STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

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

Permit No.	MO-0001121
Owner:	The Doe Run Resources Corporation, d/b/a The Doe Run Company
Address:	1801 Park 270 Place, Suite 300, St. Louis, MO 63146
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Doe Run, Glover Smelter
Facility Address:	42850 Highway 49, Annapolis, MO 63620
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

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

FACILITY DESCRIPTION

See Page 2

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

January 1, 2015 — Effective Date
October 28, 2015 — Modification Date

Sara Parker Pauley, Director, Department of Natural Resources

September 30, 2016 — Expiration Date

John Madras, Director, Water Protection Program

FACILITY DESCRIPTION

PERMITTED FEATURE #001 - SIC #3339
Internal monitoring point, discharge from the sanitary waste extended aeration plant. This includes flow from employee hand wash, and respirator wash (categorical flows), and employee showers (non-categorical flow). Wastewater then flows to outfall #003 for metals treatment. Sludge disposal is by contract hauler. Chlorine disinfection.
Design population equivalent is 300. Design flow is 30,000 gallons per day. Average flow is 12,000 gallons per day
Design sludge production is 6.0 dry tons per year.

Legal Description:	SW ¼, Sec. 2, T32N, R3E, Iron County
UTM Coordinates:	X = 704069, Y = 4150800
Receiving Stream:	Scoggins Branch (U)
First Classified Stream and ID:	Big Creek (P) (2916) 303(d) List
USGS Basin & Sub-watershed No.:	(08020202-0301)

OUTFALL #002 – Eliminated
Non-contact cooling water no longer generated.

OUTFALL #003 - SIC #3339
Stormwater, truck wash water, process water, and sanitary water from outfall #001 is captured in a holding basin and then treated in a wastewater plant with a design capacity of 230,400 gallons per day. Total design flow into the storage basin is 650,000 GPD. The treatment consists of the following unit processes: 1. pH adjustment with lime, 2. Sedimentation, 3. Clarification, 4. Filtration, 5. Sludge thickening/dewatering. Filtering and recycling also occur.

Legal Description:	NW ¼, Sec. 11, T32N, R3E, Iron County
UTM Coordinates:	X = 704080, Y = 4150658
Receiving Stream:	Scoggins Branch (U)
First Classified Stream and ID:	Big Creek (P)(2916) 303(d) List
USGS Basin & Sub-watershed No.:	(08020202-0301)

PERMITTED FEATURE #004 - SIC #3339
Downstream monitoring point on Big Creek

Legal Description:	NW ¼, Sec. 11, T32N, R3E, Iron County
UTM Coordinates:	X = 704442, Y = 4149896
First Classified Stream and ID:	Big Creek (P)(2916)Receiving Stream: Big Creek (P)(2916) 303(d) List
USGS Basin & Sub-watershed No.:	(08020202-0301)

PERMITTED FEATURE #005 - SIC #3339
In-stream monitoring: Parshall Flume below Outfalls #001 and #003 in Scoggins Branch
Monitoring to determine combined contributions from facility sources.

Legal Description:	NW ¼, Sec. 11, T32N, R3E, Iron County
UTM Coordinates:	X = 704201, Y = 4150618
Receiving Stream:	Scoggins Branch (U)
First Classified Stream and ID:	Big Creek (P)(2916) 303(d) List
USGS Basin & Sub-watershed No.:	(08020202-0301)

Outfall #006 - SIC #3339
Discharge from this outfall is no longer authorized, and shall be subject to 40 CFR 122.41(m) and reported according to 40 CFR 122.41(m)(3)(i) & (ii).

Legal Description:	NW ¼, Sec. 11, T32N, R3E, Iron County
UTM Coordinates:	X = 704080, Y = 4150658
Receiving Stream:	Scoggins Branch (U)
First Classified Stream and ID:	Big Creek (P)(2916) 303(d) List
USGS Basin & Sub-watershed No.:	(08020202-0301)

PERMITTED FEATURE #SM1
Upstream Monitoring Point on Big Creek

Legal Description:	SW ¼, SW ¼, Sec. 35, T33N, R3E, Iron County
UTM Coordinates:	X = 703949, Y = 4152891
Stream Classification and ID:	Big Creek (P) (2916) 303(d) List
USGS Basin & Sub-watershed No.:	(08020202-0301)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PERMITTED FEATURE #001	TABLE A-1 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **October 28, 2015**, and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

EFFLUENT PARAMETERS	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/quarter	24 hr. total
Biochemical Oxygen Demand$_5$	mg/L	45		30	once/quarter	grab
Total Suspended Solids	mg/L	45		30	once/quarter	grab
Total Suspended Solids	lbs/day	1.467		0.930	once/quarter	grab
E. coli (Note 2)	#/100 ml	630		126	once/quarter	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE JANUARY 28, 2016. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall #003 TABLE A-2

The permittee is authorized to discharge from permitted features with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective **October 28, 2015**, and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	daily	24 hr. total
Precipitation	inches	*		*	daily	24 hr. total
Lead, Total Recoverable	µg/L	20.8		10.4	once/month	grab
Zinc, Total Recoverable	µg/L	121.9		60.8	once/month	grab
Cadmium, Total Recoverable	µg/L	0.9		0.5	once/month	grab
Thallium, Total Recoverable	µg/L	10.3		5.1	once/month	grab
Copper, Total Recoverable	µg/L	14.9		7.4	once/month	grab
Selenium, Total Recoverable	µg/L	8.1		4.0	once/month	grab
Total Suspended Solids	lbs/day mg/L	36.056 30		24.036 20	once/month once/month	grab grab
pH	SU	***		***	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE NEXT REPORT IS DUE NOVEMBER 28, 2015.						
Outfall #003						
Whole Effluent Toxicity (WET) Test	TU_a	1.0 TU_a	(See Special Conditions)		once/quarter****	grab
Total Residual Chlorine	µg/L	*			once/quarter****	grab
Ammonia	mg/L	*			once/quarter****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE JANUARY 28, 2016. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
Permitted Feature(s) #004 & SM1						
pH – Units	SU	*		*	once/quarter****	grab
Hardness	mg/L	*		*	once/quarter****	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter****	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter****	grab
Cadmium, Total Recoverable	µg/L	*		*	once/quarter ****	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter ****	grab
Selenium, Total Recoverable	µg/L	*		*	once/quarter****	grab
Thallium, Total Recoverable	µg/L	*		*	once/quarter ****	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE NEXT REPORT IS DUE JANUARY 28, 2016. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall #005 TABLE A-3

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective **October 28, 2015**, and remain in effect until expiration of the permit. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	MGD	*		*	once/month	24 hr. total
Hardness	mg/L	*		*	once/month	grab
pH - Units	SU	*		*	once/month	grab
Lead, Total Recoverable	µg/L	*		*	once/month	grab
Zinc, Total Recoverable	µg/L	*		*	once/month	grab
Cadmium, Total Recoverable	µg/L	*		*	once/month	grab
Thallium, Total Recoverable	µg/L	*		*	once/month	grab
Selenium, Total Recoverable	µg/L	*		*	once/month	grab
Copper, Total Recoverable	µg/L	*		*	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE NEXT REPORT IS DUE NOVEMBER 28, 2015. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall #006 TABLE A-4

Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b.

EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	Gallons	*		*	twice daily when discharging	Total Volume
Lead, Total Recoverable	µg/L	*		*	once/discharge/day	grab
Zinc, Total Recoverable	µg/L	*		*	once/discharge/day	grab
Cadmium, Total Recoverable	µg/L	*		*	once/discharge/day	grab
Thallium, Total Recoverable	µg/L	*		*	once/discharge/day	grab
Copper, Total Recoverable	µg/L	*		*	once/discharge/day	grab
Selenium, Total Recoverable	µg/L	*		*	once/discharge/day	grab
Total Suspended Solids	lbs/day	*		*	once/discharge/day	grab
Total Suspended Solids	mg/L	*		*	once/discharge/day	grab
pH	SU	*		*	once/discharge/day	grab

TEST RESULTS ARE DUE ON THE 28TH DAY OF THE FOLLOWING MONTH AFTER CESSATION OF THE DISCHARGE.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

* Monitoring requirement only.
** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.
*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 7.5-9.0 pH units.
**** See table below for quarterly sampling

Quarterly Minimum Sampling Requirements			
Quarter	**Months**	**Effluent Parameters**	**Report is Due**
First	January, February, March	Sample at least once during any month of the quarter	April 28th
Second	April, May, June	Sample at least once during any month of the quarter	July 28th
Third	July, August, September	Sample at least once during any month of the quarter	October 28th
Fourth	October, November, December	Sample at least once during any month of the quarter	January 28th

Note 1 - This permit contains a Total Residual Chlorine (TRC) limit.

(a) This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved CLTRC methods. The Department has determined the current acceptable 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 permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 130 µg/L will be considered violations of the permit and values less than the minimum quantification level of 130 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of chlorine in excess of the effluent limits stated in the permit.

(b) Disinfection is required year-round unless the permit specifically states that "Final limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31." If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.

(c) Do not chemically dechlorinate **if it is not needed to meet the limits in your permit.**

(d) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as "0 µg/L" TRC.

Note 2 - Effluent limitations and monitoring requirements for *E. coli* are applicable only during the recreational season from April 1 through October 31. The Monthly Average Limit for *E. coli* is expressed as a geometric mean. The Weekly Average for *E. coli* will be expressed as a geometric mean if more than one (1) sample is collected during a calendar week (Sunday through Saturday).

B. 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 PART III STANDARD CONDITIONS dated MARCH 1, 2014, and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.
   (d) If monitoring data indicates that water quality standards are being exceeded at water quality monitoring point #004 or Outfall #005, this permit may be reopened and modified to establish limits to protect water quality at any of the above points.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

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

C. SPECIAL CONDITIONS (CONTINUED)

3. Changes in Discharges of Toxic Substances
   The permittee shall notify the Director as soon as it knows or has reason to believe:
   (a) That any activity has occurred or will occur which would result in the discharge 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; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

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

5. Reporting of Non-Detects:
   a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
   b) The permittee shall not report a sample result as "Non-Detect" without also reporting the detection limit of the test. Reporting as "Non Detect" without also including the detection limit will be considered failure to report, which is a violation of this permit.
   c) The permittee shall provide the "Non-Detect" sample result using the less than sign and the minimum detection limit (e.g. <0.1 µg/L).
   d) See Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.

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

7. Because the permittee does not discharge effluent from Outfall #001 and instead pumps that effluent to the stormwater basin for further treatment to remove metals, the permittee must test for Biochemical Oxygen Demand$_5$, Total Suspended Solids, and *E. coli* prior to commingling this effluent with the stormwater.

8. Water Quality Standards
   (a) To the extent required by law, discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
      (3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
      (4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
      (5) There shall be no significant human health hazard from incidental contact with the water;
      (6) There shall be no acute toxicity to livestock or wildlife watering;
      (7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
      (8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

9. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southeast Regional Office.

10. Any sludge removed shall be processed through the smelting process, or the Missouri Department of Natural Resources shall be contacted for approval of the alternate disposal proposal.

C. SPECIAL CONDITIONS (CONTINUED)

11. A Quality Assurance/Quality Control (QA/QC) plan shall be maintained for samples analyzed by the permittee, and QA/QC plans submitted for any other laboratories which will be used to fulfill monitoring requirements.

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

13. The permittee shall implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the department unless specifically requested. The SWPPP must be reviewed and updated, if needed, every five (5) years or as site conditions change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document: Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (Document number EPA 833-B-09-002) published by the United States Environmental Protection Agency (USEPA) in February 2009.
    The SWPPP must include the following:
    1. A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter stormwater. The BMPs at the facility should be designed to meet this value during rainfall event up to the 10 year, 24 hour rain event.
    2. The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include weather information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Deficiencies must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report, including photographs. Any corrective measure that necessitates major construction may also need a construction permit. 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.
    3. A provision for designating an individual to be responsible for environmental matters.
    4. A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the department.

14. This permit establishes final ammonia limitations based on Missouri's current Water Quality Standard. On August 22, 2013, the U.S. Environmental Protection Agency (EPA) published a notice in the Federal Register announcing of the final national recommended ambient water quality criteria for protection of aquatic life from the effects of ammonia in freshwater. The EPA's guidance, Final Aquatic Life Ambient Water Quality Criteria for Ammonia – Fresh Water 2013, is not a rule, nor automatically part of a state's water quality standards. States must adopt new ammonia criteria consistent with EPA's published ammonia criteria into their water quality standards that protect the designated uses of the water bodies. The Department of Natural Resources has initiated stakeholder discussions on how to best incorporate these new criteria into the State's rules. A date for when this rule change will occur has not been determined. It is recommended the permittee view the Department's 2013 EPA criteria Factsheet located at http://dnr.mo.gov/pubs/pub2481.htm .

15. Whole Effluent Toxicity (WET) tests shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT					
OUTFALL	AEC	Acute Toxic Unit (TU_a)	FREQUENCY	SAMPLE TYPE	MONTH
003	100%	1.0	once/quarter	grab	Any

Dilution Series						
100% effluent	50% effluent	25% effluent	12.5% effluent	6.25% effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

a) Freshwater Species and Test Methods
    i. Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the fifth edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour static non-renewal toxicity tests with the following vertebrate species:
    ✓ The fathead minnow, *Pimephales promelas* (Acute Toxicity Test Method 2000.0).

C. SPECIAL CONDITIONS (CONTINUED)

And the following invertebrate species:

- ✓ The daphnid, *Ceriodaphnia dubia* (Acute Toxicity Test Method 2002.0).

ii. Chemical and physical analysis of an 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, synthetic laboratory control water may be used.

iii. Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.

iv. Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analysis performed upon any other effluent concentration.

v. All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include: temperature (°C), pH (SU), conductivity (µmohs/cm), dissolved oxygen (mg/L), total residual chlorine (mg/L), un-ionized ammonia (mg/L), total alkalinity (mg/L), total hardness (mg/L), total cadmium (µg/L), total zinc (µg/L), and total lead (µg/L).

b) Reporting of Acute Toxicity Monitoring Results

i. WET test results shall be submitted to the Southeast Regional Office, or by eDMR, with the permittee's Discharge Monitoring Reports quarterly upon permit issuance. The submittal shall include:

1. A full laboratory report for all toxicity testing.
2. Copies of chain-of-custody forms.
3. The WET form provided by the Department upon permit issuance.

ii. The report must include a quantification of acute toxic units ($TU_a = 100/LC_{50}$) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration, 50 Percent (LC_{50}) is the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

c) Acute WET Permit Trigger for Additional Sampling

If the regularly scheduled acute WET test exceeds a TU_a limit specified above, the permittee shall conduct accelerated follow-up WET testing as prescribed in the following conditions. Results of the follow-up accelerated WET testing shall be reported to Southeast Regional Office in TU_a. This permit requires the following additional toxicity testing if any one test result exceeds a TU_a limit.

(1) A multiple dilution test shall be performed for BOTH test species within 60 calendar days of becoming aware that the regularly scheduled WET test exceeded a TU_a limit, and biweekly thereafter until one of the following conditions are met:

1. Three consecutive multiple-dilution tests report TU_a in compliance with the limit. No further tests need to be performed until next regularly scheduled test period.
2. A total of three multiple-dilution tests report TU_a exceeding the limit.

(2) Follow-up tests do not negate an initial test result.

(3) The permittee shall submit a summary of all accelerated WET test results for the test series along with complete copies of the laboratory reports as received from the laboratory within 14 calendar days of the availability of the third test exceeding a TU_a limit.

d) Additionally, the following shall apply upon the exceedance of the TU_a limit in three follow up accelerated WET tests. The permittee should contact the department within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact the department upon the third follow up test exceeding a TU_a limit, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE within 60 calendar days of the date of the automatic trigger or the department's direction to perform either a TIE or TRE. The plan shall be based on EPA Methods and include a schedule for completion. This plan must be approved by the department before the TIE or TRE is begun.

e) Permit Reopener for Acute Toxicity

In accordance with 40 CFR Parts 122 and 124, this permit may be modified to include effluent limitations or permit conditions to address acute toxicity in the effluent or receiving waterbody, as a result of the discharge; or to implement new, revised, or newly interpreted water quality standards applicable to acute toxicity.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF MODIFICATION
OF
MO-0001121
DOE RUN, GLOVER SMELTER

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

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

July 2015

The purpose of the modification is to codify the agreement made in June of 2013 between the department and Doe Run regarding sampling points and frequencies for outfall #001 and #003.

Special condition #7 was edited to include total suspended solids.
The table for outfall #001 was replaced with the correct parameters. Quarterly sampling for flow, biochemical oxygen demand (BOD_5), total suspended solids (TSS; mg/L and pounds per day), and *E. coli*. The facility will no longer sample ammonia and total residual chlorine at outfall #001; these parameters were moved to outfall #003 as monitoring and reporting only. Outfall #001 was reclassified as an internal monitoring point; "Permitted Feature #001".

Outfall #003 effluent limitations for total suspended solids was changed from the domestic wastewater limits [45 mg/L daily maximum/ 30 mg/L monthly average] to the more appropriate effluent limitation guidelines found at 40 CFR 440 Part J [30 mg/L daily maximum/20 mg/L monthly average].

Other minor formatting and typographical errors were corrected.

MODIFICATION COMPLETED JULY 2015 BY:

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0001121
DOE RUN, GLOVER SMELTER

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

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(1)2.] a Factsheet shall be prepared to give pertinent information regarding the applicable regulations, rationale for the development of effluent limitations and conditions, and the public participation process for the Missouri State Operating Permit (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit. This Factsheet is for a Major Facility, Industrial Facility, and involves widespread public interest.

Part I – Facility Information

Facility Type: Primary lead smelter (not in operation)
Facility SIC Code(s): 3339

Facility Description:
The facility includes a smelter [not currently in operation], employee generated domestic wastewater, non-contact cooling water, and stormwater from the smelter grounds and slag piles. Wastewater flows to a holding basin, and is then run through a treatment facility to remove metals. The wastewater treatment facility consists of the following unit processes:

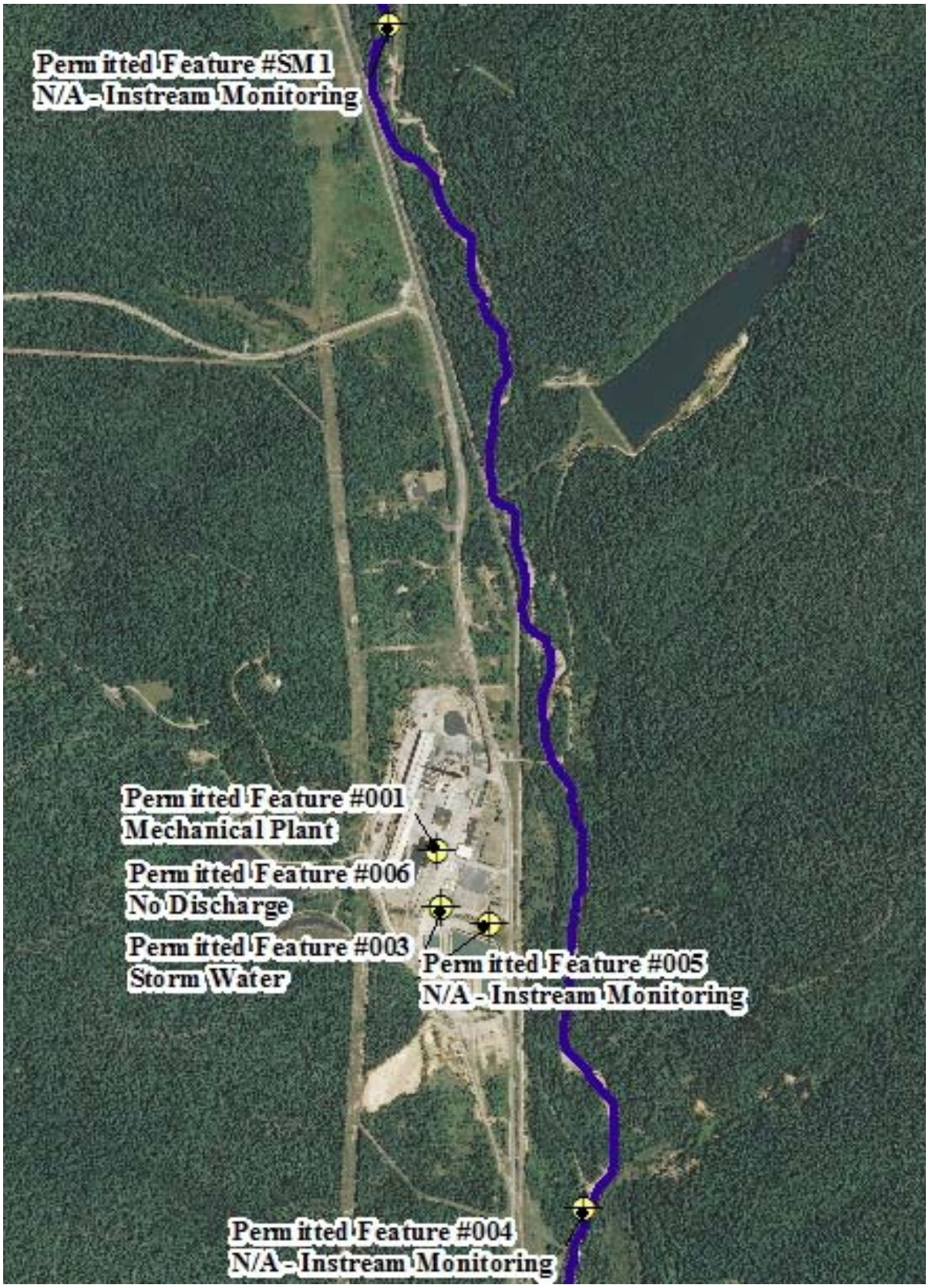
1. pH adjustment with lime
2. Sedimentation
3. Clarification
4. Filtration
5. Sludge thickening/dewatering

Domestic wastewater is first treated in an extended aeration plant before flowing to the holding basin for further treatment. Technology based & water quality based effluent limits for domestic wastewater apply at the internal monitoring point at permitted feature #001. WQBELs for chlorine and ammonia are applied at outfall #001 to ensure the effluent is properly treated before being diluted with stormwater and truck wash water. Outfall #003 is the combined effluent so water quality based effluent limits for metals and categorical limits for pH are applied to the discharge.

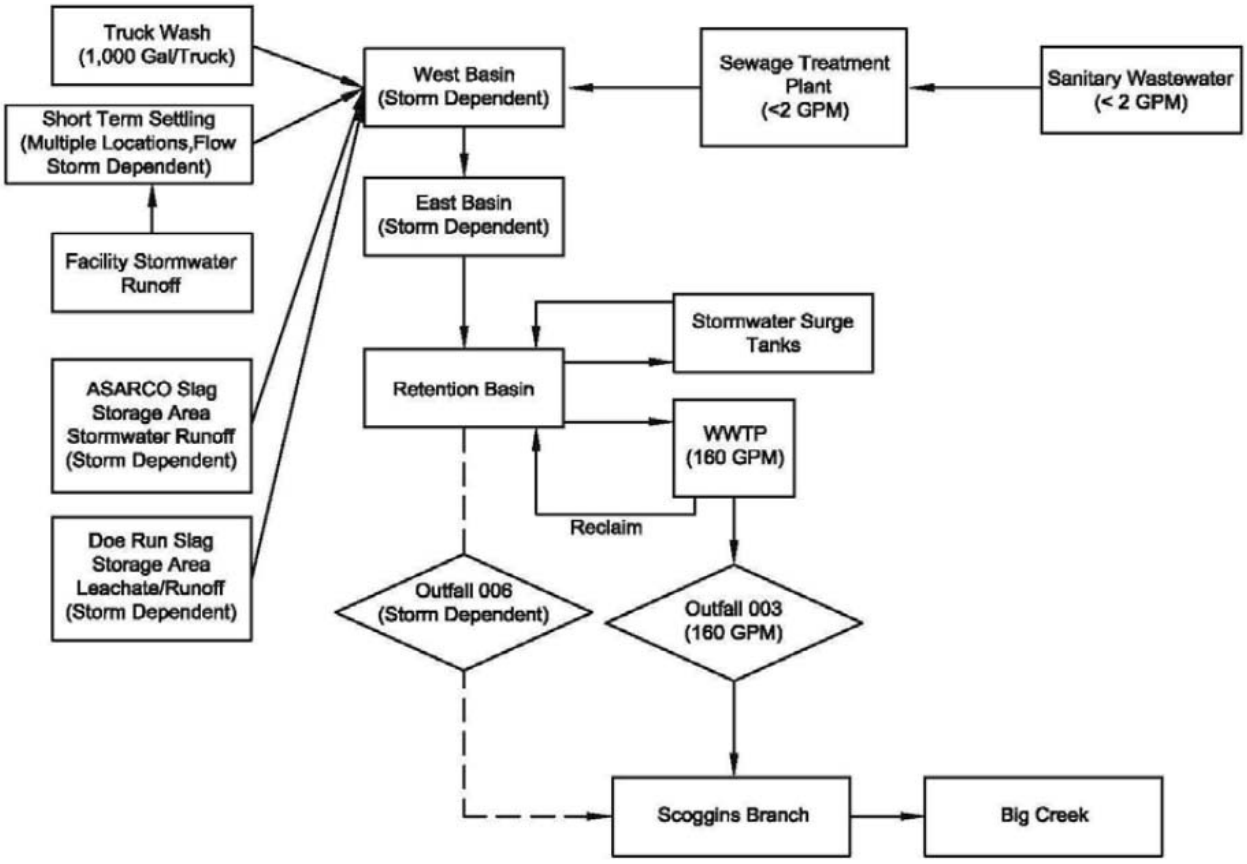
Discharge is not allowed from permitted feature #006. Outfall #006 is an emergency overflow pipe from a retention basin on the Glover site. The retention basin receives both process water and stormwater, and is part of the two stage treatment process for the site. The retention basin provides primary settling of solids and dissolved metals which are then captured in a lime-based physical/chemical water treatment plant (WTP). Flows diverted from the WTP are a diversion that constitutes a bypass as defined in 40 CFR 122.41(m). In extreme wet weather events, the physical capacity of the retention basin could be exceeded, and the treatment capacity of the WTP could also be exceeded. These are the conditions in which wet weather bypasses occur. The bypass should be reported as required in the standard conditions of the NPDES permit and sampled in accordance with section A of the permit.

In December of 2011, the Doe Run Resources Corporation Multi Media Consent Decree (CD) was filed in the U.S. Eastern District Court of Missouri. This CD provides a framework for which the Doe Run Company and the Department of Natural Resources are to work cooperatively henceforth to resolve water quality issues as a result of Doe Run's mineral mining activities. Discharges from Outfall #006 are prohibited by the Consent Decree.

MAP OF GLOVER SMELTER



CONCEPTUAL WATER FLOW SCHEMATIC



PERMITTED FEATURES TABLE:

FEATURE	DESIGN FLOW (GPD)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
#001	30,000	Secondary treatment, then flows to #003	domestic	≈ 0.31
#003	650,000	Metals treatment via pH manipulation, flocculation & sedimentation	process wastewater, truck wash, stormwater	≈ 0.22
#004	precipitation dependent	n/a	downstream monitoring	0.0
#005	precipitation dependent	see above (#001 & #003)	combined monitoring point	≈ 0.14
#006	precipitation dependent	none	emergency discharge	≈ 0.26
#SM1	precipitation dependent	n/a	upstream monitoring point	0.0

Part II – Receiving Stream Information

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:
As per Missouri's Effluent Regulations [10 CSR 20-7.015], the waters of the state are divided into the below listed seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

Missouri or Mississippi River [10 CSR 20-7.015(2)]: ☐
Lake or Reservoir [10 CSR 20-7.015(3)]: ☐
Losing [10 CSR 20-7.015(4)]: ☐
Metropolitan No-Discharge [10 CSR 20-7.015(5)]: ☐
Special Stream [10 CSR 20-7.015(6)]: ☐
Subsurface Water [10 CSR 20-7.015(7)]: ☐
All Other Waters [10 CSR 20-7.015(8)]: ☒

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream's beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	12-DIGIT HUC
Scoggins Branch	U	N.A.	General Criteria	08020202-0301 Upper Big Creek
Big Creek	P	2916	AQL, CLF, LWW, WBC(A), SCR	

* Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL), Cool Water Fishery(CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation (WBC), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

Mixing Zone: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(a)].
Zone of Initial Dilution: Not Allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)]

RECEIVING STREAM MONITORING REQUIREMENTS: In-stream monitoring is required at the following two locations.

Permitted Feature #SM1 (Upstream)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
pH	ONCE/QUARTER	GRAB	Upstream monitoring point on the Big Creek. SW ¼, SW ¼, Sec. 35, T33N, R3E, Iron County UTM: X = 704442, Y = 4149896
Hardness			
Lead, Total Recoverable			
Zinc, Total Recoverable			
Cadmium, Total Recoverable			
Copper, Total Recoverable			
Selenium, Total Recoverable			
Thallium, Total Recoverable			

Permitted Feature #004 (Downstream)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
pH	ONCE/QUARTER	GRAB	Downstream monitoring point on the Big Creek. NW ¼, Sec. 11, T32N, R3E, Iron County UTM: X = 704442, Y = 4149896
Hardness			
Lead, Total Recoverable			
Zinc, Total Recoverable			
Cadmium, Total Recoverable			
Copper, Total Recoverable			
Selenium, Total Recoverable			
Thallium, Total Recoverable			

Part III – Rationale and Derivation of Effluent Limitations & Permit Conditions

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

✓ Not Applicable. The facility does not discharge to a Losing Stream as defined by [10 CSR 20-2.010(36)] & [10 CSR 20-7.031(1)(N)], or is an existing facility.

ANTI-BACKSLIDING:
A provision in the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions.

✓ Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44. Specifically, errors in the previous permit in converting TMDL WLAs to effluent limits for Cadmium and Lead have been corrected in this permit. The WLAs from the TMDL were implemented as acute WLAs, when in fact they are chronic WLAs. The marginally increased monthly average effluent limits will not result in a violation of water quality standards. Daily maximum effluent limits are unchanged.

ANTIDEGRADATION:
In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(2)], the Department is to document by means of Antidegradation Review that the use of a water body's available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

✓ No degradation proposed and no further review necessary.

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.

✓ Applicable; The permittee/facility is currently under enforcement action by the U.S. EPA and the State of Missouri due to violations of the Missouri Clean Water Law and the Federal Clean Water Act. Information regarding this enforcement can be found in the Doe Run Multi-Media Consent Decree filed 12/21/2011; Docket Number 116; Case 4:10-cv-01895-JCH.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, 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.

✓ Not Applicable. This permit does not contain a SOC. Although a SWPPP was not required in the previous permit, a schedule of compliance is not granted because the requirement was initiated in the Consent Decree

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):
In accordance with 40 CFR 122.44(k) *Best Management Practices (BMPs)* to control or abate the discharge of pollutants when: (1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities: (2) Authorized under section 402(p) of the CWA for the control of storm water discharges; (3) Numeric effluent limitations are infeasible; or (4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (Document number EPA 833-B-09-002) [published by the United States Environmental Protection Agency (USEPA) in February 2009], BMPs are measures or practices used to reduce the amount of pollution entering (regarding this operating permit) waters of the state. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Storm Water 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.

✓ Applicable. A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the Department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan. The Consent Decree specifies a SWPPP shall be maintained.

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

✓ Not Applicable. This operating permit is not drafted under premises of a petition for variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

✓ Applicable. Wasteload allocations were calculated where applicable using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (EPA/505/2-90-001, Section 4.5.5)

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

Chronic wasteload allocations 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). Acute wasteload allocations 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). Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Number of Samples "n":
Additionally, in accordance with the TSD for water quality-based permitting, effluent quality is determined by the underlying distribution of daily values, which is determined by the Long Term Average (LTA) associated with a particular Wasteload Allocation (WLA) and by the Coefficient of Variation (CV) of the effluent concentrations. Increasing or decreasing the monitoring frequency does not affect this underlying distribution or treatment performance, which should be, at a minimum, be targeted to comply with the values dictated by the WLA. Therefore, it is recommended that the actual planned frequency of monitoring normally be used to determine the value of "n" for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for "n" must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is "n = 4" at a minimum. For Total Ammonia as Nitrogen, "n = 30" is used.

WLA MODELING:
There are two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs). If TBELs do not provide adequate protection for the receiving waters, then WQBEL must be used.

✓ Applicable. A WLA study was submitted by Department staff. "Total Maximum Daily Load (TMDL) for Big Creek; Iron County, Missouri" approved 2/17/2006 enumerates several problems with the receiving streams. The USGS has documented elevated levels of cadmium in fish in Big Creek and have determined the Glover smelter to be the sole cause of this pollutant. The department conducted aquatic invertebrate studies which indicated an impairment- especially in mayflies, a group which is especially sensitive to elevated metals levels. The study determined Big Creek use that is impaired is the protection of warm water aquatic life. Additionally, the dissolved metals translator study is not a wasteload allocation study; it adjusts effluent limit calculations based on the previous WLAs. Regardless of the above listed documents, WLAs were given to this facility based on water quality standards.

WATER QUALITY STANDARDS:
Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality. Additionally, [10 CSR 20-7.015(G)] directs permit writers to set specific parameter limitations using best professional judgment when necessary to protect the waters of Missouri.

WHOLE EFFLUENT TOXICITY (WET) TEST:
A WET test is a quantifiable method of determining if a discharge from a facility may be causing toxicity to aquatic life by itself, in combination with or through synergistic responses when mixed with receiving stream water.

✓ Applicable. Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(4)(D),(F),(G),(I)2.A & B are being met. Under [10 CSR 20-6.010(8)(A)4], the Department may require other terms and conditions that it deems necessary to assure compliance with the Clean Water Act and related regulations of the Missouri Clean Water Commission. In addition the following MCWL apply: §§§644.051.3 requires the Department to set permit conditions that comply with the MCWL and CWA; 644.051.4 specifically references toxicity as an item we must consider in writing permits (along with water quality-based effluent limits, pretreatment, etc…); and 644.051.5 is the basic authority to require testing conditions. WET test will be required by ALL facilities meeting the following criteria:

- ☒ Facility is a designated Major.
- ☐ Facility continuously or routinely exceeds its design flow.
- ☐ Facility that exceeds its design population equivalent (PE) for BOD_5 whether or not its design flow is being exceeded.
- ☐ Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- ☒ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- ☒ Facility has Water Quality-Based Effluent Limitations for toxic substances (other than NH_3)
- ☐ Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- ☐ Other – please justify.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are 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 waters that are impaired but not addressed by normal water pollution control programs. A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation.

✓ Applicable. Big Creek is on the 2012 Missouri 303(d) List for Cadmium and Lead in sediment. This facility is considered to be a source of these pollutants. Previously, Big Creek was listed as impaired by this facility for metals. A TMDL was developed by the Missouri Department of Natural Resources to address dissolved cadmium, lead, and zinc, and was approved by U.S. EPA on February 17, 2006. The 2007 operating permit for this facility implemented this TMDL.

Part IV – Effluent Limits Determination, Derivations, and Discussion

Outfall #001

- **Biochemical Oxygen Demand**
  10 CSR 20-7.015(8)(B)1.

- **Total Suspended Solids**
  10 CSR 20-7.015(8)(B)1 & categorical.

- **pH**
  pH shall be maintained in the range from six point five to nine (6.5 – 9) standard units [10 CSR 20-7.015(8)(B)2.].

- **Ammonia as Nitrogen**
  Total Ammonia Nitrogen – Early Life Stages Present criteria apply 10 CSR 20-7.031(4)(B)7.C. & Table B3. Background ammonia as nitrogen for receiving stream is assumed to be = 0.01mg/L.

Season	Temp (^oC)	pH (SU)	Total Ammonia Nitrogen CCC (mg/L)	Total Ammonia Nitrogen CMC (mg/L)
Summer	26	7.8	1.5	12.1
Winter	6	7.8	3.1	12.1

Summer: May 1 – October 31, Winter: November 1 – April 30
$C_e = ((Q_e + Q_s)\ C – (Q_s * C_s))/Q_e$

Summer
Chronic: $C_e = ((0.047 + 0.0)1.5 – (0.0 * 0.01))/ 0.047$ $C_e = 1.5$ mg/L $WLA_c = 1.5$ mg/L
Acute: $C_e = ((0.047 + 0.0)12.1 – (0.0 * 0.01))/ 0.047$ $C_e = 12.1$ mg/L $WLA_a = 12.1$ mg/L
$LTA_c = 1.5(0.780) = 1.2$ mg/L [CV = 0.6, 99th Percentile, 30 day avg.]
$LTA_a = 12.1\ (0.321) = 3.9$ mg/L [CV = 0.6, 99th Percentile]
Use most protective number of LTA_c or LTA_a.
MDL = 1.2(3.11) = **3.7 mg/L** [CV = 0.6, 99th Percentile]
AML = 1.2(1.55) = **1.9 mg/L** [CV = 0.6, 95th Percentile, n = 30]

Winter
Chronic: $C_e = ((0.047 + 0.0)3.1 – (0.0 * 0.01))/ 0.047$ $C_e = 3.1$ mg/L $WLA_c = 3.1$ mg/L
Acute: $C_e = ((0.047 + 0.0)12.1 – (0.0 * 0.01))/ 0.047$ $C_e = 12.2$ mg/L $WLA_a = 12.2$ mg/L
$LTA_c = 3.1(0.780) = 2.4$ mg/L [CV = 0.6, 99th Percentile, n=30]
$LTA_a = 12.2(0.321) = 3.9$ mg/L [CV = 0.6, 99th Percentile]
Use most protective number of LTA_c or LTA_a.
MDL = 2.4(3.11) = **7.5 mg/L** [CV = 0.6, 99th Percentile]
AML = 2.4(1.55) = **3.7 mg/L** [CV = 0.6, 95th Percentile, n = 4]

- ***Escherichia coli (E. coli)***
  Monthly average of 126 per 100 ml as a geometric mean and Daily Maximum of 630 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (A) designated use of the receiving stream, as per 10 CSR 20-7.031(4)(C). An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d).

- **Total Residual Chlorine**
  Warm water acute criteria = 19 µg/L, warm water chronic criteria = 10 µg/L [10 CSR 20-7.031, Table A]. Background = 0.0 mg/L.
  Chronic: $C_e = ((0.047 + 0.0)10 – (0.0 * 0.0))/0.047$ $C_e = 10$ µg/L $WLA_c = 0.10$ µg/L
  Acute: $C_e = ((0.047 + 0.0)19 – (0.0 * 0.0))/0.047$ $C_e = 19$ µg/L $WLA_a = 19$ µg/L
  $LTA_c = 10(0.527) = 5.3$ µg/L [CV = 0.6, 99th Percentile]
  $LTA_a = 19(0.321) = 6.1$ µg/L [CV = 0.6, 99th Percentile]
  Use most protective number of LTA_c or LTA_a.
  MDL = 5.3(3.11) = **16.5 µg/L** [CV = 0.6, 99th Percentile]
  AML = 5.3(1.55) = **8.2 µg/L** [CV = 0.6, 95th Percentile, n = 4]

- **Total Recoverable Metals (Cadmium, Copper, Lead, Thallium, Zinc)**
  Limits for these parameters have been eliminated to eliminate redundancy in testing. Effluent from this outfall flows to outfall

#003 where these metals are being treated and limits are effective prior to entering waters of the state.

- **Total Suspended Solids**

Employee Restrooms
TSS daily maximum Outfall #001
(2820 gal/day)(45 mg/L)(3.785 1/gal)(2.205x10^{-6} lbs/mg) = 1.0591 lbs/day

TSS monthly average Outfall #001
(2820 gal/day)(30mg/L)(3.785 1/gal)(2.205x10^{-6} lbs/mg) = 0.7061 lbs/day

There is also a non-scope effluent mass limit allotment for TSS given for shower water. The flow from the employee showers at 10 gallons/person/day for 125 employees is used in the calculation. Here the allowed concentration values are obtained from Table VII-21, on page 248 of Volume I, of the EPA Final Development Document for Effluent Limitations Guidelines and Standards for the Nonferrous Metals Manufacturing Point Source Category, (non-scope flows) for monthly average and daily maximum for each of the contaminants.

TSS daily maximum Outfall #001
(1250 gal/day)(15 mg/L)(3.785 1/gal)(2.205x10^{-6} lbs/mg) = 0.1565 lbs/day
TSS monthly average Outfall #001
(1250 gal/day)(10 mg/L)(3.785 1/gal)(2.205x10^{-6} lbs/mg) = 0.104324 lbs/day

TSS (categorical allowances) Outfall #001

DAILY MAXIMUM

employee hand wash	(0.000713 x 10^9#) x (135.300 #/10^9#)	= 0.096 #
respirator wash (BPT)	(0.000713 x 10^9#) x (217.300 #/10^9#)	= 0.155 #
employee rest room (from above)		= 1.059 #
employee showers (from above)		= 0.1565 #
TOTAL		= 1.4665 #

MONTHLY AVERAGE

employee hand wash	(0.000713 x 10^9#) x (64.350 #/10^9#)	= 0.046 #
respirator wash (BPT)	(0.000713 x 10^9#) x (103.400 #/10^9#)	= 0.074 #
employee rest room (from above)		= 0.7061 #
employee showers (from above)		= 0.1043 #
TOTAL		= 0.9304 #

Because mass based categorical limits exist for Total Suspended Solids, both the categorical mass based limit and the regulatory technology based concentration limit will appear in the permit. In order to meet the mass based limit the facility must achieve less than the concentration based limit at design flows. Higher volume of discharges must achieve a lower concentration of suspended solids.

Outfall #003

Precipitation
Monitoring only requirement. Measuring the amount of rainfall is necessary to ensure adequate stormwater management exists at the site. Knowing the amount of potential stormwater runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality.

The existing waste load allocations from the TMDL (Cadmium, Lead and Zinc) were developed according to a site specific Dissolved Metals Translator study conducted by the permittee. A WLA for Copper is not included in the TMDL, but was calculated below.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED
CADMIUM, TOTAL RECOVERABLE	µg/L	2,3	0.9		0.5	YES
COPPER, TOTAL RECOVERABLE	µg/L	2,3	14.9		7.4	NO
LEAD, TOTAL RECOVERABLE	µg/L	2,3	20.8		10.4	YES
ZINC, TOTAL RECOVERABLE	µg/L	2,3	121.9		60.8	NO

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits

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). A water hardness of 95 mg/L was used in the previous permit. The permittee provided data indicating that site-specific hardness may be higher (147 mg/L in Big Creek; 213 mg/L in Scoggins Branch), which would allow for slightly higher effluent limitations. However, the permittee met limits established during the previous permit cycle and given the stream impairments associated with this facility's discharge, backsliding is not justified. These values will be retained to conform to federal antibacksliding regulations.

METAL	CONVERSION FACTORS	
	CHRONIC	ACUTE
Cadmium	0.930	
Copper	0.810	0.850
Lead	0.390	
Zinc	0.860	0.920

To calculate the ratio between total and dissolved metals, in-stream hardness data was supplied by the permittee within a dissolved metals translator study. Conversion factors for cadmium, copper, lead, and zinc were obtained from that site-specific study.

The Big Creek TMDL prescribes the following dissolved metal limits:

Metal	TMDL Effluent Concentration (µg/L)
Dissolved Cadmium	0.5
Dissolved Lead	5.0
Dissolved Zinc	213

Water quality based effluent limits are calculated for Copper below.
The dissolved WLAs must be converted to total recoverable forms using the conversion factors above.

- **Cadmium, Total Recoverable**

  Effluent limitations from the previous state operating permit were reevaluated and deemed protective of water quality. During the previous permit cycle the limits were successfully achieved with the treatment technology installed at the facility. The effluent limitations are retained from the previous permit.

  0.5/0.930 = 0.53 µg/L
  LTAc = 0.53(0.527) = 0.3 µg/L [CV = 0.6, 99th Percentile]
  MDL = 0.3(3.11) = 0.9 µg/L
  AML = 0.3(1.55) = 0.5 µg/L

- **Copper, Total Recoverable**

  Protection of Aquatic Life Chronic Criteria = 8.6 µg/L, Acute Criteria = 12.8 µg/L.
  Chronic: 8.6 / 0.810 = 10.6 µg/L Acute: 12.8 / 0.850 = 15.1 µg/L
  Chronic WLA: 10.6 µg/L Acute WLA: 15.1 µg/L
  LTA_c = 10.6 (0.527) = 5.6 µg/L LTA_a = 15.1 (0.321) = **4.8** µg/L [CV = 0.6, 99th Percentile]
  Use most protective number of LTA_c or LTA_a.
  MDL = 4.8 (3.11) = 14.9 µg/L [CV = 0.6, 99th Percentile]
  AML = 4.8 (1.55) = 7.4 µg/L [CV = 0.6, 95th Percentile, n = 4]
  Please see Appendix A for further explanation of this parameter.

- **Lead, Total Recoverable**

  5.0/0.390 = 12.8 µg/L
  LTAc = 12.8(0.527) = 6.7 [CV = 0.6, 99th Percentile]
  MDL = 6.7(3.11) = 20.8
  AML = 6.7(1.55) = 10.4

- **Zinc, Total Recoverable**
  As shown below, the effluent limits prescribed in the TMDL are inacceptable, as they allow a violation of the water quality standard for Zinc in Scoggins Branch. Hence water quality based effluent limits are used in this permit. This is mandated because the resulting effluent limits are more stringent than the TMDL.

  TMDL limits:
  213/0.860 = 247.7 µg/L
  LTAc = 247.7(0.527) = 130.5 [CV = 0.6, 99th Percentile]
  MDL = 130.5(3.11) = 405.9
  AML = 130.5(1.55) = 202.3

  Water Quality Based Effluent Limits
  Protection of Aquatic Life Chronic Criteria = 112 µg/L, Acute Criteria = 112 µg/L.
  Chronic = 112/0.860 = 130 µg/L Acute = 112/0.978 = 122 µg/L
  Chronic WLA: 130 µg/L Acute WLA: 122 µg/L
  LTA_c = 130 (0.527) = 68.5 µg/L LTA_a = 122 (0.321) = **39.2** µg/L [CV = 0.6, 99th Percentile]
  Use most protective number of LTA_c or LTA_a.
  MDL = 39.2 (3.11) = 121.9 µg/L [CV = 0.6, 99th Percentile]
  AML = 39.2 (1.55) = 60.8 µg/L [CV = 0.6, 95th Percentile, n = 4]
  Please see Appendix A for further explanation of this parameter.

Additional TMDL Wasteload Allocations:
Daily Maximum, Dissolved Cadmium 0.001 lbs/day = 0.0022 lbs/day total recoverable Cadmium
Daily Maximum, Dissolved Lead 0.012 lbs/day = 0.0500 lbs/day total recoverable Lead
Daily Maximum, Dissolved Zinc 0.512 lbs/day, however because water quality based effluent limits calculated by Missouri are more stringent, total recoverable limit is 0.2930 lbs/day.

Categorical Limits:
The effluent mass limitations for cadmium, lead, zinc and TSS from the process stormwater*, are calculated using the contaminant values found in Table VII-21. The flow rate used for stormwater runoff was 2.4 million gallons per day. This is based on the treatment plant design flow rate of 200 gallons per minute (0.288 MGD), rather than any specific storm event. [* The process stormwater defined here does not include the stormwater isolated and collected in the area of the plant regulated under the Missouri Hazardous Waste Law.]

Lead daily maximum Outfall #003: $(0.288 \times 10^6$ gal/day)(0.28 mg/L)(3.785 1/gal)$(2.205 \times 10^{-6}$ lbs/mg) = 0.673 lbs/day
Lead monthly average Outfall #003: $(0.288 \times 10^6$ gal/day)(0.11 mg/L)(3.785 1/gal)$(2.205 \times 10^{-6}$ lbs/mg) = 0.264 lbs/day

Zinc daily maximum Outfall #003: $(0.288 \times 10^6$ gal/day)(1.02 mg/L)(3.785 1/gal)$(2.205 \times 10^{-6}$ lbs/mg) = 2.452 lbs/day
Zinc monthly average Outfall #003: $(0.288 \times 10^6$ gal/day)(0.31 mg/L)(3.785 1/gal)$(2.205 \times 10^{-6}$ lbs/mg) = 0.745 lbs/day

Cadmium daily maximum Outfall #003: $(0.288 \times 10^6$ gal/day)(0.20 mg/L)(3.785 1/gal)$(2.205 \times 10^{-6}$ lbs/mg) = 0.481 lbs/day
Cadmium monthly average Outfall #003: $(0.288 \times 10^6$ gal/day)(0.08 mg/L)(3.785 1/gal)$(2.205 \times 10^{-6}$ lbs/mg) = 0.192 lbs/day

Parameter	Categorical Limits lbs/day	TMDL Limits lbs/day
Cadmium	0.481	0.001
Lead	0.673	0.012
Zinc	2.452	0.512

The daily maximum mass based limits for lead, zinc and cadmium at Outfall #003 have been removed and concentration based limits have been maintained. Categorical technology based effluent limits (TBELs) and water quality based effluent limits (WQBELs) were calculated for lead, zinc and cadmium at Outfall #003 and compared on a mass basis. The TBELs were calculated applying best professional judgment because the Effluent Limitations Guideline (ELG) does not specifically address stormwater runoff, which is the primary source of influent to the treatment facility. The WQBELs for lead and cadmium were calculated from the EPA approved TMDL. In the case of zinc, a WQBEL was calculated that was more stringent than the TMDL due to an error in the TMDL. The WQBELs were converted to a mass basis using the design flow rate and compared to the TBELs. The WQBELs are substantially more stringent. Therefore, since the concentration based WQBELs protect water quality and go beyond the requirements in the applicable ELG for TBELs, the concentration based WQBELs were maintained as final effluent limitations and the daily maximum mass based limits were removed.

pH
10 CSR 20-7.031(4)(E) and 10 CSR 20-7.015(9)(G)1 requires discharges from this facility not exceed 9 pH standard units. Categorical limits require discharges not below 7.5 standard units. Therefore the pH limits are set at 7.5-9 standard units.

TSS

Because mass based categorical limits exist for Total Suspended Solids, both the categorical mass based limit and the regulatory technology based concentration limit will appear in the permit. In order to meet the mass based limit the facility must achieve less than the concentration based limit at design flows. Higher volume of discharges must achieve a lower concentration of suspended solids.

TSS daily maximum Outfall #003: $(0.288x10^{6}$ gal/day)(15.0 mg/L)(3.785 1/gal)$(2.205x10^{-6}$ lbs/mg) = 36.054 lbs/day

TSS monthly average Outfall #003: $(0.288x10^{6}$ gal/day)(10.0 mg/L)(3.785 1/gal)$(2.205x10^{-6}$ lbs/mg) = 24.036 lbs/day

WET Test

An acute toxic unit limit of 1.0 applies. Where no mixing is allowed the acute criterion must be met at the end of the pipe. However, when using an LC_{50} as the test endpoint, the acute toxicity test has an upper sensitivity level of 100% effluent, or 1.0 TUa. If less than 50% of the test organisms die at 100% effluent, the true LC_{50} value for the effluent cannot be measured, effectively acting as a detection limit. Therefore, when the allowable effluent concentration is 100% a limit of 1.0 TUa will apply. Whole effluent toxicity testing has been changed from a pass/fail system to Toxic Units. The permit writer has determined that this facility has reasonable potential to cause toxicity in the receiving stream. In addition to factors considered above, best professional judgment dictates a limit be imposed because of failed past tests, and the receiving stream's biological community is impaired.

Sampling Frequency Justification. WET Testing schedules and intervals are established in accordance with the Department's Permit Manual; Section 5.2 *Effluent Limits / WET Testing for Compliance Bio-monitoring.* It is recommended that WET testing be conducted during the period of lowest stream flow.

In-stream monitoring points Permitted Features #004 & #SM1

pH, Hardness, Cadmium, Copper, Lead, Selenium, Thallium, and Zinc

In-stream monitoring is required to verify the facility is not adversely impacting the receiving stream. Parameters are carried over from the existing permit.

Permitted Feature #005

Hardness, Cadmium, Copper, Lead, Selenium, Thallium and Zinc

Monitoring for these parameters is to determine pollutant contributions from this facility to the receiving stream.

Outfall #006

Discharges are not permitted from this outfall. However, if a discharge does occur, sampling must be conducted. See page five of the permit for sampling parameters and reporting requirements.

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:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. This permit will expire on **September 30, 2016** in order to meet the permit synchronization goals.

PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

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

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

The first Public Notice period for this operating permit was from June 21, 2013 to July 22, 2013. EPA requested that the permit be pulled from public notice on July 21, 2013. The reason for their request was to discuss with the Department the Multi-Media Consent Decree between EPA and Doe Run. On December 21, 2011, Doe Run Resources Corporation entered into Federal Consent Decree Case Number 4:10-cv-01895-JCH Doc. #: 116 with United States of America and the State of Missouri. Pursuant to Appendix B of the Consent Decree the Defendants agreed to the no discharge conditions for outfall 006.

The Department received one comment letter during the last public notice from The Doe Run Company. The comments in their letter dated June 18, 2013 are responded to in the order contained in their letter:

Comment 1: The draft permit includes monitoring and effluent limits at outfall 001 for BOD, e-coli, total suspended solids (TSS), pH, total residual chlorine (TRC) and ammonia. We believe only BOD, TSS and e-coli are required at outfall 001. There is no effluent limitation requirement in 10 CSR 20-7.015(8) for ammonia, or TRC. These are water quality based limitations and there is no reasonable potential to exceed the water quality standards for ammonia or TRC at outfall 003 where this water is eventually discharged. Also, pH limits for outfall 003 are more restrictive than those at outfall 001. Therefore, we would ask that pH, ammonia and TRC be deleted from outfall 001.

Response 1: Ammonia and pH are pollutants of concern associated with sanitary wastewater treatment plants. Therefore ammonia and pH will remain in the permit. Since disinfection is with chlorine, Total Residual Chlorine (TRC) will remain in the permit. Regarding pH limits for outfall 003, 10 CSR 20-7.031(4)(E) and 10 CSR 20-7.015(9)(G)1 requires that discharges from this facility not exceed 9 pH standard units. Categorical limits require discharges not below 7.5 standard units. Therefore the pH limits are set at 7.5-9 standard units.

Comment 2: On page 4 of the permit, there are WET testing requirements. There is a reference to "Note 1." However, Note 1 relates to TRC testing. Is this a mistake? Should Note 1 be deleted?

Response 2: Note 1 was corrected to read as Note 3. Note 3 contains the required language for composite sampling.

Comment 3: On page 4 of the permit, under outfall 003, there is a monitoring only requirement for BOD. Since BOD limits are imposed at outfall 001, we suggest the BOD monitoring at outfall 003 be deleted. Likewise, we request that the BOD monitoring requirements for outfall 006, found on page 5 of the permit, be deleted.

Response 3: BOD_5 monitoring will be removed from outfall 003. Outfall 006 has now been changed to a no discharge outfall, therefore there are no monitoring requirements listed for this outfall.

Comment 4: Special Condition 6 found on page 7 of the permit relates to the monitoring requirements for outfall 001 and 003. Since the testing requirements have been clarified in the tables for outfall 001 and 003, special condition 6 is no longer necessary. Furthermore, special condition 6 is a bit confusing and contradictory. For example, one sentence says "the limits for biochemical oxygen demand and e-coli shall be the same as for the effluent had it been discharged for outfalls #001." Since there are monitoring and effluent limits for BOD and e-coli at 001, testing and reporting should not be required at outfall 003. Furthermore, there are no "limits" for BOD or e-coli at 003. The next sentence says "this data must be reported with the discharge monitoring reports for outfall #003." Since the effluent limit tables are now clear, Doe Run will simply report BOD, TSS and e-coli under outfall 001. It would be confusing to continue to report sample results collected at 001 under outfall 003 on the DMR. In conclusion, special condition 6 is confusing and is no longer necessary, and should be deleted.

Response 4: Special Condition 6 has been changed to read:
"Because the permittee does not discharge effluent from Outfall #001 and instead pumps that effluent to the stormwater basin for further treatment to remove metals, the permittee must test for Biochemical Oxygen $Demand_5$ and ***E. coli*** prior to commingling this effluent with the stormwater."

Comment 5: On page 9 of the Fact Sheet, there is an effluent limitation table for cadmium, copper, lead and zinc. We have requested under the "modified" column, all parameters should be entered as "No." However, per our request you have now modified the cadmium and lead limits so therefore, the "Modified" column should report "yes" for these two parameters.

Response 5: Your requested changes have been made to the Fact Sheet.

Comment 6: During an additional permittee review (October 2014), the permittee provided data that indicated site-specific hardness values may be higher than the 95 mg/L established in the previous permit.

Response 6: An increase in hardness could result in an increase in limits that is prohibited by the Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I)] that requires a reissued permit to be as stringent as the previous permit with some exceptions. The permittee demonstrated that the limits were achieved during the previous permit cycle, given the stream impairments associated with this facility, backsliding is not justified.

ADDITIONAL PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

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

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

☒ - The Public Notice period for this operating permit was from October 31, 2014 – December 1, 2014.

DATE OF FACT SHEET: AUGUST 19, 2013/**AMENDED** OCTOBER 15, 2014/ **REVISED** DECEMBER 4, 2014

AMENDMENTS COMPLETED BY:

Pam Hackler, Environmental Specialist
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Water Protection Program – Industrial Permitting Unit
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Appendix A

The facility representative asked the permit writer to show the calculations of the effluent limitations for copper using concurrent stream hardness data. These calculations and limits were not used because they would violate the antibacksliding regulations found in CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I).

Copper, Total Recoverable. Protection of Aquatic Life Chronic Criteria = 12.4 µg/L, Acute Criteria = 27.4 µg/L.

Chronic: 12.4 / 0.810 = 15.4 µg/L — Acute: 27.4 / 0.850 = 32.2 µg/L

Chronic WLA: 15.4 µg/L — Acute WLA: 32.2 µg/L

LTA_c = 15.4 (0.527) = **8.1** µg/L — LTA_a = 32.2 (0.321) = 10.3 µg/L [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 8.1 (3.11) = 25.2 µg/L* [CV = 0.6, 99th Percentile]

AML = 8.1 (1.55) = 12.6 µg/L* [CV = 0.6, 95th Percentile, n = 4]

*The limits from the previous permit (MDL = 14.9 µg/L and AML = 7.4 µg/L) will remain in this permit because the facility met the limits during the previous permit cycle.

The facility representative asked the permit writer to show the calculations of the effluent limitations for zinc using concurrent stream hardness data. These calculations and limits were not used because they would violate the antibacksliding regulations found in CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(I).

Water Quality Based Effluent Limits

Protection of Aquatic Life Chronic Criteria = 163 µg/L, Acute Criteria = 223 µg/L.

Chronic: 163 / 0.860 = 190 µg/L — Acute: 223 / 0.920 = 242 µg/L

Chronic WLA: 190 µg/L — Acute WLA: 242 µg/L

LTA_c = 190 (0.527) = 100.1 µg/L — LTA_a = 242 (0.321) = 77.7 µg/L [CV = 0.6, 99th Percentile]

Use most protective number of LTA_c or LTA_a.

MDL = 77.7 (3.11) = 241.6 µg/L* [CV = 0.6, 99th Percentile]

AML = 77.7 (1.55) = 120.4 µg/L* [CV = 0.6, 95th Percentile, n = 4]

*The limits from the previous permit (MDL = 121.9 µg/L and AML = 60.8 µg/L) will remain in this permit because the facility met the limits during the previous permit cycle.

Because this is a permit amendment, these calculations are provided in the appendix.

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(a)(1);
      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.

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

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

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.
2. These Part III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.
3. Sludge and Biosolids Use and Disposal Practices:
    a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
    b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
    c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
4. Sludge Received from other Facilities:
    a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
    b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge
5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.
6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.
7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Actor under Chapter 644 RSMo.
8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Alternate Limits in the Site Specific Permit.
    Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:
    a. A site specific permit must be obtained for each operating location, including application sites.
    b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.
10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
    a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
    b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.

SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

SECTION E – INCINERATION OF SLUDGE

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

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

    Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.
    a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
    b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.

6. Agricultural and Silvicultural Sites:

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

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

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

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

TABLE 1

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

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

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

TABLE 2

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

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

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

TABLE 3

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

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

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

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

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

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

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

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

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

a. Use best management practices when applying biosolids.
b. Biosolids cannot discharge from the land application site
c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
e. Do not apply more than the agronomic rate of nitrogen needed.
f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil and crop removals unless the nitrogen content of the biosolids does not exceed 50,000 milligrams per kilogram of total nitrogen on a dry weight basis and biosolids application rate is less than two dry tons per acre per year.
    i. PAN can be determined as follows and is in accordance with WQ426
    (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
    [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.

g. Buffer zones are as follows:
    i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;
    ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;
    iii. 150 feet if dwellings;
    iv. 100 feet of wetlands or permanent flowing streams;
    v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.

h. Slope limitation for application sites are as follows;
    i. A slope 0 to 6 percent has no rate limitation
    ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels
    iii. Slopes > 12, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.

j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.

k. Biosolids / sludge applicators must keep detailed records up to five years.

SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.
3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
    a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
    b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
    c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
        i. PAN can be determined as follows:
        (Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor[1]).
        [1] Volatilization factor is 0.7 for surface application and 1 for subsurface application.
4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
    a. Testing for metals or fecal coliform is not required
    b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
    c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above. Allowable PAN loading is 300 pounds/acre.

5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200
7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
    a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
    b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
    c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.
8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.

SECTION I – MONITORING FREQUENCY

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

TABLE 5

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

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

[2] Calculate plant available nitrogen, if biosolids application is more than 2 dry tons per acre per year.

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

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

Note 1: Total solids: A grab sample of sludge shall be tested one per day during land application periods for percent total solids. This data shall be used to calculate the dry tons of sludge applied per acre.

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

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

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

5. Annual Report Contents. The annual report shall include the following:
    a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
    b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
    c. Gallons and % solids data used to calculate the dry ton amounts.
    d. Description of any unusual operating conditions.
    e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
        i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
        ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.

f. Contract Hauler Activities

If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.

g. Land Application Sites:

i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. If biosolids application exceeds 2 dry tons/acre/year, reports biosolids nitrogen results, Plant Available Nitrogen (PAN) in pounds/acre, crop nitrogen requirement.

ii. If the "Low Metals" criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.

iii. Report the method used for compliance with pathogen and vector attraction requirements.

iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM A – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT UNDER MISSOURI CLEAN WATER LAW

FOR AGENCY USE ONLY	
CHECK NUMBER	
DATE RECEIVED	FEE SUBMITTED

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

1. This application is for:
- ☐ An operating permit and antidegradation review public notice
- ☐ A construction permit following an appropriate operating permit and antidegradation review public notice
- ☐ A construction permit and concurrent operating permit and antidegradation review public notice
- ☐ A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- ☐ An operating permit for a new or unpermitted facility — Construction Permit # _____
- ☒ An operating permit renewal: permit # MO- 0001121 — Expiration Date 03/22/2012____
- ☐ An operating permit modification: permit # MO-_____ — Reason: _____

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

2. FACILITY

NAME		TELEPHONE WITH AREA CODE
DOE RUN, GLOVER SMELTER		573/546-7492
		FAX 573/546-4008
ADDRESS (PHYSICAL)	CITY	STATE / ZIP CODE
42850 HIGHWAY 49	ANNAPOLIS	MO 63620

3. OWNER

NAME	E-MAIL ADDRESS	TELEPHONE WITH AREA CODE
THE DOE RUN RESOURCES CORP. D/B/A THE DOE RUN CO.	RKELLER@DOERUN.COM	314/453-7630
		FAX 314/453-7177
ADDRESS (MAILING)	CITY	STATE / ZIP CODE
1801 PARK 270 DRIVE, SUITE 300	ST. LOUIS	MO 63146

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

4. CONTINUING AUTHORITY

NAME		TELEPHONE WITH AREA CODE
THE DOE RUN COMPANY		314/453-7630
		FAX 314/453-7177
ADDRESS (MAILING)	CITY	STATE / ZIP CODE
1801 PARK 270 DRIVE, SUITE 300	ST. LOUIS	MO 63146

5. OPERATOR

NAME	CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE
THE DOE RUN COMPANY		573/546-7492
		FAX 573/546-4008
ADDRESS (MAILING)	CITY	STATE / ZIP CODE
42850 HIGHWAY 49	ANNAPOLIS	MO 63620

6. FACILITY CONTACT

NAME	TITLE	TELEPHONE WITH AREA CODE
CALVIN (RUSTY) KELLER	ENVIRONMENTAL MANAGER, SMELTING DIVISION	636/933-3143
		FAX 636/933-3150

7. ADDITIONAL FACILITY INFORMATION

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

001 _____¼ NW¼ Sec 11 T 32N R 3E IRON County
UTM Coordinates Easting (X): 704068.85 m E Northing (Y): 4150799.62 m N
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 _____¼ NW¼ Sec 11 T 32N R 3E IRON County
UTM Coordinates Easting (X): 704203.31 m E Northing (Y): 4150620.82 m N

003 _____¼ NW¼ Sec 11 T 32N R 3E IRON County
UTM Coordinates Easting (X): 704079.38 m E Northing (Y): 4150658.86 m N

004 _____¼ NW¼ Sec 11 T 32N R 3E IRON County
UTM Coordinates Easting (X): 704442.32 m E Northing (Y): 4149896.10 m N

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.
001 – SIC 3339 and NAICS _____ 002 – SIC _____ and NAICS _____
003 – SIC _____ and NAICS _____ 004 – SIC _____ and NAICS _____

MO 780-1479 (01-09)

005 __1/4 NW 1/4 Sec 11 T32N R3E IRON County
006 __1/4 NW 1/4 Sec 11 T32N R3E IRON County

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

A.	Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).	YES ☒	NO ☐
B.	Is your facility considered a "Primary Industry" under EPA guidelines: If yes, complete Forms C and D.	YES ☒	NO ☐
C.	Is application for storm water discharges only? If yes, complete EPA Form 2F.	YES ☐	NO ☒
D.	Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.		
E.	Is wastewater land applied? If yes, complete Form I.	YES ☐	NO ☒
F.	Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? If yes, complete Form R.	YES ☐	NO ☒

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

NAME			
ROBERT PRICE			
ADDRESS	**CITY**	**STATE**	**ZIP CODE**
13910 INVECTA DRIVE	FLORISSANT	MO	63034

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE WITH AREA CODE
CALVIN (RUSTY) KELLER, ENVIRONMENTAL MANAGER, SMELTING DIVISION	636/933-3143
SIGNATURE Calvin R. Keller	**DATE SIGNED** 9-23-11

MO 780-1479 (01-09)

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

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

HAVE YOU INCLUDED:

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

MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)

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

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

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

1.00 NAME OF FACILITY

The Doe Run Company - Glover Smelter

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

MO-0001121

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

N/A

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

A. FIRST 3339 B. SECOND

C. THIRD D. FOURTH

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION.

OUTFALL NUMBER (LIST) ____ ¼ ____ ¼ SEC ____ T ____ R ____ ____ County

001, 003, 005, 006 - NW 1/4, Sec. 11, T 32N R 3E, Iron County

004 - Near Center 1/4, Sec. 11, T 32N, R 3E, Iron County

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER.

OUTFALL NUMBER (LIST)	RECEIVING WATER
001 - Scoggins Branch	002 - Scoggins Branch (Closed)
003 - Scoggins Branch	004 - Big Creek (Instream monitoring)
005 - Scoggins Branch (Instream monitoring)	006 - Scoggins Branch
	S1 - Big Creek (Instream monitoring)

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS:

Primary lead smelter and refining facility capable of producing refined lead from an ore concentrate (Inactive).

2.40

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

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

1. OUTFALL NO.	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT	
(LIST)	A. OPERATION (LIST)	B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)	A. DESCRIPTION	B. LIST CODES FROM TABLE A
001	Sanitary Waste	12,000-30,000 GPD	Aeration	5-A
	Water			
002	Non Contact Cooling	Closed		
	Water			
003	Stormwater	1.3 MGD	Lime	2-C
	runoff and truck	Per 1" Rainfall	Treatment	
	wash water		Sodium Polish	2-C
		Design capacity:	Settling	1-G, 1-U
		275,000-650,000 GPD	Filter	1-Q, 5-R
			Neutralization	2-K
			Recycle or	4-C
			Discharge	4-A
004	Big Creek -	Flow dependent on	N/A	N/A
	Instream monitoring	precipitation		
005	Scoggins Branch -	Flow dependent on	N/A	N/A
	Instream monitoring	precipitation		
006	Overflow Spillway	Flow dependent on	Settling	1-U
	into Scoggins Branch	precipitation		

2.40 CONTINUED

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

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

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

2.50 MAXIMUM PRODUCTION

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

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

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

☒ **YES** *(COMPLETE C.)* ☐ **NO** *(GO TO SECTION 2.60)*

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

1. MAXIMUM QUANTITY			2. AFFECTED OUTFALLS *(list outfall numbers)*
A. QUANTITY PER DAY	B. UNITS OF MEASURE	C. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	
Inactive			
When operating:			
713,425.0	Pounds	Lead (Pb) Bullion	003
232,857.0	Pounds	Granulated Slag	003

2.60 IMPROVEMENTS

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

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

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
				A. REQUIRED	B. PROJECTED
N/A					

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

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

3.00 INTAKE AND EFFLUENT CHARACTERISTICS

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

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

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
None expected,			
pending results of			
priority pollutant scan			

3.10 BIOLOGICAL TOXICITY TESTING DATA

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

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

Fathead Minnow - Acute - Condition 12 of Permit No. MO-0001121

Ceriodaphnia Dubia - Acute - Condition 12 of Permit No. MO-0001121

3.20 CONTRACT ANALYSIS INFORMATION

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

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

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
AECOM	4303 West LaPorte Fort Collins, CO 80521	(970) 416-0916	WET Test
Pace Analytical Services	9608 Loiret Blvd. Lenexa, KS 66219	(913) 599-5665	BOD Metals See Form D
Pace Analytical Services	808 W. McKay Street Frontenac, KS 66736	(620) 235-0003	Fecal WET Test

3.30 CERTIFICATION

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	TELEPHONE NUMBER (AREA CODE AND NUMBER
Rusty Keller, Environmental Manager	(636) 933-3143
SIGNATURE (SEE INSTRUCTIONS) Cody R. Keller	DATE SIGNED 9-23-11

MISSOURI DEPATMENT OF NATURAL RESOUCRES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)
FORM D – APPLICATION FOR DISCHARGE PERMIT – PRIMARY INDUSTRIES

FOR AGENCY USE ONLY	
CHECK NO.	
DATE RECEIVED	FEE SUBMITTED

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

1.00 NAME OF FACILITY

DOE RUN, GLOVER SMELTER

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

MO - 0001121

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

N/A

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

INDUSTRY CATEGORY

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

APPLICATION FOR DISCHARGE PERMIT
FORM D – PRIMARY INDUSTRIES

TABLE II	
NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
MO-0001121	001

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

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TESTING REQUIRED	B. BELIEVED PRESENT	C. BELIEVED ABSENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANALYSES	A. CONCENTRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-9)	☒	☐	☐	2.3						1	µG/L				
2M. Arsenic, Total (7440-38-2)	☒	☐	☐	2.6						1	µG/L				
3M. Beryllium, Total (7440-41-7)	☒	☐	☒	ND						1	µG/L				
4M. Cadmium, Total (7440-43-9)	☒	☐	☐	1.4						1	µG/L				
5M. Chromium, Total (7440-47-3)	☒	☐	☐	0.80						1	µG/L				
6M. Copper, Total (7550-50-8)	☒	☐	☐	0.88						1	µG/L				
7M. Lead, Total (7439-97-6)	☒	☐	☐	3.6						1	µG/L				
8M. Mercury, Total (7439-97-6)	☒	☐	☒	ND						1	µG/L				
9M. Nickel, Total (7440-02-0)	☒	☐	☐	2.5						1	µG/L				
10M. Selenium, Total (7782-49-2)	☒	☐	☐	0.44J						1	µG/L				
11M. Silver, Total (7440-22-4)	☒	☐	☒	ND						1	µG/L				
12M. Thallium, Total (7440-28-0)	☒	☐	☐	3.8						1	µG/L				
13M. Zinc, Total (7440-66-6)	☒	☐	☐	16.8						1	µG/L				
14M. Cyanide, Total (57-12-5)	☒	☐	☒	ND						1	MG/L				
15M. Phenols, Total	☒	☐	☒	ND						1	µG/L				
DIOXIN															
2,3,7,8 – Tetra – chlorodibenzo-P-Dioxin (1764-01-6)	☐	☐	☒	**DESCRIBE RESULTS**											

CONTINUED FROM PAGE 3

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

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NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
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1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TEST-ING RE-QUIRED	B. BE-LIEVED PRE-SENT	C. BE-LIEVED AB-SENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANAL-YSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC.MS FRACTION – VOLATILE COMPOUNDS *(continued)*															
22V. Methylene Chloride (75-09-2)	☒	☐	☐	0.90J						1	µG/L				
23V 1,1,2,2 – Tetra-chloroethane (79-34-5)	☒	☐	☒	ND						1	µG/L				
24V. Tetrachloroethylene (127-18-4)	☒	☐	☒	ND						1	µG/L				
25V. Toluene (108-88-3)	☒	☐	☒	ND						1	µG/L				
26V. 1,2 – Trans Dichloroethylene (156-60-5)	☒	☐	☒	ND						1	µG/L				
27V. 1,1,1 – Tri – chloroethane (71-55-6)	☒	☐	☒	ND						1	µG/L				
28V. 1,1,2 – Tri-chloroethane (79-00-5)	☒	☐	☒	ND						1	µG/L				
29V. Trichloro – ethylene (79-01-6)	☒	☐	☒	ND						1	µG/L				
30V. Trichloro – fluoromethane (75-69-4)	☐	☐	☒	ND											
31V. Vinyl Chloride (75-01-4)	☒	☐	☒	ND						1	µG/L				
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2 – Chlorophenol (95-57-8)	☒	☐	☒	ND						1	µG/L				
2A. 2,4 – Dichloro – phenol (120-83-2)	☒	☐	☒	ND						1	µG/L				
3A. 2,4 – Dimethyl – phenol (105-67-9)	☒	☐	☒	ND						1	µG/L				
4A. 4,6 – Dinitro - O-Cresol (534-52-1)	☒	☐	☒	ND						1	µG/L				
5A. 2,4 – Dinitro – phenol (51-28-5)	☒	☐	☒	ND						1	µG/L				
6A. 2-Nitrophenol (88-75-5)	☒	☐	☒	ND						1	µG/L				
7A. 4-Nitrophenol (100-02-7)	☒	☐	☒	ND						1	µG/L				
8A. P – Chloro – M Cresol (59-50-7)	☒	☐	☒	ND						1	µG/L				
9A. Pentachloro – phenol (87-86-5_	☒	☐	☒	ND						1	µG/L				
10A. Phenol (108-952)	☒	☐	☒	ND						1	µG/L				
11A. 2,4,6 – Trichloro-phenol (88-06-2)	☒	☐	☒	ND						1	µG/L				

CONTINUED FROM THE FRONT

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

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NPDES # *(IF ASSIGNED)*	OUTFALL NUMBER
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1. POLLUTANT AND CAS NUMBER *(if available)*	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		
	A. TEST-ING RE-QUIRED	B. BE-LIEVED PRE-SENT	C. BE-LIEVED AB-SENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE *(if available)*		C. LONG TERM AVRG. VALUE *(if available)*		D. NO. OF ANAL-YSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1, 4-Dichlorobenzene (106-46-7)	☒	☐	☒	ND						1	µG/L				
23B. 3, 3'-Dichlorobenzidine (91-94-1)	☒	☐	☒	ND						1	µG/L				
24B. Diethyl Phthalate (84-66-2)	☒	☐	☒	ND						1	µG/L				
25B. Dimethyl Phthalate (131-11-3)	☒	☐	☒	ND						1	µG/L				
26B. Di-N-butyl Phthalate (84-74-2)	☒	☐	☒	ND						1	µG/L				
27B. 2,4-Dinitrotoluene (121-14-2)	☒	☐	☒	ND						1	µG/L				
28B. 2,6-Dinitrotoluene (606-20-2)	☒	☐	☒	ND						1	µG/L				
29B. Di-N-Octyl Phthalate (117-84-0)	☒	☐	☒	ND						1	µG/L				
30B. 1,2-Diphenylhydrazine *(as Azobenzene)* (122-66-7)	☒	☐	☒	ND						1	µG/L				
31B. Fluoranthene (206-44-0)	☒	☐	☒	ND						1	µG/L				
32B. Fluorene (86-73-7)	☒	☐	☒	ND						1	µG/L				
33B. Hexachlorobenzene (87-68-3)	☒	☐	☒	ND						1	µG/L				
34B. Hexachlorobutadiene (87-68-3)	☒	☐	☒	ND						1	µG/L				
35B. Hexachloro-cyclopentadiene (77-47-4)	☒	☐	☒	ND						1	µG/L				
36B. Hexachloroethane (67-72-1)	☒	☐	☒	ND						1	µG/L				
37B. Indeno (1,2,3-c-d) Pyrene (193-39-5)	☒	☐	☒	ND						1	µG/L				
38B. Isophorone (78-59-1)	☒	☐	☒	ND						1	µG/L				
39B. Naphthalene (91-20-3)	☒	☐	☒	ND						1	µG/L				
40B. Nitrobenzene (98-95-3)	☒	☐	☒	ND						1	µG/L				
41B. N-Nitro-sodimethylamine (62-75-9)	☒	☐	☒	ND						1	µG/L				
42B. N-Nitroso N-Propylamine (621-64-7)	☒	☐	☒	ND						1	µG/L				

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

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NPDES # (*IF ASSIGNED*)	OUTFALL NUMBER
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1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	A. TEST-ING RE-QUIRED	B. BE-LIEVED PRE-SENT	C. BE-LIEVED AB-SENT	A. MAXIMUM DAILY VALUE		B. MAXIMUM 30 DAY VALUE (*if available*)		C. LONG TERM AVRG. VALUE (*if available*)		D. NO. OF ANAL-YSES	A. CONCEN-TRATION	B. MASS	A. LONG TERM AVRG. VALUE		B. NO OF ANAL-YSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICISES *(continued)*															
17P. Heptachlor Epoxide (1024-57-3)	☒	☐	☒	ND						1	µG/L				
18P. PCB-1242 (53469-21-9)	☒	☐	☒	ND						1	µG/L				
19P. PBC-1254 (11097-69-1)	☒	☐	☒	ND						1	µG/L				
20P. PCB-1221 (11104-28-2)	☒	☐	☒	ND						1	µG/L				
21P. PCB-1232 (11141-16-5)	☒	☐	☒	ND						1	µG/L				
22P. PCB-1248 (12672-29-6)	☒	☐	☒	ND						1	µG/L				
23P. PCB-1260 (11096-82-5)	☒	☐	☒	ND						1	µG/L				
24P. PCB-1016 (12674-11-2)	☒	☐	☒	ND						1	µG/L				
25P. Toxaphene (8001-35-2)	☒	☐	☒	ND						1	µG/L				

2.00 POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

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

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

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

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

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

3.00 CONTRACT ANALYSIS INFORMATION

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

☒ **YES** *(LIST THE NAME, ADDRESS, AND TELEPHONE NUMBER OF, AND ANALYZED BY, EACH SUCH LABORATORY OR FIRM BELOW)*
☐ **NO** *(GO TO SECTION 4.00)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code and number)*	D. POLLUTANTS ANALYZED *(list)*
PACE ANALYTICAL SERVICES, INC.	9608 LOIRET BLVD. LENEXA, KS 66219	(913) 599-5665	ALL

4.00 CERTIFICATION

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)	PHONE NUMBER (AREA CODE AND NUMBER)
CALVIN (RUSTY) KELLER, ENVIRONMENTAL MANAGER	(636) 933-3143
SIGNATURE Calvin R. Keller	DATE SIGNED 10-20-11