUMBER WITH AREA CODE	
Sikeston Board of Municipal Utilities		(573) 471-3328	
EMAIL ADDRESS			
customerservied@sbmu.net			
ADDRESS (MAILING)	CITY	STATE	ZIP CODE
P.O. Box 370	Sikeston	MO	63801

5. OPERATOR CERTIFICATION

NAME	CERTIFICATE NUMBER	TELEPHONE NUMBER WITH AREA CODE	
ADDRESS (MAILING)	CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE NUMBER WITH AREA CODE
Steve Turnbow	Lab Supervisor	(573 475-3127
E-MAIL ADDRESS		
sbow@sbmu.net		

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

NAME			
Jeff Dewitt Auction Co. Inc.			
ADDRESS	CITY	STATE	ZIP CODE
220 Dewitt Dr.	Sikeston	MO	63801

8. ADDITIONAL FACILITY INFORMATION

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

001 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

002 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

003 NW ¼ SW ¼ Sec 23 T 26N R 13E Scott County
UTM Coordinates Easting (X): _____ Northing (Y): _____

004 ____¼ ____¼ Sec ____ T ____ R ____ ____ County
UTM Coordinates Easting (X): _____ Northing (Y): _____

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

9. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION

A. Is this permit for a manufacturing, commercial, mining, solid/hazardous waste, or silviculture facility? YES ☐ NO ☑
If yes, complete Form C.

B. Is the facility considered a "Primary Industry" under EPA guidelines (40 CFR Part 122, Appendix A) : YES ☑ NO ☐
If yes, complete Forms C and D.

C. Is wastewater land applied? YES ☐ NO ☑
If yes, complete Form I.

D. Are sludge, biosolids, ash, or residuals generated, treated, stored, or land applied? YES ☐ NO ☑
If yes, complete Form R.

E. Have you received or applied for any permit or construction approval under the CWA or any other environmental regulatory authority? YES ☐ NO ☑
If yes, please include a list of all permits or approvals for this facility.

F. Do you use cooling water in your operations at this facility? YES ☑ NO ☐
If yes, please indicate the source of the water: Groundwater supply

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

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

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

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

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

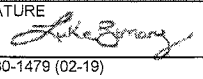
☐ - You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

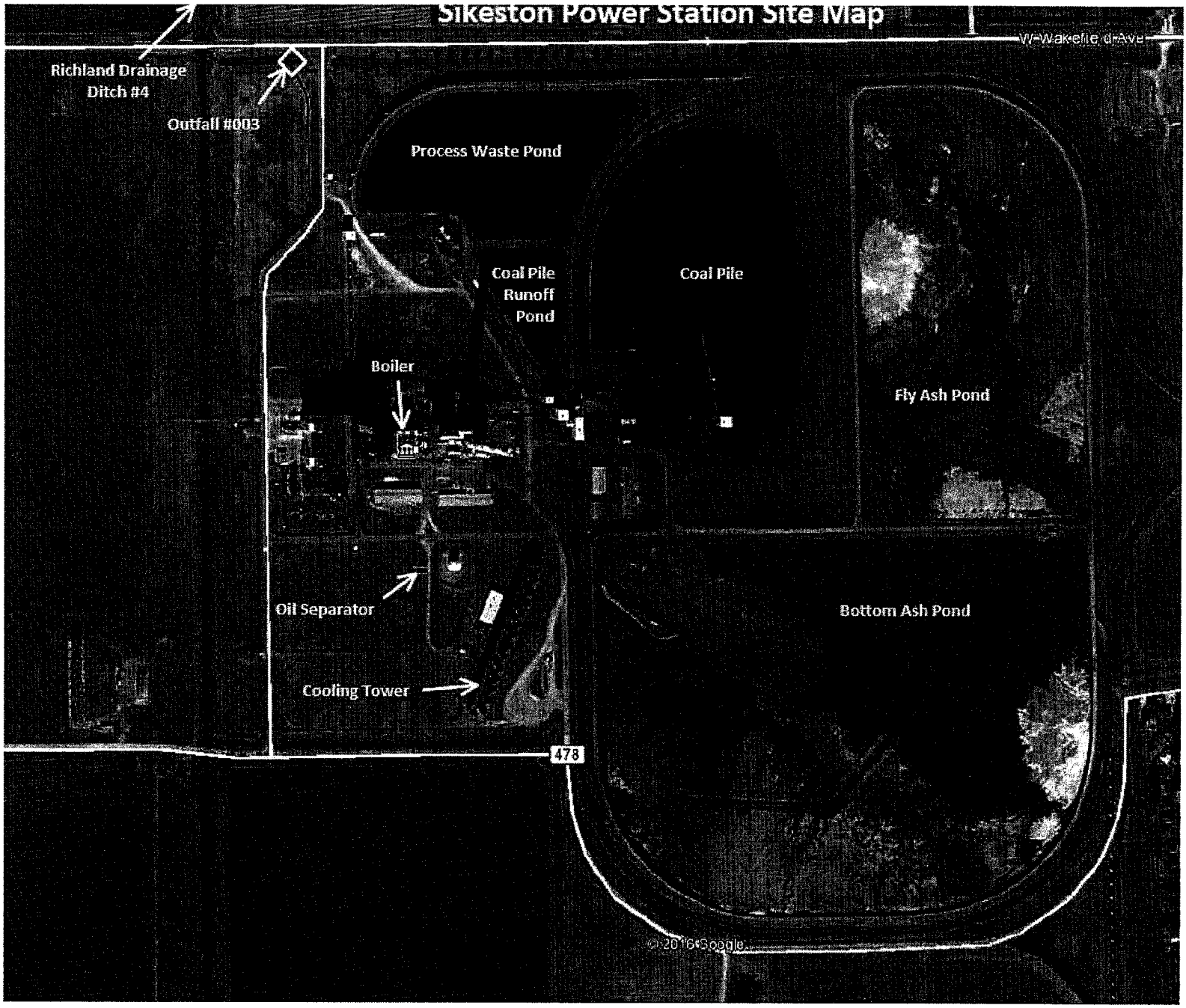
11. FEES

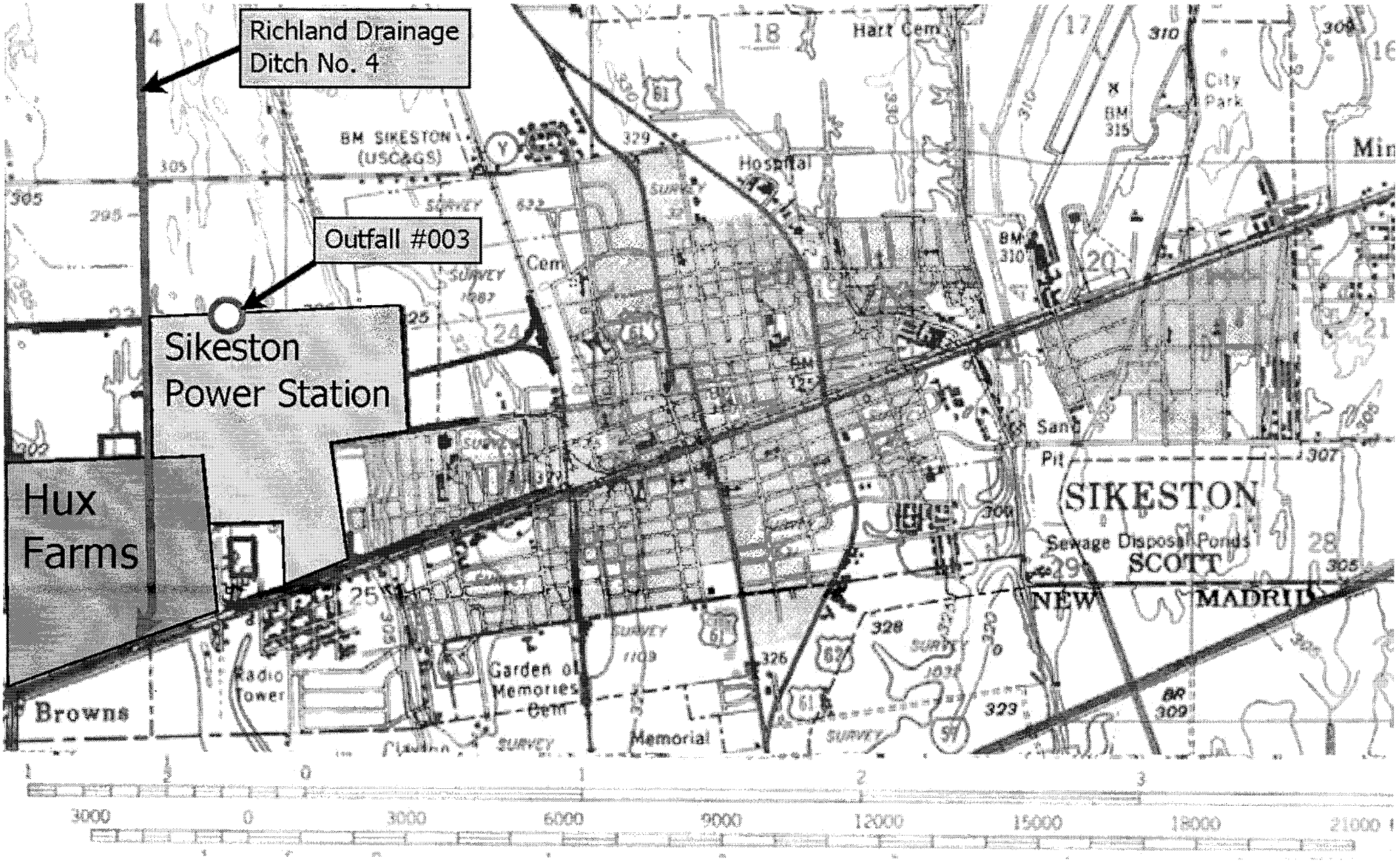
Permit fees may be paid by attaching a check, or online by credit card or eCheck through the JetPay system. Use the URL provided to access JetPay and make an online payment: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/

12. CERTIFICATION

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER WITH AREA CODE
Luke St. Mary, Results Engineer	(573) 475-3119
SIGNATURE 	DATE SIGNED 6-26-2020


Sikeston Power Station Site Map
W Wakefield Ave
Richland Drainage Ditch #4
Outfall #003
Process Waste Pond
Coal Pile Runoff Pond
Coal Pile
Boiler
Fly Ash Pond
Oil Separator
Bottom Ash Pond
Cooling Tower
478
© 2016 Google


Richland Drainage Ditch No. 4
Outfall #003
Sikeston Power Station
Hux Farms
SIKESTON
SCOTT
NEW MADRID
Hart Cem
Hospital
City Park
Sand Pit
Sewage Disposal Ponds
Garden of Memories Cem
Memorial
Radio Tower
Browns
BM SIKESTON (USC&GS)
3000 0 3000 6000 9000 12000 15000 18000 21000