

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-0101788

Owner: Nestle Purina PetCare Company
Address: 22450 State Highway Y, Bloomfield, MO 63825

Continuing Authority: Same as above
Address: Same as above

Facility Name: Nestle Purina PetCare Company, Golden Products Division
Facility Address: 22450 State Highway Y, Bloomfield, MO 63825

Legal Description: See following page
UTM Coordinates: See following page

Receiving Stream: See following page
First Classified Stream and ID: See following page
USGS Basin & Sub-watershed No.: See following page

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

FACILITY DESCRIPTION

SIC # 1459, #4952; NAICS #212325
Nestle Purina PetCare Company, Golden Products Division is a pet litter production facility. Primary clay adsorbent material is mined at a separate site approximately 2 miles south of the main production plant under MOG840102. Additional clay types and mine minerals are transported to the site via truck and rail. Domestic wastewater is managed by sending to an onsite treatment plant and discharged to waters of the state. Discharge of process wastewater is not permitted. Domestic sludge is disposed of by contract hauler. This facility does not require a certified wastewater operator.

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

June 1, 2020
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

May 31, 2025
Expiration Date

Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (CONTINUED)

OUTFALL #001 – Industrial Impacted Stormwater / Treated Domestic – SIC #1459

Settling pond used for treatment.

Legal Description: NW¼, NE¼, Sec.28, T27N, R11E, Stoddard County
UTM Coordinates: X = 244650.10, Y = 4094140.46
Receiving Stream if Discharged: Tributary to Castor River
First Classified Stream and ID: Castor River (P) (3076)
USGS Basin & Sub-watershed No.: Little River Ditches (08020204-0206)
Design Flow: 6.06 MGD
Average Flow: 0.06 MGD

OUTFALL #002 – Internal Domestic Wastewater – SIC #4952

Discharges to Outfall #001. Treatments are extended aeration, flow equalization, clarifier, UV disinfection, aerobic sludge digestion. Sludge disposal is by contract hauler.

Legal Description: NW¼, NE¼, Sec.28, T27N, R11E, Stoddard County
UTM Coordinates: X = 244731.21, Y = 4094436.71
Receiving Stream if Discharged: Tributary to Castor River
First Classified Stream and ID: Castor River (P) (3076)
USGS Basin & Sub-watershed No.: Little River Ditches (08020204-0206)
Design Population Equivalent: 100
Wastewater Flow, Design: 10,000 GPD
Wastewater Flow, Average: 7,382 GPD

OUTFALL #003 – Stormwater – SIC #1459

Legal Description: SW¼, NE¼, Sec.28, T27N, R11E, Stoddard County
UTM Coordinates: X = 244452.91, Y = 4094133.16
Receiving Stream if Discharged: Tributary to Castor River
First Classified Stream and ID: Castor River (P) (3076)
USGS Basin & Sub-watershed No.: Little River Ditches (08020204-0206)
Maximum Flow: 5.5 MGD based on a 10 Yr 24 hr storm event

OUTFALL #004 – Stormwater – SIC #1459

Legal Description: NW¼, NE¼, Sec.28, T27N, R11E, Stoddard County
UTM Coordinates: X = 244736.56, Y = 4094415.10
Receiving Stream if Discharged: Tributary to Castor River
First Classified Stream and ID: Castor River (P) (3076)
USGS Basin & Sub-watershed No.: Little River Ditches (08020204-0206)
Maximum Flow: 0.65 MGD based on a 10 Yr 24 hr storm event

OUTFALL #005 – Stormwater – SIC #1459

This is an inactive and reclaimed surface mine site

Legal Description: NE¼, SW¼, Sec.21, T27N, R11E, Stoddard County
UTM Coordinates: X = 244483.27, Y = 4095297.63
Receiving Stream if Discharged: 100K-Extent Remaining Stream (C) (3960)
First Classified Stream and ID: Ditch #30 (P) (3075)
USGS Basin & Sub-watershed No.: Little River Ditches (08020204-0207)
Maximum Flow: 4.2 MGD based on a 10 Yr 24 hr storm event

OUTFALL #006 – Stormwater – SIC #1459

Legal Description: NW¼, NE¼, Sec.28, T27N, R11E, Stoddard County
UTM Coordinates: X = 244725.59, Y = 4094388.8
Receiving Stream if Discharged: Tributary to Castor River
First Classified Stream and ID: Castor River (P) (3076)
USGS Basin & Sub-watershed No.: Little River Ditches (08020204-0206)
Maximum Flow: 0.17 MGD based on a 10 Yr 24 hr storm event

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

| OUTFALL #001 <i>Industrial Impacted Stormwater / Treated Domestic</i> | | TABLE A-1 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | |
|--|-----------------|---|----------------|-----------------|-------------------------|--------------|
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on June 1, 2020 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 |
| LIMIT SET: M | | | | | | |
| PHYSICAL | | | | | | |
| Flow | MGD | * | | * | once/month | 24 hr. total |
| CONVENTIONAL | | | | | | |
| Chemical Oxygen Demand | mg/L | * | | * | once/month | grab |
| Oil & Grease | mg/L | 15 | | 10 | once/month | grab |
| pH † | SU | 6.5 to 9.0 | | 6.5 to 9.0 | once/month | grab |
| Settleable Solids | mL/L/hr | 1.5 | | 1.0 | once/month | grab |
| Total Suspended Solids | mg/L | 120 | | 80 | once/month | grab |
| NUTRIENTS | | | | | | |
| Ammonia as N | mg/L | * | | * | once/month | grab |
| Nitrate plus Nitrite | mg/L | * | | * | once/month | grab |
| Nitrogen, Total Kjeldahl (TKN) | mg/L | * | | * | once/month | grab |
| Phosphorus, Total (TP) | mg/L | * | | * | once/month | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>JULY 28, 2020</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |
| LIMIT SET: WA | | | | | | |
| OTHER | | | | | | |
| Whole Effluent Toxicity, Acute See Special Condition #1 | TU _a | * | | * | once/permit cycle | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>ONCE PER PERMIT CYCLE</u> ; THE FIRST REPORT IS DUE <u>NOVEMBER 28, 2024</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

| OUTFALL #002 <i>Domestic Wastewater – Internal</i> | | TABLE A-2 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | |
|--|----------|---|----------------|-----------------|-------------------------|--------------|
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on June 1, 2020 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 |
| LIMIT SET: Q | | | | | | |
| PHYSICAL | | | | | | |
| Flow | MGD | * | - | * | once/quarter ◊ | 24 hr. total |
| CONVENTIONAL | | | | | | |
| Biochemical Oxygen Demand ₅ | mg/L | - | 33 | 22 | once/quarter ◊ | grab |
| <i>E. coli</i> † | #/100 ml | 1,030 | - | 206 | once/quarter ◊ | grab |
| Oil & Grease | mg/L | 15 | - | 10 | once/quarter ◊ | grab |
| pH † | SU | 6.5 to 9.0 | - | 6.5 to 9.0 | once/quarter ◊ | grab |
| Total Suspended Solids | mg/L | - | 33 | 22 | once/quarter ◊ | grab |
| NUTRIENTS | | | | | | |
| Ammonia as N (April 1 – Sept 30) | mg/L | 1.7 | - | 0.6 | once/quarter ◊ | grab |
| Ammonia as N (Oct 1 – March 31) | mg/L | 5.6 | - | 2.1 | once/quarter ◊ | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2020</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

| OUTFALL #003, #004, #005, & #006 <i>Stormwater Only</i> | | TABLE A-3 FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | | | | |
|---|---------|---|-----------------|-------------|----------------------------|-------------|
| The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on June 1, 2020 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 LIMITATIONS | | BENCH-MARKS | MONITORING REQUIREMENTS ** | |
| | | DAILY MAXIMUM | MONTHLY AVERAGE | | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| LIMIT SET: Q | | | | | | |
| PHYSICAL | | | | | | |
| Flow | MGD | * | | - | once/quarter ◊ | 24 Hr Est. |
| Precipitation | inches | * | | - | once/quarter ◊ | measured |
| CONVENTIONAL | | | | | | |
| Chemical Oxygen Demand | mg/L | ** | | 120 | once/quarter ◊ | grab |
| Oil & Grease | mg/L | ** | | 15 | once/quarter ◊ | grab |
| pH † | SU | 6.5 to 9.0 | | - | once/quarter ◊ | grab |
| Settleable Solids | mL/L/hr | ** | | 1.5 | once/quarter ◊ | grab |
| Total Suspended Solids | mg/L | ** | | 120 | once/quarter ◊ | grab |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>OCTOBER 28, 2020</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS. | | | | | | |

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

- * Monitoring and reporting requirement only
- ** Monitoring and reporting requirement with benchmark. See Special Conditions for additional requirements.
- ‡ *E. coli*: final limitations and monitoring requirements 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.
- † pH: the facility will report the minimum and maximum values; pH is not to be averaged.
- ◇ Quarterly sampling

| MINIMUM QUARTERLY SAMPLING REQUIREMENTS | | | | |
|---|--------------------------|--|--|--------------------------|
| QUARTER | MONTHS | <i>E. COLI</i> | ALL OTHER PARAMETERS | REPORT IS DUE |
| First | January, February, March | Not required to sample. | Sample at least once during any month of the quarter | April 28 th |
| Second | April, May, June | Sample at least once during any month of the quarter | Sample at least once during any month of the quarter | July 28 th |
| Third | July, August, September | Sample at least once during any month of the quarter | Sample at least once during any month of the quarter | October 28 th |
| Fourth | October | Sample once during October | Sample at least once during any month of the quarter | January 28 th |
| | November, December | No sample required | | |

B. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Part I and Part III standard conditions dated August 1, 2014 and August 1, 2019, respectively, and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
 - (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
 - The fathead minnow, *Pimephales promelas* (Acute Toxicity EPA Test Method 2000.0).
 - The daphnid, *Ceriodaphnia dubia* (Acute Toxicity EPA Test Method 2002.0).
 - (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
 - (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
 - (d) The laboratory shall not chemically dechlorinate the sample.
 - (e) The Allowable Effluent Concentration (AEC) is 100%; the dilution series is: 6.25%, 12.5%, 25%, 50%, and 100%.
 - (f) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
 - (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of 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 effluent concentration that would cause death in 50 percent of the test organisms at a specific time.
2. Spills, Overflows, and Other Unauthorized Discharges.
 - (a) Any spill, overflow, or other discharge(s) not specifically authorized above are unauthorized discharges.
 - (b) Should an unauthorized discharge cause or permit any contaminants to discharge or enter waters of the state, the unauthorized discharge must be reported to the regional office as soon as practicable but no more than 24 hours after the discovery of the discharge. If the spill or overflow needs to be reported after normal business hours or on the weekend, the facility must call the Department's 24 hour spill line at 573-634-2436.

C. SPECIAL CONDITIONS (CONTINUED)

3. Electronic Discharge Monitoring Report (eDMR) Submission System.
 - (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. Standard Conditions Part I, Section B, #7 indicates the eDMR system is currently the only Department approved reporting method for this permit.
 - (b) Programmatic Reporting Requirements. All reports must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data. After such a system has been made available by the Department, required data shall be directly input into the system by the next report due date
 - (1) Whole Effluent Toxicity (WET) Reports;
 - (2) Any additional report required by the permit excluding bypass reporting.
 - (c) The following shall be submitted electronically after such a system has been made available by the Department:
 - (1) General Permit Applications/Notices of Intent to discharge (NOIs);
 - (2) Notices of Termination (NOTs);
 - (3) No Exposure Certifications (NOEs);
 - (4) Low Erosivity Waivers, and Other Waivers from Stormwater Controls (LEWs); and
 - (5) Bypass reporting, See Special Condition #13 for 24-hr. bypass reporting requirements.
 - (d) Electronic Submission: access the eDMR system via: <https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx>
 - (e) Electronic Reporting Waivers. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the Department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. The Department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period the approved electronic reporting waiver is effective.

4. Stormwater Pollution Prevention Plan (SWPPP).

The facility's SIC code or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) and hence shall implement a Stormwater Pollution Prevention Plan (SWPPP) which must be prepared and implemented upon permit effective date. The SWPPP must be kept on-site and should not be sent to the Department unless specifically requested. The SWPPP must be reviewed and updated annually or if site conditions affecting stormwater change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf The purpose of the SWPPP and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective at preventing pollution [644.016(17)] to waters of the state. Corrective action describes the steps the facility took to eliminate the deficiency.

The SWPPP must include:

 - (a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
 - (b) A map with all outfalls and structural BMPs marked.
 - (c) A schedule for at least once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.
 - i. Operational deficiencies must be corrected within seven (7) calendar days.
 - ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
 - iii. Major structural deficiencies (deficiencies projected to take longer than 14 days to correct) must be reported as an uploaded attachment through the eDMR system with the DMRs. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including proposed timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. If required by the Department, the permittee shall work with the regional office to determine the best course of action. The permittee should consider temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.
 - iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs, and kept with the SWPPP. Additionally, corrective action of major structural deficiencies shall be reported as an uploaded attachment through the eDMR system with the DMRs.
 - v. BMP failure causing discharge through an unregistered outfall is considered an illicit discharge and must be reported in accordance with Standard Conditions Part I.
 - vi. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to Department personnel upon request. Electronic versions of the documents and photographs are acceptable.

C. SPECIAL CONDITIONS (CONTINUED)

- (d) A provision for designating an individual to be responsible for environmental matters and a provision for providing training to all personnel involved in housekeeping, material handling (including but not limited to loading and unloading), storage, and staging of all operational, maintenance, storage, and cleaning areas. Proof of training shall be submitted upon request by the Department.
5. Site-wide minimum Best Management Practices (BMPs). At a minimum, the permittee shall adhere to the following:
- (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, warehouse activities, and other areas, and thereby prevent the contamination of stormwater from these substances.
 - (b) Ensure adequate provisions are provided to protect embankments from erosion.
 - (c) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (d) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater. Spill records should be retained on-site.
 - (e) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (f) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.
6. Stormwater Benchmarks. This permit stipulates pollutant benchmarks applicable to your stormwater discharges.
- (a) The benchmarks do not constitute direct numeric effluent limitations; therefore, a benchmark exceedance alone is not a permit violation. Benchmark monitoring and visual inspections shall be used to determine the overall effectiveness of the SWPPP and to assist you in knowing when additional corrective action may be necessary to protect water quality. If a sample exceeds a benchmark concentration you must review your SWPPP and your BMPs to determine what improvements or additional controls are needed to reduce the pollutant in your stormwater discharge(s).
 - (b) Any time a benchmark exceedance occurs, a Corrective Action Report (CAR) must be completed. A CAR is a document recording the efforts undertaken by the facility to improve BMPs to meet benchmarks in future samples. CARs must be retained with the SWPPP and be available to the Department upon request. If the efforts taken by the facility are not sufficient and subsequent exceedances of a benchmark occur, the facility must contact the Department if a benchmark value cannot be achieved. Failure to take corrective action to address a benchmark exceedance and failure to make measureable progress towards achieving the benchmarks is a permit violation.
7. Petroleum Secondary Containment.
- Before releasing water accumulated in petroleum secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen to protect the general criteria found at 10 CSR 20-7.031(4).
- (a) If odor or sheen is found, the water shall not be discharged without treatment and shall be disposed of in accordance with legally approved methods, such as being sent to an accepting wastewater treatment facility.
 - (b) If the facility wishes to discharge the accumulated stormwater with hydrocarbon odor or presence of sheen, the water shall be treated using an appropriate removal method. Following treatment and before release, the water shall be tested for oil and grease, benzene, toluene, ethylbenzene, and xylene using 40 CFR part 136 methods. All pollutant levels must be below the most protective, applicable standards for the receiving stream, found in 10 CSR 20-7.031 Table A before discharge is authorized. Records of all testing and treatment of water accumulated in secondary containment shall be available on demand to the Department. Electronic records retention is acceptable.
8. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with RSMo 644.051.16, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Clean Water Act Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2), if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, termination, notice of planned changes, or anticipated non-compliance does not stay any permit condition.
9. All outfalls must be clearly marked in the field.
10. Report no discharge when a discharge does not occur during the report period. It is a violation of this permit to report no-discharge when a discharge has occurred.

C. SPECIAL CONDITIONS (CONTINUED)

11. Changes in Discharges of Toxic Pollutant.
In addition to the reporting requirements under 40 CFR 122.41(1), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - (a) That an activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile;
 - (3) Five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol;
 - (4) One milligram per liter (1 mg/L) for antimony;
 - (5) Five (5) times the maximum concentration value reported for the pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or
 - (6) The notification level established by the Department in accordance with 40 CFR 122.44(f).
 - (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
 - (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - (4) The level established by the Director in accordance with 40 CFR 122.44(f).
12. Reporting of Non-Detects.
 - (a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way 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 or the reporting limit of the laboratory. Reporting as “non-detect” without also including the detection/reporting limit will be considered failure to report, which is a violation of this permit.
 - (c) The permittee shall report the non-detect result using the less than “<” symbol and the laboratory’s detection/reporting limit (e.g. <6).
 - (d) See sufficiently sensitive method requirements in Standard Conditions Part I, Section A, #4 regarding proper detection limits used for sample analysis.
 - (e) When calculating monthly averages, one-half of the minimum detection limit (MDL) should be used instead of a zero. Where all data are below the MDL, the “<MDL” shall be reported as indicated in item (C).
13. 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), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southeast Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: <http://dnr.mo.gov/modnrncag/> or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. Once an electronic reporting system compliant with 40 CFR Part 127, the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, is available all bypasses must be reported electronically via the new system. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.
14. Failure to pay fees associated with this permit is a violation of the Missouri Clean Water Law (644.055 RSMo).
15. This permit does not cover land disturbance activities.
16. This permit does not authorize the placement of fill materials in flood plains, placement of solid materials into any waterway, the obstruction of stream flow, or changing the channel of a defined drainage course. The facility must contact the U.S. Army Corps of Engineers (Corps) to determine if a CWA §404 Department of Army permit is required.
17. Renewal Application Requirements.
 - (a) This facility shall submit an appropriate and complete application to the Department no less than 180 days from the expiration date listed on page 1 of the permit.
 - (b) Application materials shall include complete Form A and Form C. If the form names have changed, then the facility should assure they are submitting the correct forms as required by regulation.
 - (c) This facility must submit Form B for the domestic wastewater outfall.

- (d) The facility must sample the stormwater outfalls and provide analysis for every parameter contained in the permit at any outfall at the site in accordance with 10 CSR 20-6.200(2)(C)1.E(I) and (II) on the application.
- (e) The facility may use the electronic submission system to submit the application to the Program, if available.
- (f) This facility must submit all corrective action reports completed for the last permit term if a benchmark exceedance occurred.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0101788
NESTLE PURINA PETCARE COMPANY, GOLDEN PRODUCTS DIVISION

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

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

PART I. FACILITY INFORMATION

Facility Type: Industrial: >1 MGD
SIC Code(s): 1459; 4952
NAICS Code(s): 212325
Application Date: 06/03/2019
Modification Date: 02/01/2018
Expiration Date: 11/30/2019
Last Inspection: 03/11/2019

FACILITY DESCRIPTION:

Nestle Purina PetCare operates a pet litter production plant in Bloomfield, Missouri. The local clay material (montmorillonite) used in the litter production is mined at a separate Nestle Purina-owned facility approximately two miles south of this plant, the main production plant. Powdered sodium bentonite and granulated perlite are transported to the site via truck and rail. Other ingredients that are used for odor control and to create other characteristics of the litter are also transported by truck and rail. All raw materials and additives are stored indoors or in bins with no exposure to stormwater. The raw materials are processed using equipment including dryers, conveyors, elevators, mills, screens, and packaging equipment. Off specification perlite, unused clay and off specification clay litter is placed as fill in MDNR permitted mined land reclamation areas. Dust suppression at the site occurs using clean water. The plant also operates a wastewater treatment facility (WWTP) with a design population equivalent of 100. The wastewater facility is an extended aeration wastewater treatment plant.

The charter number for the continuing authority for this facility is 00007498; this number was verified by the permit writer to be associated with the facility and precisely matches the continuing authority reported by the facility.

In accordance with 40 CFR 122.21(f)(6), the permittee reported other permits currently held by this facility. This facility has the following permits: Land Reclamation Program Permit #552; Water Protection Program NPDES permits –MO-0101788, MO-G840102, MORA13029, and MORA12614; Air Pollution Control Program #012019-007 & #012019-001; Hazardous Waste Permit MOR000001750.

PERMITTED FEATURES TABLE:

| OUTFALL | AVERAGE FLOW | DESIGN FLOW | TREATMENT LEVEL | EFFLUENT TYPE |
|---------|----------------------------|-------------|-------------------------|---|
| #001 | 0.06 MGD | 6.06 MGD | Settling Basin | Industrial Impacted Stormwater/Treated Domestic |
| #002 | 7,382 GPD | 0.010 MGD | Extended Aeration Plant | Domestic Wastewater |
| #003 | Dependent on Precipitation | 5.5 MGD | Settling Basin | Stormwater |
| #004 | Dependent on Precipitation | 0.65 MGD | Direct Discharge | Stormwater |
| #005 | Dependent on Precipitation | 4.2 MGD | Settling Basin | Stormwater |

| | | | | |
|------|----------------------------|----------|------------------|------------|
| #006 | Dependent on Precipitation | 0.17 MGD | Direct Discharge | Stormwater |
|------|----------------------------|----------|------------------|------------|

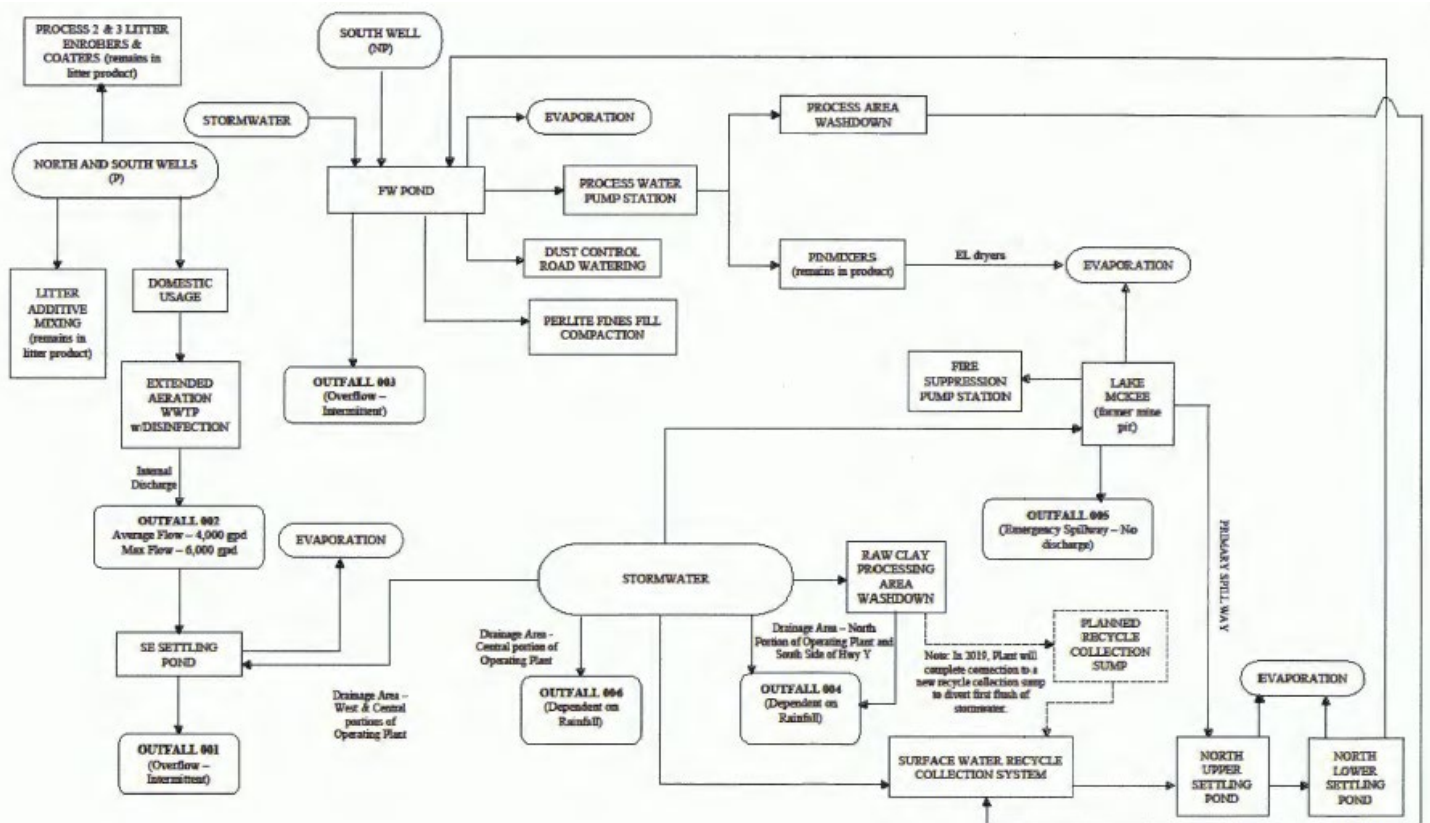
FACILITY PERFORMANCE HISTORY & COMMENTS:

The electronic discharge monitoring reports were reviewed for the last permit term. Exceedances were noted at outfalls #001, #002, and #004. TSS was exceeded twice in 2016 and once in 2019 at outfall #001. Outfall #002 showed exceedances of BOD₅, E. coli, Ammonia, Oil and grease, pH, and TSS. Since the facility upgraded its treatment at Outfall #002, exceedances have been reduced significantly. However, there have still been exceedances of BOD, E. coli, Ammonia, Oil and Grease and TSS at outfall #002. Outfall #004 showed exceedances of Settleable Solids and TSS. The last inspection was conducted on March 11, 2019. The facility was found to be in non-compliance with the Missouri Clean Water Law, the Clean Water Commission Regulations, and their Missouri State Operating Permit. The following unsatisfactory findings were recorded. The facility failed to review and update the Stormwater Pollution Prevention Plan (SWPPP) and failed to provide proof of training of personnel involved in material handling/storage and housekeeping of maintenance and cleaning areas as required in the permit under Part E Special Conditions item 10. Training records were provided to the Department on March 14, 2019. The facility exceeded the pH limit for Outfall #002 during the inspection and also exceeded permit limits for Outfall #002 (E. coli and Ammonia as N) and Outfall #004 (TSS and SS) several times since the modification date of the permit.

FACILITY MAP:



WATER BALANCE DIAGRAM:



PART II. RECEIVING WATERBODY INFORMATION

RECEIVING WATERBODY'S WATER QUALITY:

The receiving waterbody has no relevant water quality data available.

303(D) LIST:

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

✓ Not applicable; this facility does not discharge to an impaired segment of a 303(d) listed stream.

TOTAL MAXIMUM DAILY LOAD (TMDL):

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

✓ Not applicable; this facility does not discharge to a waterbody/watershed with a TMDL.

UPSTREAM OR DOWNSTREAM IMPAIRMENTS:

The permit writer has reviewed upstream and downstream stream segments of this facility for impairments.

✓ The permit writer has noted no upstream or downstream impairments near this facility.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:

Per Missouri's Effluent Regulations [10 CSR 20-7.015(1)(B)], waters of the state are divided into seven categories. This facility is subject to effluent limitations derived on a site specific basis which are presented in each outfall's effluent limitation table and further discussed in Part IV: Effluents Limits Determinations.

✓ All Other Waters

RECEIVING WATERBODY TABLE:

| OUTFALL | WATERBODY NAME | CLASS | WBID | DESIGNATED USES | DISTANCE TO SEGMENT | 12-DIGIT HUC |
|---------|------------------------------|-------|------|--------------------------------|---------------------|--|
| #001 | Tributary to Castor River | N/A | N/A | GEN | 0.0 mi | 08020204-0206 Little River Ditches |
| | Castor River | P | 3076 | ALP, IRR, LWW, SCR, WBC-B, HHP | 0.65 mi | |
| #002 | Tributary to Castor River | N/A | N/A | GEN | 0.0 mi | |
| | Castor River | P | 3076 | ALP, IRR, LWW, SCR, WBC-B, HHP | 0.85 mi | |
| #003 | Tributary to Castor River | N/A | N/A | GEN | 0.0 mi | |
| | Castor River | P | 3076 | ALP, IRR, LWW, SCR, WBC-B, HHP | 0.66 mi | |
| #004 | Tributary to Castor River | N/A | N/A | GEN | 0.0 mi | |
| | Castor River | P | 3076 | ALP, IRR, LWW, SCR, WBC-B, HHP | 0.75 mi | |
| #005 | 100K-Extent Remaining Stream | C | N/A | ALP, IRR, LWW, SCR, WBC-B, HHP | 0.66 mi | |
| | Ditch #30 | P | 3075 | ALP, IRR, LWW, SCR, WBC-B, HHP | 3.3 mi | |
| #006 | Tributary to Castor River | N/A | N/A | GEN | 0.0 mi | |
| | Castor River | P | 3076 | ALP, IRR, LWW, SCR, WBC-B, HHP | 0.81 mi | |

n/a not applicable

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

WBID = Waterbody Identification: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 100K Extant-Remaining Streams or newer; data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use.shp.zip; New C streams described on the dataset per 10 CSR 20-7.031(2)(A)3. as 100K Extent Remaining Streams.

Per 10 CSR 20-7.031, the Department defines the Clean Water Commission's water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and 1st classified receiving stream's beneficial water uses are to be maintained in the receiving streams in accordance with [10 CSR 20-7.031(1)(C)]. Uses which may be found in the receiving streams table, above:

10 CSR 20-7.031(1)(C)1.: **ALP** = Aquatic Life Protection (formerly AQL); current uses are defined to ensure the protection and propagation of fish shellfish and wildlife, further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses ALP effluent limitations in 10 CSR 20-7.031 Table A1-A2 for all habitat designations unless otherwise specified.

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

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

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

WBC-B = whole body contact recreation not supported in WBC-A;

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

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

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

IRR = irrigation for use on crops utilized for human or livestock consumption

LWW = Livestock and Wildlife Watering (current narrative use is defined as LWP = Livestock and Wildlife Protection);

DWS = Drinking Water Supply

IND = industrial water supply

10 CSR 20-7.031(1)(C)8-11.: Wetlands (10 CSR 20-7.031 Tables A1-B3 currently does not have corresponding habitat use criteria for these defined uses): WSA = storm- and flood-water storage and attenuation; WHP = habitat for resident and migratory wildlife species; WRC = recreational, cultural, educational, scientific, and natural aesthetic values and uses; WHC = hydrologic cycle maintenance.

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

RECEIVING WATERBODY MONITORING REQUIREMENTS:

No receiving water monitoring requirements are recommended at this time.

MIXING CONSIDERATIONS:

For all outfalls, mixing zone and zone of initial dilution are not allowed per 10 CSR 20-7.031(5)(A)4.B.(I)(a) and (b), as the base stream flow does not provide dilution to the effluent.

PART III. RATIONALE AND DERIVATION OF PERMIT CONDITIONS

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:

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

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

ANTIBACKSLIDING:

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

- ✓ Limitations in this operating permit for the reissuance conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.
- ✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
 - The previous permit special condition stated: “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.”
The permit writer has determined this special condition was outside the scope of NPDES permitting and was removed.
 - The previous permit special condition indicated spills from hazardous waste substances must be reported to the department. However, this condition is covered under standard conditions therefore was removed from special conditions.

ANTIDEGRADATION REVIEW:

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

- ✓ An antidegradation was completed on outfall #002 in 2017 for expanding design flow to meet the needs of company growth. The antidegradation review found Ammonia, BOD, and TSS require limits. Per 10 CSR 20-7.031(3), the limitations established in the antideg must remain for these parameters unless more stringent limitations are calculated for water quality, TMDL, or technology limitations.

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

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

BEST MANAGEMENT PRACTICES:

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

CHANGES IN DISCHARGES OF TOXIC POLLUTANT:

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

COMPLIANCE AND ENFORCEMENT:

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

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

DOMESTIC WASTEWATER, SLUDGE, AND BIOSOLIDS:

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

- ✓ Applicable; The permittee treats domestic waste onsite using a domestic waste treatment system which is regulated by this permit. See outfall #002 in permit and parameter descriptions below.

Sewage sludge is solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Biosolids are solid materials resulting from domestic wastewater treatment meeting federal and state criteria for productive use (i.e. fertilizer) and after having pathogens removed.

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

- ✓ Applicable, sludge is removed by contract hauler. The permitted management strategy must be followed, see FACILITY DESCRIPTION in the permit. If the described management strategy cannot be followed, the permittee must obtain a permit modification. See Standard Conditions Part III.
- ✓ Standard conditions Part III is incorporated into this permit.

EFFLUENT LIMITATIONS:

Effluent limitations derived and established for this permit are based on current operations of the facility and applied per 10 CSR 20-7.015(9)(A). Any flow through the outfall is considered a discharge and must be sampled and reported as provided in the permit. Future permit action due to facility modification may contain new operating permit terms and conditions which supersede the terms and conditions, including effluent limitations, of this operating permit. Daily maximums and monthly averages are required per 40 CFR 122.45(d)(1) for continuous discharges (not from a POTW).

EFFLUENT LIMITATION GUIDELINE:

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

- ✓ The permit writer reviewed the federal ELGs for Mineral Mining and Process Point Sources, specifically focusing on the clay minerals subcategories, such as Bentonite, Diatomite, Montmorillonite, Perlite and Ball Clay. These subcategories produce wash water only and industrial impacted stormwater.

ELECTRONIC DISCHARGE MONITORING REPORT (EDMR) SUBMISSION SYSTEM:

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

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: <http://dnr.mo.gov/forms/780-2692-f.pdf>. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is not transferable.

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

To assist the facility in entering data into the eDMR system, the permit describes limit sets in each table in Part A of the permit. The data entry personnel should use these identifiers to assure data entry is being completed appropriately.

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

GENERAL CRITERIA CONSIDERATIONS:

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

GROUNDWATER MONITORING:

Groundwater is a water of the state according to RSMo 644.016(27), is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6), and must be protected accordingly.

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

MAJOR WATER USER:

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

- ✓ Applicable; this facility is a major water user and is registered with the state under water user ID 44880277.

OIL/WATER SEPARATORS:

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

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

PRETREATMENT:

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

✓ Not applicable, this facility does not discharge wastewater to a POTW.

REASONABLE POTENTIAL (RP):

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

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

SAMPLING FREQUENCY JUSTIFICATION:

Sampling and reporting frequency was generally retained from previous permit. 40 CFR 122.45(d)(1) indicates all continuous discharges shall be permitted with daily maximum and monthly average limits. Minimum sampling frequency for all parameters is annually per 40 CFR 122.44(i)(2).

Sampling frequency for stormwater-only outfalls is typically quarterly even though BMP inspection occurs monthly. The facility may sample more frequently if additional data is required to determine if best management operations and technology are performing as expected.

SAMPLING TYPE JUSTIFICATION:

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

SCHEDULE OF COMPLIANCE (SOC):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. SOCs are allowed under 40 CFR 122.47 and 10 CSR 20-7.031(11) providing certain conditions are met.

A SOC is not allowed:

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

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

✓ Not applicable; this permit does not contain a SOC. Limits have not become more restrictive.

SPILLS, OVERFLOWS, AND OTHER UNAUTHORIZED DISCHARGE REPORTING:

Per 260.505 RSMo, any emergency involving a hazardous substance must be reported to the Department's 24 hour Environmental Emergency Response hotline at (573) 634-2436 at the earliest practicable moment after discovery. The Department may require the submittal of a written report detailing measures taken to clean up a spill. These reporting requirements apply whether or not the spill results in chemicals or materials leaving the permitted property or reaching waters of the state. This requirement is in addition to the noncompliance reporting requirement found in Standard Conditions Part I. <http://dnr.mo.gov/env/esp/spillbill.htm>

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

SLUDGE – INDUSTRIAL:

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

- ✓ Applicable; sludge is stored in a holding tank and removed by contract hauler. The permitted management strategy must be followed, see permit under FACILITY DESCRIPTION. If the permitted management strategy cannot be followed, the permittee must obtain a permit modification.

STANDARD CONDITIONS:

The standard conditions Part I attached to this permit incorporate all sections of 40 CFR 122.41(a) through (n) by reference as required by law. These conditions, in addition to the conditions enumerated within the standard conditions should be reviewed by the permittee to ascertain compliance with this permit, state regulations, state statues, federal regulations, and the Clean Water Act. Standard Conditions Part III, if attached to this permit, incorporate requirements dealing with domestic wastewater, sludge, and land application.

STORMWATER PERMITTING: LIMITATIONS AND BENCHMARKS:

Because of the fleeting nature of stormwater discharges, the Department, under the direction of EPA guidance, has determined monthly averages are capricious measures of stormwater discharges. The *Technical Support Document for Water Quality Based Toxics Control* (EPA/505/2-90-001; 1991) Section 3.1 indicates most procedures within the document apply only to water quality based approaches, not end-of-pipe technology-based controls. Hence, stormwater-only outfalls will generally only contain a maximum daily limit (MDL), benchmark, or monitoring requirement as dictated by site specific conditions, the BMPs in place, past performance of the facility, and the receiving water's current quality.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute Water Quality Standards (WQSs) are based on one hour of exposure, and must be protected at all times. Therefore, industrial stormwater facilities with toxic contaminants present in the stormwater may have the potential to cause a violation of acute WQSs if toxic contaminants occur in sufficient amounts. In this instance, the permit writer may apply daily maximum limitations.

Conversely, it is unlikely for rainfall to cause a discharge for four continuous days from a facility; if this does occur however, the receiving stream will also likely sustain a significant amount of flow providing dilution. Most chronic WQSs are based on a four-day exposure with some exceptions. Under this scenario, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

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

Numeric benchmark values are based on site specific requirements taking in to account a number of factors but cannot be applied to any process water discharges. First, the technology in place at the site to control pollutant discharges in stormwater is evaluated. The permit writer also evaluates other similar permits for similar activities. A review of the guidance forming the basis of Environmental Protection Agency's (EPA's) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP) may also occur. Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard may also be used. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic

communities in the United States. If a facility has not disclosed BMPs applicable to the pollutants for the site, the permittee may not be eligible for benchmarks.

40 CFR 122.44(b)(1) requires the permit implement the most stringent limitations for each discharge, including industrially exposed stormwater; and 40 CFR 122.44(d)(1)(i) and (iii) requires the permit to include water-quality based effluent limitations where reasonable potential has been found. However, because of the non-continuous nature of stormwater discharges, staff are unable to perform statistical Reasonable Potential Analysis (RPA) under most stormwater discharge scenarios. Reasonable potential determinations (RPDs; see REASONABLE POTENTIAL above) using best professional judgment are performed.

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

BMP inspections typically occur more frequently than sampling. Sampling frequencies are based on the facility's ability to comply with the benchmarks and the requirements of the permit. Inspections should occur after large rain events and any other time an issue is noted; sampling after a benchmark exceedance may need to occur to show the corrective active taken was meaningful.

When a permitted feature or outfall consists of only stormwater, a benchmark may be implemented at the discretion of the permit writer, if there is no RP for water quality excursions.

✓ Applicable, this facility has stormwater-only outfalls where benchmarks or limitations were deemed appropriate contaminant measures.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

In accordance with 40 CFR 122.44(k), Best Management Practices (BMPs) must be used to control or abate the discharge of pollutants when: 1) Authorized under section 304(e) of the Clean Water Act (CWA) for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) Authorized under section 402(p) of the CWA for the control of stormwater discharges; 3) Numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. In accordance with the EPA's *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in 2015 https://www.epa.gov/sites/production/files/2015-11/documents/swppp_guide_industrial_2015.pdf, BMPs are measures or practices used to reduce the amount of pollution entering waters of the state from a permitted facility. BMPs may take the form of a process, activity, or physical structure. Additionally in accordance with the Stormwater Management, a SWPPP is a series of steps and activities to 1) identify sources of pollution or contamination, and 2) select and carry out actions which prevent or control the pollution of storm water discharges. Additional information can be found in *Stormwater Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006; September 1992).

Developing a SWPPP provides opportunities to employ appropriate BMPs to minimize the risk of pollutants being discharged during storm events. The following paragraph outlines the general steps the permittee should take to determine which BMPs will work to achieve the benchmark values or limits in the permit. This section is not intended to be all encompassing or restrict the use of any physical BMP or operational and maintenance procedure assisting in pollution control. Additional steps or revisions to the SWPPP may be required to meet the requirements of the permit.

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

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

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

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

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

SUFFICIENTLY SENSITIVE ANALYTICAL METHODS:

Please review Standard Conditions Part 1, section A, number 4. The analytical and sampling methods used shall conform to the reference methods listed in 10 CSR 20-7.015 and/or 40 CFR 136 unless alternates are approved by the Department. The facility shall use sufficiently sensitive analytical methods for detecting, identifying, and measuring the concentrations of pollutants. The facility shall ensure the selected methods are able to quantify the presence of pollutants in a given discharge at concentrations low enough to determine compliance with Water Quality Standards in 10 CSR 20-7.031 or effluent limitations unless provisions in the permit allow for other alternatives. A method is “sufficiently sensitive” when; 1) the method quantifies the pollutant below the level of the applicable water quality criterion or; 2) the method minimum level is above the applicable water quality criterion, but the amount of pollutant in a facility’s discharge is high enough the method detects and quantifies the level of pollutant in the discharge, or 3) the method has the lowest minimum level of the analytical methods approved under 10 CSR 20-7.015 and or 40 CFR 136. These methods are also required for parameters listed as monitoring only, as the data collected may be used to determine if numeric limitations need to be established. A permittee is responsible for working with their contractors to ensure the analysis performed is sufficiently sensitive. 40 CFR 136 lists the approved methods accepted by the Department. Tables A1-B3 at 10 CSR 20-7.031 shows water quality standards.

UNDERGROUND INJECTION CONTROL (UIC):

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

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

VARIANCE:

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

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

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

As per [10 CSR 20-2.010; definitions], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A). Total Maximum Daily Loads, if required for this facility, were also reviewed.

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

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

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

- ✓ Acute wasteload allocations designated as daily maximum limits (MDL) were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).
- ✓ Chronic wasteload allocations designated as monthly average limits (AML) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ).
- ✓ Number of Samples “n”: 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 assumption which should be, at a minimum, targeted to comply with the values dictated by the WLA. Therefore, it is recommended the actual planned frequency of monitoring be used to determine the value of “n” for calculating the AML. However, in situations where monitoring frequency is once per month or less, a higher value for “n” must be assumed for AML derivation purposes. Thus, the statistical procedure being employed using an assumed number of samples is “n = 4”. For total ammonia as nitrogen, “n = 30” is used.

WASTELOAD ALLOCATION (WLA) MODELING:

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

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

WATER QUALITY STANDARD REVISION:

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

- ✓ This operating permit does not contain requirements for a water quality standard that has changed twenty-five percent or more since the previous operating permit.

PART IV. EFFLUENT LIMITS DETERMINATIONS

OUTFALL #001 – INDUSTRIAL IMPACTED STORMWATER / TREATED DOMESTIC

EFFLUENT LIMITATIONS TABLE:

| PARAMETERS | UNIT | DAILY MAX | MONTHLY AVG. | PREVIOUS PERMIT LIMITS | MINIMUM SAMPLING FREQUENCY | REPORTING FREQUENCY | SAMPLE TYPE |
|--------------------------------|---------|------------|--------------|------------------------|----------------------------|---------------------|-------------|
| PHYSICAL | | | | | | | |
| FLOW | MGD | * | * | SAME | ONCE/MONTH | ONCE/MONTH | 24 Hr. TOT |
| CONVENTIONAL | | | | | | | |
| CHEMICAL OXYGEN DEMAND | mg/L | * | * | SAME | ONCE/MONTH | ONCE/MONTH | GRAB |
| OIL & GREASE | mg/L | 15 | 10 | SAME | ONCE/MONTH | ONCE/MONTH | GRAB |
| pH † | SU | 6.5 TO 9.0 | 6.5 TO 9.0 | SAME | ONCE/MONTH | ONCE/MONTH | GRAB |
| SETTLABLE SOLIDS | mL/L/hr | 1.5 | 1.0 | SAME | ONCE/MONTH | ONCE/MONTH | GRAB |
| TOTAL SUSPENDED SOLIDS (TSS) | mg/L | 120 | 80 | SAME | ONCE/MONTH | ONCE/MONTH | GRAB |
| NUTRIENTS | | | | | | | |
| AMMONIA AS N | mg/L | * | * | NEW | ONCE/MONTH | ONCE/MONTH | GRAB |
| NITRATE PLUS NITRITE AS N | mg/L | * | * | NEW | ONCE/MONTH | ONCE/MONTH | GRAB |
| NITROGEN, TOTAL KJELDAHL (TKN) | mg/L | * | * | NEW | ONCE/MONTH | ONCE/MONTH | GRAB |
| PHOSPHORUS, TOTAL P (TP) | mg/L | * | * | NEW | ONCE/MONTH | ONCE/MONTH | GRAB |
| OTHER | | | | | | | |
| WET TEST - ACUTE | TUa | * | - | SAME | ONCE/PERMIT CYCLE | ONCE/PERMIT CYCLE | GRAB |

* monitoring and reporting requirement only

† report the minimum and maximum pH values; pH is not to be averaged

new parameter not established in previous state operating permit

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

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

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring only, continued from the previous permit. Due to the nature of the discharge being industrial process water associated with clay surface mining, the permittee will continue to be required to monitor for this pollutant. Clay particles or other mineral particles have Anion Exchange Capacity (AEC), which means that they have the potential to adsorb charged particles, such as free oxygen. The permittee will be required to conduct monitoring only. This data will be used to determine if there is reasonable potential to cause impairment to oxygen demand.

Oil & Grease

15 mg/L daily maximum; 10 mg/L monthly average; continued from previous permit. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. The facility reported from 2 mg/L to 5 mg/L. The permit writer completed an RPD on this parameter and determined that the facility has the ability to cause or contribute excursions of the water quality standard. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits.

AQL Chronic: 10 mg/L per 10 CSR 20-7.031 Table A1

Set chronic standard equal to chronic WLA per TSD §5.4.2 (EPA/505/2-90-001); multiply by 1.5 to obtain acute limit.

10 mg/L * 1.5 = 15 mg/L

pH

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

Settleable Solids (SS)

The previous permit required a daily maximum limit of 1.5 mL/L/hr and a monthly average of 1.0 mL/L/hr. These limits will be continued. There is no numeric water quality standard for SS; however, sediment discharges can negatively impact aquatic life. Increased settleable solids are known to interfere with multiple stages of the life cycle in many benthic organisms. For example, they can smother eggs and young or clog the crevasses benthic organisms use for habitat. Settleable solids are also a valuable indicator parameter. Solids monitoring allows the permittee to identify increases in sediment and solids indicating uncontrolled materials leaving the site. The effluent limitations in the previous permit have been reevaluated and found to be protective of the receiving stream. These limits are also consistent with the Department's general permit for clay pits, MO-G84.

Total Suspended Solids (TSS)

Daily maximum limit of 120 mg/L and a monthly average of 80 mg/L. These limits are continued from the previous permit. There was one exceedance of the monthly average at 90 mg/L. There were no other exceedances. There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter and a known pollutant at landfill sites, especially those with composting activities. TSS monitoring allows the permittee to identify increases in TSS indicating uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. Additionally, the ELGs establish limitations for TSS on discharges of other types of surface mining activities. Therefore, the permit writer has used best professional judgment to continue requiring the daily maximum and monthly average limits. These limits are also consistent with the Department's general permit for clay pits, MO-G84.

NUTRIENTS:

Ammonia, Total as Nitrogen

Application materials noted nitrogen present, therefore, therefore monthly monitoring of ammonia is required per 10 CSR-20-7.015(9)(D)8. and 20-7.015(9)(D)8.A./B. as this facility's design flow is equal to or greater than 1 MGD.

Nitrogen, Total Kjeldahl (TKN)

Application materials noted nitrogen present, therefore monitoring is required per 10 CSR 20-7.015(9)(D)8. Monthly monitoring of total Kjeldahl nitrogen is required per 10 CSR 20-7.015(9)(D)8.B. as this facility's design flow is equal to or above 1 MGD.

Nitrate plus Nitrite

Application materials noted nitrogen present, therefore monitoring is required per 10 CSR 20-7.015(9)(D)8. Monthly monitoring of nitrate plus nitrite required per 10 CSR 20-7.015(9)(D)8.B. as this facility's design flow is equal to or above 1 MGD.

Phosphorus, Total P (TP)

Application materials noted phosphorus present, therefore monitoring is required per 10 CSR 20-7.015(9)(D)8. Monthly monitoring of phosphorus is required per 10 CSR 20-7.015(9)(D)8.B. as this facility’s design flow is equal to or above 1 MGD.

Whole Effluent Toxicity (WET) Test

Monitoring is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream. A WET test is a quantifiable method to determine discharges from the facility cause toxicity to aquatic life by itself, in combination with, or through synergistic responses, when mixed with receiving stream water.

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

- ✓ Facility has blended process wastewater and domestic wastewater.

Annual testing is the minimum testing frequency; monitoring requirements promulgated in 40 CFR 122.44(i)(2) state “requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once per year.”

WET, Acute

The permit writer has determined this facility has reasonable potential to cause toxicity in the receiving stream.

WQS: no toxics in toxic amounts [10 CSR 20-7.031(4)(J)2.B.] = 0.3 TUa

Acute WLA: $C_e = ((\#\text{ cfs}_{DF} + \#\text{ cfs}_{ZID7Q10}) 0.3 \text{ TUa} - (\#\text{ cfs}_{ZID7Q10} * 0 \text{ TUa}_{\text{Background}})) \div \#\text{ cfs}_{DF}$
 $C_e = 0.3 \text{ TUa}$ (if no mixing)

LTA_a: 0.3 TUa (0.321) = 0.0963 TUa [CV = 0.6, 99th Percentile]

MDL: 0.0963 TUa (3.11) = 0.3 TUa [CV = 0.6, 99th Percentile]

Where no mixing is allowed the acute criterion must be met at the end of the pipe. However, when using an LC₅₀ 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 LC₅₀ 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. The standard Allowable Effluent Concentration (AEC) for facilities discharging to unclassified, Class C, Class P (with default mixing considerations), or lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] is 100%. The standard dilution series for facilities discharging to waterbodies with no mixing considerations is 100%, 50%, 25%, 12.5%, & 6.25%.

OUTFALL #002 – TREATED DOMESTIC WASTEWATER

EFFLUENT LIMITATIONS TABLE:

| PARAMETERS | UNIT | DAILY MAX | WEEKLY AVERAGE | MONTHLY AVG. | PREVIOUS PERMIT LIMITS | MINIMUM SAMPLING FREQUENCY | REPORTING FREQUENCY | SAMPLE TYPE |
|----------------------------------|----------|------------|----------------|--------------|------------------------|----------------------------|---------------------|-------------|
| PHYSICAL | | | | | | | | |
| FLOW | MGD | * | - | * | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 Hr. TOT |
| CONVENTIONAL | | | | | | | | |
| BOD ₅ | mg/L | - | 33 | 22 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| <i>E. COLI</i> | #/100 ml | 1030 | - | 206 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OIL & GREASE | mg/L | 15 | - | 10 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| pH † | SU | 6.5 TO 9.0 | - | 6.5 to 9.0 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| TOTAL SUSPENDED SOLIDS (TSS) | mg/L | - | 33 | 22 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| NUTRIENTS | | | | | | | | |
| AMMONIA AS N (APRIL 1 – SEPT 30) | mg/L | 1.7 | - | 0.6 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| AMMONIA AS N (OCT 1 – MARCH 31) | mg/L | 5.6 | - | 2.1 | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |

- * monitoring and reporting requirement only
- † report the minimum and maximum pH values; pH is not to be averaged
- new parameter not established in previous state operating permit

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

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

CONVENTIONAL:

Biochemical Oxygen Demand - 5 Day (BOD₅)

BOD₅ limits of 22 mg/L monthly average and 33 mg/L weekly average continued from previous permit. The technology-based secondary limitations at 10 CSR 20-7.015 (8) of 30 mg/L monthly and 45 mg/L average weekly are less protective than the no degradation expansion limitations in the table below. These limitations from the 2017 Antidegradation Review are non-degrading. This demonstration of insignificance satisfies the requirements Missouri’s Antidegradation Implementation Procedure (AIP).

| Parameter | Limit Type | Current (7,500 gpd) | | Proposed (10,000 gpd) | | Net change (lb./day) |
|------------------|--------------|---------------------|-------------------|-----------------------|-------------------|----------------------|
| | | Limit (mg/L) | Loading (lb./day) | Limit (mg/L) | Loading (lb./day) | |
| BOD ₅ | Weekly Avg. | 45 | 2.81 | 33 | 2.75 | -0.06 |
| | Monthly Avg. | 30 | 1.88 | 22 | 1.84 | -0.04 |

Escherichia coli (E. coli)

WBC-B Daily maximum limit of 1030 colony forming units per 100 mL [10 CSR 20-7.015(9)(B)1.E.] and a monthly geometric mean limit of 206 bacteria per 100 mL [10 CSR 20-7.031 Table A1] during the recreational season from April 1 through October 31 only [10 CSR 20-7.031(5)(C)], to protect Whole Body Contact (B) [10 CSR 20-7.031(C)2.A.(II)] designated use of the receiving stream. Monthly monitoring established per permit writer’s best professional judgment. Additional samples should be obtained if necessary to meet permit limits for monthly geometric mean. An effluent limit for both daily maximum and monthly geometric mean is required by 40 CFR 122.45(d). The geometric mean is calculated by multiplying all of the data points and then taking the nth root of this product, where n = # of samples collected. For example: Five *E. coli* samples were collected with results of 1, 4, 5, 6, and 10 (#/100 mL). Geometric mean = 5th root of (1)(4)(5)(6)(10) = 5th root of 1,200 = 4.1 #/100 mL. This parameter is included as this outfall receives domestic waste, which is expected to contain *E. coli*.

Oil & Grease

15 mg/L daily maximum; 10 mg/L monthly average; continued from previous permit. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. The facility reported from 2 to 56.3 mg/L. The permit writer completed an RPD on this parameter and found RP. The facility exceeded the daily maximum and monthly average limits during the second quarter of 2018. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits.

AQL Chronic: 10 mg/L per 10 CSR 20-7.031 Table A1

Set chronic standard equal to chronic WLA per TSD §5.4.2 (EPA/505/2-90-001); multiply by 1.5 to obtain acute limit.

10 mg/L * 1.5 = 15 mg/L

pH.

6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the in-stream Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.

Total Suspended Solids (TSS)

22 mg/L monthly average, 33 mg/L daily maximum limits. The technology based secondary limitations at 10 CSR 20-7.015(8) of 30 mg/L monthly average and 45 mg/L daily maximum are less protective of water quality standards than the no degradation expansion limitations in the table below. These limitations from the 2017 Antidegradation Review are non-degrading and protective of existing water quality. This demonstration of insignificance satisfies the requirements of the AIP.

| Parameter | Limit Type | Current (7,500 gpd) | | Proposed (10,000 gpd) | | Net change (lb./day) |
|-----------|--------------|---------------------|-------------------|-----------------------|-------------------|----------------------|
| | | Limit (mg/L) | Loading (lb./day) | Limit (mg/L) | Loading (lb./day) | |
| TSS | Weekly Avg. | 45 | 2.81 | 33 | 2.75 | -0.06 |
| | Monthly Avg. | 30 | 1.88 | 22 | 1.84 | -0.04 |

NUTRIENTS:

Ammonia, Total as Nitrogen

1.7 mg/L daily maximum, 0.6 mg/L monthly average in the summer. 5.6 mg/L daily maximum, 2.1 mg/L monthly average in the winter continued from previous permit. The facility did a technology evaluation as part of the submitted Antidegradation Review in 2017 and selected a treatment technology that could meet the proposed 2013 EPA Ammonia criteria. The facility elected to build a treatment plant that meets the expected criteria and that provides a high level of treatment to potentially reduce the need to upgrade in the near future. See Appendix B for further discussion on the preferred alternative effluent limits.

Summer Ammonia – 1.7 mg/L daily maximum, 0.6 mg/L monthly average.

Winter Ammonia – 5.6 mg/L daily maximum, 2.1 mg/L monthly average.

These ammonia limits would result in a reduction or maintenance of loading at the proposed design flow as compared to water quality-based effluent limits at the current design flow as demonstrated below.

WATER QUALITY-BASED EFFLUENT LIMITS (WOBELS)

Early Life Stages Present Total Ammonia Nitrogen criteria apply

[10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

| Season | Temp (°C) | pH (SU) | Total Ammonia Nitrogen CCC (mg N/L) | Total Ammonia Nitrogen CMC (mg N/L) |
|--------|-----------|---------|-------------------------------------|-------------------------------------|
| Summer | 26 | 7.8 | 1.5 | 12.1 |
| Winter | 6 | 7.8 | 3.1 | 12.1 |

Summer: April 1 – September 30, Winter: October 1 – March 31.

Summer

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.015 + 0.0)1.5 - (0.0 * 0.01)) / 0.015$

$$C_e = 1.5 \text{ mg/L}$$

Acute WLA: $C_e = ((0.2 + 0.0)12.1 - (0.0 * 0.01)) / 0.2$

$$C_e = 12.1 \text{ mg/L}$$

$LTA_c = 1.5 \text{ mg/L (0.780) = 1.2 mg/L}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.321) = 3.88 mg/L}$ [CV = 0.6, 99th Percentile]

$MDL = 1.2 \text{ mg/L (3.11) = 3.7 mg/L}$ [CV = 0.6, 99th Percentile]

$AML = 1.2 \text{ mg/L (1.19) = 1.4 mg/L}$ [CV = 0.6, 95th Percentile, n = 30]

Winter

Chronic WLA: $C_e = ((0.015 + 0.0)3.1 - (0.0 * 0.01)) / 0.015$

$$C_e = 3.1 \text{ mg/L}$$

Acute WLA: $C_e = ((0.2 + 0.0)12.1 - (0.0025 * 0.01)) / 0.2$

$$C_e = 12.1 \text{ mg/L}$$

$LTA_c = 3.1 \text{ mg/L (0.780) = 2.4 mg/L}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.321) = 3.9 mg/L}$ [CV = 0.6, 99th Percentile]

$MDL = 2.4 \text{ mg/L (3.11) = 7.5 mg/L}$ [CV = 0.6, 99th Percentile]

$AML = 2.4 \text{ mg/L (1.19) = 2.9 mg/L}$ [CV = 0.6, 95th Percentile, n = 30]

| Parameter | Limit Type | WQBEL at current design flow (7,500 gpd) | | Proposed (10,000 gpd) | | Net change (lb./day) |
|---------------------|--------------|--|----------------------|--------------------------|----------------------|-------------------------|
| | | Limit (mg/L) | Loading (lb./day) | Limit (mg/L) | Loading (lb./day) | |
| Ammonia (summer) | Daily Max | 3.7 | 0.23 | 1.7 | 0.14 | -0.09 |
| | Monthly Avg. | 1.4 | 0.09 | 0.6 | 0.05 | -0.04 |
| Ammonia (winter) | Daily Max | 7.5 | 0.47 | 5.6 | 0.47 | 0.0 |
| | Monthly Avg. | 2.9 | 0.18 | 2.1 | 0.18 | 0.0 |

OUTFALL #003, #004, #005, #006 – STORMWATER ONLY

EFFLUENT LIMITATIONS TABLE:

| PARAMETERS | UNIT | DAILY MAXIMUM LIMIT | BENCH-MARK | PREVIOUS PERMIT LIMITS | MINIMUM SAMPLING FREQUENCY | REPORTING FREQUENCY | SAMPLE TYPE |
|---------------------|---------|---------------------|------------|------------------------|----------------------------|---------------------|-----------------|
| PHYSICAL | | | | | | | |
| FLOW | MGD | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. ESTIMATE |
| PRECIPITATION | inches | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | 24 HR. TOT |
| CONVENTIONAL | | | | | | | |
| COD | mg/L | * | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| OIL & GREASE | mg/L | ** | 10 | * | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| pH † | SU | 6.5 TO 9.0 | - | SAME | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| SETTLABLE SOLIDS | mL/L/hr | ** | 1.0 | * | ONCE/QUARTER | ONCE/QUARTER | GRAB |
| TSS | mg/L | ** | 100 | * | ONCE/QUARTER | ONCE/QUARTER | GRAB |

* monitoring and reporting requirement only

** monitoring with associated benchmark

† report the minimum and maximum pH values; pH is not to be averaged

new parameter not established in previous state operating permit

DERIVATION AND DISCUSSION OF LIMITS:

PHYSICAL:

Flow

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

Precipitation

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

CONVENTIONAL:

Chemical Oxygen Demand (COD)

Monitoring only continued from the previous permit using the permit writer’s best professional judgment. There is no numeric water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD may indicate materials/chemicals coming into contact with stormwater causing an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs.

Oil & Grease

Monitoring with a daily maximum benchmark of 10 mg/L. Oil and grease is considered a conventional pollutant. Oil and grease is a comprehensive test which measures for gasoline, diesel, crude oil, creosote, kerosene, heating oils, heavy fuel oils, lubricating oils, waxes, and some asphalt and pitch. The test can also detect some volatile organics such as benzene, toluene, ethylbenzene, or toluene, but these constituents are often lost during testing due to their boiling points. It is recommended to perform separate testing for these constituents if they are a known pollutant of concern at the site, i.e. aquatic life toxicity or human health is a concern. Results do not allow for separation of specific pollutants within the test, they are reported, totaled, as “oil and grease”. Per 10 CSR 20-7.031 Table A1: *Criteria for Designated Uses*; 10 mg/L is the standard for protection of aquatic life. This standard will also be used to protect the general criteria found at 10 CSR 20-7.031(4). Ten mg/L is the level at which sheen is expected to form on receiving waters. Oils and greases of different densities will possibly form sheen or unsightly bottom deposits at levels which vary from 10 mg/L. To protect the general criteria, it is the responsibility of the permittee to visually observe the discharge and receiving waters for sheen or bottom deposits. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

pH

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

Settleable Solids (SS)

Monitoring with a daily maximum benchmark of 1.5 mL/L/hour. DMRs show exceedances of this benchmark at outfall #004 only. There is no numeric water quality standard for SS; however, sediment discharges can negatively impact aquatic life habitat. Settleable solids are also a valuable indicator parameter. Solids monitoring allows the permittee to identify increases in sediment and solids may indicate uncontrolled materials leaving the site. The benchmark value falls within the range of values implemented in other permits having similar industrial activities.

Total Suspended Solids (TSS)

Monitoring with a daily maximum benchmark of 100 mg/L. There is no numeric water quality standard for TSS; however, sediment discharges can negatively impact aquatic life habitat. TSS is also a valuable indicator parameter. TSS monitoring allows the permittee to identify increases in TSS indicating uncontrolled materials leaving the site. Increased suspended solids in runoff can lead to decreased available oxygen for aquatic life and an increase of surface water temperatures in a receiving stream. Suspended solids can also be carriers of toxins, which can adsorb to the suspended particles; therefore, total suspended solids are a valuable indicator parameter for other pollution. The benchmark is achievable through proper operational and maintenance of BMPs and falls within the range of values implemented in other permits having similar industrial activities.

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

- ✓ This permit is not being synchronized at this time because the permit would expire during the 4th quarter of 2020 which would cause the permit to be issued for less than 12 months. This permit will be renewed for a full five year term.

PUBLIC NOTICE:

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

<http://dnr.mo.gov/env/wpp/permits/pn/index.html>. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in or with 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 March 6, 2020 to April 6, 2020. No responses were received.

DATE OF FACT SHEET: DECEMBER 27, 2019

COMPLETED BY:

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
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Water Quality and Antidegradation Review

*For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to
Tributary to Castor River*

*by
Nestle Purina PetCare Company*



May 2017

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1. FACILITY INFORMATION

FACILITY NAME: Nestle Purina PetCare Company NPDES #: MO-0101788

FACILITY TYPE/DESCRIPTION:

FACILITY TYPE: NON-POTW/INDUSTRIAL – Domestic Wastewater at Industrial Facility – SIC #4952

FACILITY DESCRIPTION: This facility manufactures pet litter using a variety of process equipment. This review will only address changes being made at Outfall #002 which is an internal outfall for wastewater from the facility's domestic wastewater treatment plant and drains to the plant's storm water settling pond to ultimately be discharged from Outfall #001.

The existing Outfall #002 is an extended aeration plant with a current permitted design flow of 7,500 gpd to serve a population equivalent of 75 (250 employees). The facility currently has 450 employees and contractors and is growing. The system occasionally struggles to meet BOD₅, TSS, and *E. coli* permit limits. Actual flow is approximately 3,000 gallons per day. The new treatment facility will be an extended aeration package plant with the existing UV disinfection system. The proposed design flow will be 0.01 MGD.

| | | | |
|----------------|--|--------------------|---|
| COUNTY: | <u>Stoddard</u> | UTM COORDINATES: | <u>X= 778827 / Y= 4095180</u> |
| 12- DIGIT HUC: | <u>08020204-0206</u> | LEGAL DESCRIPTION: | <u>NW¼, NE¼, Sec. 28, T27N, R11E</u> |
| EDU*: | <u>MS Alluvial Basin/ St. Francis/Little</u> | ECOREGION: | <u>Mississippi River Alluvial Basin</u> |

* Ecological Drainage Unit

2. WATER QUALITY INFORMATION

In accordance with Missouri's Water Quality Standard [10 CSR 20-7.031(3)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body's available assimilative capacity is justified. Effective August 30, 2008, and revised July 13, 2016, a facility is required to use *Missouri's Antidegradation Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

The existing domestic wastewater treatment system is an extended aeration plant, with clarification and UV disinfection, constructed in the 1970s.

Discharge Monitoring Reports for the last five years (3/31/2012 through 12/31/2016) indicated three BOD exceedances (Sep. 2015, Mar 2015, and Jun 2014), two *E. coli* and three fecal coliform exceedances (Jun 2013, Sep 2013, Jun 2014, Jun 2015, and Dec 2015), two pH values below the minimum limit (Dec 2015 and Mar 2016), and nine TSS exceedances between Jun 2013 and Sep 2016. The applicant noted that the disinfection exceedances were due to operating difficulties with a new UV system and that the system has been operating well since early 2016 and will be reused with the new treatment system. The UV system has a rated capacity of 35 gallons per minute. The facility has been issued two Notices of Violation within the last five years for not meeting effluent limits.

The average values over the sampling period from 3/31/2012 through 12/31/2016 were as follows: BOD₅ – 13.6 mg/L, TSS – 32.7 mg/L, NH₃ – reported 0.05 mg/L for every quarter except for the first quarter of 2015 which was 30.8 mg/L and the first quarter of 2012 which was 0.079 mg/L. Average flow was 9,890 gallons per day. The time period from March 2014 through December 2015 had reported flows between 11,672 gpd and 39,000 gpd, with all other flows between March 2012 and December 2016 being less than 3,000 gpd. The applicant noted that they have completed flow studies to confirm that their actual flow rates are closer to 3,000 gallons per day and are requesting a maximum average flow limit of 10,000 gpd to account for growth, hydraulic surges, and load fluctuations.

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | RECEIVING WATERBODY | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---------|-------------------|-----------------|---------------------------|-------------------------------------|
| 002 | 0.015 | Secondary | Tributary to Castor River | 0.85 |
| | | | Castor River | N/A |

3. RECEIVING WATERBODY INFORMATION

| WATERBODY NAME | CLASS | WBID | LOW-FLOW VALUES (CFS) | | | DESIGNATED USES** |
|---------------------------|-------|------|-----------------------|------|-------|---|
| | | | 1Q10 | 7Q10 | 30Q10 | |
| Tributary to Castor River | - | - | 0.0 | 0.0 | 0.0 | General Criteria AQL, HHP, IRR, LWP, SCR, WBC(B), General Criteria |
| Castor River | P | 3076 | 0.1 | 0.1 | 1.0 | |

** Irrigation (IRR), Livestock & Wildlife Protection (LWP), Protection of Warm Water Aquatic Life (AQL), Human Health Protection (HHP), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation – Category A (WBC-A), Whole Body Contact Recreation – Category B (WBC-B), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

RECEIVING WATER BODY SEGMENT #1: Tributary to Castor River

Upper end segment* UTM coordinates: X= 778827 / Y= 4095180 (Outfall)

Lower end segment* UTM coordinates: X= 778192 / Y= 4093781 (meets Castor River (P) (WBID 3076))

*Segment is the portion of the stream where discharge occurs. Segment is used to track changes in assimilative capacity and is bound at a minimum by existing sources and confluences with other significant water bodies.

4. GENERAL COMMENTS

Jacobs Engineering and Nestle Purina PetCare prepared the Nestle Purina PetCare *Antidegradation Review and Operating Permit Modification Application* dated February 2017.

Applicant elected to determine that discharge of all pollutants of concern (POC) is non-degrading or insignificant to the receiving stream. This analysis was conducted to fulfill the requirements of the AIP. Information that was provided by the applicant in the submitted report and summary forms in Appendix B was used to develop this review document.

A Geohydrological Evaluation was not submitted for this facility upgrade. The outfall location will not be changing, and the new treatment system will be installed on a concrete pad immediately to the north of the existing treatment system. The stream is gaining for discharge purposes (Appendix A: Map).

A Missouri Department of Conservation Natural Heritage Review Report was obtained by the applicant. There are records for species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the defined project area. The report states that the applicant should contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination. Additionally, this project may occur on public land; the applicant should contact the USACOE.

Indiana Bats (federal- and state-listed endangered) and Northern long-eared bats (federal-listed threatened) may occur near the project area. The Natural Heritage review notes that the U.S. Fish and Wildlife Service should be contacted if any trees need to be removed for the project in order to protect Indiana bats and Northern long-eared bats. The applicant noted that the project would not disturb any of these potential habitats.

5. ANTIDEGRADATION REVIEW INFORMATION

The following is a review of the *Antidegradation Review and Operating Permit Modification Application* dated February 2017.

5.1. TIER DETERMINATION

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix B). Pollutants of concern are defined as those pollutants “proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge.” (AIP, Page 7). Tier 2 is assumed for all POCs; however, tier determinations were not necessary with maintenance of mass loading determinations (see Appendix B).

Table 1. Pollutants of Concern and Tier Determination

| POLLUTANTS OF CONCERN | TIER* | DEGRADATION | COMMENT |
|--|-------|---------------|-----------------------|
| BOD ₅ /DO | * | Insignificant | |
| Total Suspended Solids (TSS) | ** | Insignificant | |
| Ammonia as N | * | Insignificant | |
| pH | *** | Insignificant | Permit limits applied |
| Oil & Grease (mg/L) | * | Insignificant | Permit limits applied |
| <i>Escherichia coli</i> (<i>E. coli</i>) | * | Insignificant | Permit limits applied |

*Tier determination not possible with the demonstration of mass loading maintenance.

Tier determination not possible: ** No in-stream standards for these parameters.

*** Standards for these parameters are ranges.

The following Antidegradation Review Summary attachments in Appendix B were used by the applicant:

For pollutants of concern, the attachments are:

Attachment B, Tier 2 with minimal degradation.

5.2. EXISTING WATER QUALITY

No existing water quality data was submitted.

5.3. NO DISCHARGE EVALUATION

According to 10 CSR 20-6.010 (4)(D), reports for the purpose of constructing a wastewater treatment facility shall consider the feasibility of constructing and operating a no discharge facility.

This evaluation of non-discharging systems, along with the evaluation of other treatment alternatives was originally completed for a design flow of 20,000 gpd. The applicant determined that approximately 1.35 acres would be needed for a storage lagoon for 60 days of storage, 6.8 acres for land application at an application rate of 40 inches per year, and a buffer of three acres for perimeter setback and access road for a total of 11.15 acres. Approximately 4,000 feet of three inch force main would convey the wastewater from the existing trash tank (converted to a pumping station) to the storage pond, which would have a geosynthetic liner. From there, it would be pumped to the land application field. See Appendix C: No Discharge Alternatives Cost Estimates for a detailed cost estimate. At 148% of the cost of the preferred treatment alternative, land application was considered not economically efficient.

The applicant also evaluated water reuse. The reuse potential would be about 12% of water needs. Reuse would provide seemingly little cost savings compared to pumping well water. Expending more capital on MBR or other water reuse technology along with reuse water tie-ins and piping would provide little cost savings and likely have a very long payback period.

Regionalization was discussed by the applicant with Bell City and they expressed concerns that their three-cell lagoon may not be able to meet current and future effluent limits if Nestle Purina's sanitary wastewater was accepted at their facility. See Appendix C: No Discharge Alternatives Cost Estimates for a detailed cost estimate

5.4. LOSING STREAM ALTERATIVE DISCHARGE LOCATION

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

waterbody. The facility does not discharge to a losing stream segment or will not discharge with 2 miles of a losing stream segment.

5.5. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri's antidegradation implementation procedures specify that if the proposed activity does not result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic

importance are not required. Thus, the Tier 2 Review is not required. However, the applicant evaluated several degrading and non-degrading treatment alternatives.

The applicant initially looked at thirteen different treatment options including a variety of activated sludge options, a sand filter, cloth filter, land application, and pumping offsite. These options were narrowed down to six: connecting to Bell City WWTP, Extended Aeration Package Plant, Sequencing Batch Reactor (SBR) Package Plant, Existing WWTF Retrofit, Membrane Bioreactor (MBR) Package Plant, and Land Application.

The applicant's preferred treatment alternative was Extended Aeration due to economics, expandability, operational criteria, ability to meet current/future effluent limits, prior operational experience, and a greater comfort level in the anticipated capital and operational costs.

Table 2. Alternatives Evaluation

| | Retrofit Existing | Extended Aeration | SBR | MBR | Land App | Pump to Bell City |
|---|-------------------|-------------------|-------------|-------------|-------------|-------------------|
| Capital Cost | \$888,000 | \$900,000 | \$1,284,000 | \$1,800,000 | \$1,620,000 | \$2,618,000 |
| Capital Cost with Nutrient Removal | \$1,740,000 | \$1,020,000 | \$1,284,000 | \$1,800,000 | \$1,620,000 | \$2,618,000 |
| Annual O&M | \$3,100 | \$3,100 | \$3,100 | \$7,200 | \$640 | \$61,200 |
| Present Worth Cost* | \$929,800 | \$941,800 | \$1,325,800 | \$1,897,000 | \$1,628,640 | \$3,441,800 |
| Present Worth Cost* with Nutrient Removal | \$1,820,500 | \$1,100,500 | \$1,364,500 | \$1,935,700 | \$1,628,640 | \$3,441,800 |
| Ratio (with nutrient removal) | 1.65:1 | 1:1 | 1.24:1 | 1.76:1 | 1.48:1 | 3.13:1 |

*20 years with 5% interest rate

5.6. DEMONSTRATION OF INSIGNIFICANCE

In Section II.A of the *Missouri's Antidegradation Rule and Implementation Procedure*, a demonstration of insignificance of the discharge requires the applicant to show a reduction, or maintenance of loading, i.e., no change in ambient water quality concentrations in the receiving waters. As demonstrated in Nestle Purina PetCare *Antidegradation Review and Operating Permit Modification Application* dated February 2017, Table 3 below summarizes the results of current loading based on the current permit concentrations and proposed loadings based on the proposed permit concentrations.

Table 3. Net Change in Loadings Based upon Current and Proposed Permit Limits.

| Pollutants of Concern | Current (7,500 gpd) | | Proposed (10,000 gpd) | | Net change (lb./day) |
|-------------------------|--|-------------------|--|-------------------|----------------------|
| | Weekly Average or Max Daily Limit (mg/L) | Loading (lb./day) | Weekly Average or Max Daily Limit (mg/L) | Loading (lb./day) | |
| BOD ₅ ** | 45 (AWL) | 2.81 | 33 (AWL) | 2.75 | -0.06 |
| TSS** | 45 (AWL) | 2.81 | 33 (AWL) | 2.75 | -0.06 |
| pH | 6.5-9.0 SI units | N/A | 6.5-9.0 SI units | N/A | N/A |
| Ammonia (summer) | 3.7* | 0.23* | 1.7 | 0.14 | -0.9 |
| Ammonia (winter) | 7.5* | 0.47* | 5.6 | 0.47 | 0.0 |
| <i>Escherichia coli</i> | Regulatory limits apply | N/A | Regulatory limits apply | N/A | N/A |
| Oil and Grease | 15 | N/A | 15 | N/A | N/A |

* Monitoring only in existing operating permit. Water quality-based effluent limit values were used to calculate loading

** AWL = average weekly limit.

Current design flow (Qd) = 0.0075 MGD

Mass conversion: 1 mg/L = 8.34 lbs/million gallons

Wasteload Allocation (WLA) = maximum daily or weekly average

Existing Load (lbs/day) = Mass conversion * WLA * Qd

Example: 8.34 (lbs/MG)/(mg/L) * 45 mg/L * 0.0075 MGD = 2.81 lbs/day

6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.
9. If the proposed treatment technology is not covered in 10 CSR 20-8 Design Guides, the treatment process may be considered a new technology. As a new technology, the permittee will need to work with the review engineer to ensure equipment is sized properly. The operating permit may contain additional requirements to evaluate the effectiveness of the technology once the facility is in operation. This Antidegradation Review is based on the information provided by the facility and is not a comprehensive review of the proposed treatment technology. If the review engineer determines the proposed technology will not consistently meet proposed effluent limits, the permittee will be required to revise their Antidegradation Report.

7. MIXING CONSIDERATIONS

Mixing Zone (MZ): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(a)].

Zone of Initial Dilution (ZID): Not Allowed [10 CSR 20-7.031(5)(A)4.B.(I)(b)].

8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELOAD ALLOCATION

N

USE ATTAINABILITY

N

WHOLE BODY CONTACT

Y*

STUDY CONDUCTED (Y OR N):

ANALYSIS CONDUCTED (Y OR N):

USE RETAINED (Y OR N):

* FOR FIRST CLASSIFIED WATERBODY

OUTFALL #002

WET TEST (Y OR N): N

FREQUENCY: N/A AEC: N/A METHOD: N/A

TABLE 4. EFFLUENT LIMITS FOR OUTFALL #002

| PARAMETER | UNITS | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | BASIS FOR LIMIT (NOTE 2) | MONITORING FREQUENCY |
|--|-------|---------------|----------------|-----------------|--------------------------|----------------------|
| FLOW | MGD | * | | * | FSR | ONCE/QUARTER |
| BOD ₅ (MG/L) | MG/L | | 33 | 22 | NDEL | ONCE/QUARTER |
| TSS (MG/L) | MG/L | | 33 | 22 | NDEL | ONCE/QUARTER |
| PH (S.U.) | SU | 6.5 – 9.0 | | 6.5 – 9.0 | FSR | ONCE/QUARTER |
| AMMONIA AS N (MG/L) (APRIL 1 – SEPT 30) | MG/L | 1.7 | | 0.6 | NDEL | ONCE/QUARTER |
| AMMONIA AS N (MG/L) | MG/L | 5.6 | | 2.1 | NDEL | ONCE/QUARTER |

| | | | | | | |
|---------------------------------------|--------|------|--|-------|-----|--------------|
| (OCT 1 – MAR 31) | | | | | | |
| OIL & GREASE (MG/L) | MG/L | 15 | | 10 | FSR | ONCE/QUARTER |
| <i>ESCHERICHIA COLIFORM (E. COLI)</i> | NOTE 1 | 1030 | | 206** | FSR | ONCE/QUARTER |

NOTE 1 – COLONIES/100 ML

NOTE 2– WATER QUALITY-BASED EFFLUENT LIMITATION – WQBEL; OR MINIMALLY DEGRADING EFFLUENT LIMIT –MDEL; OR PREFERRED ALTERNATIVE EFFLUENT LIMIT – PEL; OR TECHNOLOGY-BASED EFFLUENT LIMIT – TBEL; OR NO DEGRADATION EFFLUENT LIMIT – NDEL; OR FEDERAL/STATE REGULATION – FSR; OR NOT APPLICABLE – N/A. ALSO, PLEASE SEE THE **GENERAL ASSUMPTIONS OF THE WQAR #4 & #5.**

* Monitoring requirements only.

** The Monthly Average for *E. coli* shall be reported as a Geometric Mean.

9. RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

10. DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations and limits were calculated using two methods:

1) Water quality-based – Using water quality criteria or water quality model results and the dilution equation below:

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

Where: C = downstream concentration

Cs = upstream concentration

Qs = upstream flow

Ce = effluent concentration

Qe = effluent flow

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).

Chronic wasteload allocations (WLA_c) were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and upstream stream flow without mixing considerations. Acute wasteload allocations are only determined in the absence of applicable chronic criteria.

10.1. OUTFALL #002 – DOMESTIC WASTEWATER OUTFALL

10.2. LIMIT DERIVATION

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** BOD₅ limits of 22 mg/L monthly average, 33 mg/L average weekly. The technology-based secondary limitations at 10 CSR 20-7.015 (8) of 30 mg/L monthly and 45 mg/L average weekly are less protective of water quality standards than the no degradation expansion limitations in the table below. These limitations are non-degrading and protective of existing water quality. This demonstration of insignificance satisfies the requirements of the AIP.

| Parameter | Limit Type | Current (7,500 gpd) | | Proposed (10,000 gpd) | | Net change (lb./day) |
|------------------|--------------|---------------------|-------------------|-----------------------|-------------------|----------------------|
| | | Limit (mg/L) | Loading (lb./day) | Limit (mg/L) | Loading (lb./day) | |
| BOD ₅ | Weekly Avg. | 45 | 2.81 | 33 | 2.75 | -0.06 |
| | Monthly Avg. | 30 | 1.88 | 22 | 1.84 | -0.04 |

There is a demonstrated reduction in loading in the above table; therefore, no dissolved oxygen (DO) analysis is needed to show that the proposed expanded loading is insignificant for DO. Existing water quality should improve with the proposed discharge. Therefore, staff considers the effluent limitations protective of aquatic life.

- **Total Suspended Solids (TSS).** 22 mg/L monthly average, 33 mg/L average weekly. The technology-based secondary limitations at 10 CSR 20-7.015(8) of 30 mg/L monthly and 45 mg/L average weekly are less protective of water quality standards than the no degradation expansion limitations in the table below. These limitations are non-degrading and protective of existing water quality. This demonstration of insignificance satisfies the requirements of the AIP.

| Parameter | Limit Type | Current (7,500 gpd) | | Proposed (10,000 gpd) | | Net change (lb./day) |
|-----------|--------------|---------------------|-------------------|-----------------------|-------------------|----------------------|
| | | Limit (mg/L) | Loading (lb./day) | Limit (mg/L) | Loading (lb./day) | |
| TSS | Weekly Avg. | 45 | 2.81 | 33 | 2.75 | -0.06 |
| | Monthly Avg. | 30 | 1.88 | 22 | 1.84 | -0.04 |

- **pH.** – 6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. No mixing zone is allowed due to the classification of the receiving stream, therefore the water quality standard must be met at the outfall.
- **Total Ammonia Nitrogen.** The facility did a technology evaluation as part of the submitted Antidegradation Review and selected a treatment technology that could meet the proposed 2013 EPA Ammonia criteria (see **Notice to Permittee** below). The facility has elected to build a treatment plant that meets the expected criteria and that provides a high level of treatment to potentially reduce the need to upgrade in the near future. See Appendix B for further discussion on the preferred alternative effluent limits.

The facility currently has monitoring only requirements for ammonia, has demonstrated no reasonable potential to exceed water quality standards in the past, and has reported very low ammonia effluent concentrations (mostly 0.05 mg/L). Therefore, we believe that the below ammonia limits can be presumed to be reasonable for the demonstration of insignificance:

Summer Ammonia – 1.7 mg/L daily maximum, 0.6 mg/L monthly average.
Winter Ammonia – 5.6 mg/L daily maximum, 2.1 mg/L monthly average.

These ammonia limits would result in a reduction or maintenance of loading at the proposed design flow as compared to water quality-based effluent limits at the current design flow as demonstrated below.

WATER QUALITY-BASED EFFLUENT LIMITS (WQBELS)

Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

| Season | Temp (°C) | pH (SU) | Total Ammonia Nitrogen CCC (mg N/L) | Total Ammonia Nitrogen CMC (mg N/L) |
|--------|-----------|---------|-------------------------------------|-------------------------------------|
| Summer | 26 | 7.8 | 1.5 | 12.1 |
| Winter | 6 | 7.8 | 3.1 | 12.1 |

Summer: April 1 – September 30, Winter: October 1 – March 31.

Summer

$$C_e = (((Q_e + Q_s) * C) - (Q_s * C_s)) / Q_e$$

Chronic WLA: $C_e = ((0.015 + 0.0)1.5 - (0.0 * 0.01)) / 0.015$
 $C_e = 1.5 \text{ mg/L}$

Acute WLA: $C_e = ((0.2 + 0.0)12.1 - (0.0 * 0.01)) / 0.2$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 1.5 \text{ mg/L (0.780)} = \mathbf{1.2 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.88 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

MDL = 1.2 mg/L (3.11) = 3.7 mg/L [CV = 0.6, 99th Percentile]

AML = 1.2 mg/L (1.19) = 1.4 mg/L [CV = 0.6, 95th Percentile, n = 30]

Winter

Chronic WLA: $C_e = ((0.015 + 0.0)3.1 - (0.0 * 0.01)) / 0.015$
 $C_e = 3.1 \text{ mg/L}$

Acute WLA: $C_e = ((0.2 + 0.0)12.1 - (0.0025 * 0.01)) / 0.2$
 $C_e = 12.1 \text{ mg/L}$

$LTA_c = 3.1 \text{ mg/L (0.780)} = \mathbf{2.4 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day avg.]

$LTA_a = 12.1 \text{ mg/L (0.321)} = 3.9 \text{ mg/L}$ [CV = 0.6, 99th Percentile]

MDL = 2.4 mg/L (3.11) = 7.5 mg/L [CV = 0.6, 99th Percentile]

AML = 2.4 mg/L (1.19) = 2.9 mg/L [CV = 0.6, 95th Percentile, n = 30]

| Parameter | Limit Type | WQBEL at current design flow (7,500 gpd) | | Proposed (10,000 gpd) | | Net change (lb./day) |
|---------------------|--------------|--|----------------------|--------------------------|----------------------|-------------------------|
| | | Limit (mg/L) | Loading (lb./day) | Limit (mg/L) | Loading (lb./day) | |
| Ammonia (summer) | Daily Max | 3.7 | 0.23 | 1.7 | 0.14 | -0.09 |
| | Monthly Avg. | 1.4 | 0.09 | 0.6 | 0.05 | -0.04 |
| Ammonia (winter) | Daily Max | 7.5 | 0.47 | 5.6 | 0.47 | 0.0 |
| | Monthly Avg. | 2.9 | 0.18 | 2.1 | 0.18 | 0.0 |

Notice to Permittee: On August 22, 2013, the Environmental Protection Agency (EPA) published a notice in the Federal Register announcing 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 aquatic life in water.

The Water Protection Program (WPP) is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The Department has begun discussions about how these new criteria will be implemented. More information about the new ammonia criteria for aquatic life protection may be found at: <http://dnr.mo.gov/pubs/pub2481.htm>.

- ***Escherichia coli (E. coli)***. Monthly average of 206 per 100 mL as a geometric mean and Daily Maximum of 1030 during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the first classified stream located approximately 0.85 miles from the outfall location, as per 10 CSR 20-

7.031(5)(C). and 10 CSR 20-7.015 (9)(B)1.D. An effluent limit for both monthly average and daily maximum is required by 40 CFR 122.45(d).

Per the effluent regulations the *E. coli* sampling/monitoring frequency shall be set to match the monitoring frequency of wastewater and sludge sampling program for the receiving water category in 7.015(1)(B)3. during the recreational season (April 1 – October 31), with compliance to be determined by calculating the geometric mean of all samples collected during the reporting period (samples collected during the calendar month for the monthly average). The daily maximum requirement is consistent with EPA federal regulation 40 CFR 122.45(d). Please see **GENERAL ASSUMPTIONS OF THE WQAR #7**

- **Oil & Grease.** Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum retained from existing operating permit.

11. ANTIDegradation REVIEW PRELIMINARY DETERMINATION

The proposed facility discharge will result in no degradation of the segment identified in the Tributary to Castor River. Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to retain the remaining assimilative capacity. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Cailie Carlile, P.E.

Date: 05/01/2017

Unit Chief: John Rustige, P.E.



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

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

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

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

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

Section B – Reporting Requirements

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



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

Section C – Bypass/Upset Requirements

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

Section D – Administrative Requirements

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



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



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

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PART III – BIOSOLIDS AND SLUDGE FROM DOMESTIC TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. PART III Standard Conditions pertain to biosolids and sludge requirements under the Missouri Clean Water Law and regulations for domestic and municipal wastewater and also incorporates federal sludge disposal requirements under 40 CFR Part 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR Part 503 for domestic biosolids and sludge.
2. PART III Standard Conditions apply only to biosolids and sludge generated at domestic wastewater treatment facilities, including public owned treatment works (POTW) and privately owned facilities.
3. Biosolids and Sludge Use and Disposal Practices:
 - a. The permittee is authorized to operate the biosolids and sludge generating, treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. The permittee shall not exceed the design sludge/biosolids volume listed in the facility description and shall not use biosolids or sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
 - c. For facilities operating under general operating permits that incorporate Standard Conditions PART III, the facility is authorized to operate the biosolids and sludge generating, treatment, storage, use and disposal facilities identified in the original operating permit application, subsequent renewal applications or subsequent written approval by the department.
4. Biosolids or Sludge Received from other Facilities:
 - a. Permittees may accept domestic wastewater biosolids or sludge from other facilities as long as the permittee's design sludge capacity is not exceeded and the treatment facility performance is not impaired.
 - b. The permittee shall obtain a signed statement from the biosolids or sludge generator or hauler that certifies the type and source of the sludge
5. Nothing in this permit precludes the initiation of legal action under local laws, except to the extent local laws are preempted by state law.
6. This permit does not preclude the enforcement of other applicable 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 biosolids or sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Act or under Chapter 644 RSMo.
8. In addition to Standard Conditions PART III, the Department may include biosolids and sludge limitations in the special conditions portion or other sections of a site specific permit.
9. Exceptions to Standard Conditions PART III may be authorized on a case-by-case basis by the Department, as follows:
 - a. The Department may modify a site-specific permit following permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR § 124.10, and 40 CFR § 501.15(a)(2)(ix)(E).
 - b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR Part 503.

SECTION B – DEFINITIONS

1. Best Management Practices are practices to prevent or reduce the pollution of waters of the state and include agronomic loading rates (nitrogen based), soil conservation practices, spill prevention and maintenance procedures 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, feed 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 Part 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 (PSRP) in accordance with 40 CFR Part 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. Feed crops are crops produced primarily for consumption by animals.
8. Fiber crops are crops such as flax and cotton.
9. Food crops are crops consumed by humans which include, but is not limited to, fruits, vegetables and tobacco.
10. Industrial wastewater means any wastewater, also known as process wastewater, not defined as domestic wastewater. Per 40 CFR Part 122.2, process wastewater 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. Land application of industrial wastewater, residuals or sludge is not authorized by Standard Conditions PART III.
11. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including, sand filters, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological contact systems, and other similar facilities. It does not include wastewater treatment lagoons or constructed wetlands for wastewater treatment.
12. Plant Available Nitrogen (PAN) is nitrogen that will be available to plants during the growing seasons after biosolids application.
13. 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.
14. 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), sewage sludge incinerator ash, or grit/screenings generated during preliminary treatment of domestic sewage.
15. Sludge lagoon is part of a mechanical wastewater treatment facility. A sludge lagoon is an earthen or concrete lined 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.
16. Septage is the sludge pumped from residential septic tanks, cesspools, portable toilets, Type III marine sanitation devices, or similar treatment works such as sludge holding structures from residential wastewater treatment facilities with design populations of less than 150 people. Septage does not include grease removed from grease traps at a restaurant or material removed from septic tanks and other similar treatment works that have received industrial wastewater. The standard for biosolids from septage is different from other sludges. See Section H for more information.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Biosolids or sludge shall be routinely removed from wastewater treatment facilities and handled according to the permit facility description and the requirements of Standard Conditions PART III or in accordance with Section A.3.c., above.
2. The permittee shall operate storage and treatment facilities, as defined by Section 644.016(23), RSMo, so that there is no biosolids or sludge discharged to waters of the state. Agricultural storm water discharges are exempt under the provisions of Section 644.059, RSMo.
3. Mechanical treatment plants shall have separate biosolids or sludge storage compartments in accordance with 10 CSR 20, Chapter 8. Failure to remove biosolids or sludge from these storage compartments on the required design schedule is a violation of this permit.

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

1. Permittees that use contract haulers, under the authority of their operating permit, to dispose of biosolids or sludge, are responsible for compliance with all the terms of this permit. Contract haulers that assume the responsibility of the final disposal of biosolids or sludge, including biosolids land application, must obtain a Missouri State Operating Permit unless the hauler transports the biosolids or sludge to another permitted treatment facility.
2. Testing of biosolids or sludge, other than total solids content, is not required if biosolids or sludge are hauled to a permitted wastewater treatment facility, unless it is required by the accepting facility.

SECTION E – INCINERATION OF SLUDGE

1. Please be aware that sludge incineration facilities may be subject to the requirements of 40 CFR Part 503 Subpart E, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
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, mass of sludge incinerated and mass of ash generated. Permittee shall also provide the name of the ash disposal facility and permit number if applicable.

SECTION F – SURFACE DISPOSAL SITES AND BIOSOLIDS AND SLUDGE LAGOONS

1. Please be aware that surface disposal sites of biosolids or sludge from wastewater treatment facilities may be subject to other laws including the requirements in 40 CFR Part 503 Subpart C, Missouri Air Conservation Commission regulations under 10 CSR 10, and solid waste management regulations under 10 CSR 80, as applicable.
2. Biosolids or 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 biosolids or sludge storage lagoons as storage facilities, accumulated biosolids or 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 biosolids or sludge removed will be dependent on biosolids or sludge generation and accumulation in the facility. Enough biosolids or 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 biosolids or sludge on the bottom of the lagoon, upon prior approval of the Department; or
 - b. Permittee shall close the lagoon in accordance with Section I.

SECTION G – LAND APPLICATION OF BIOSOLIDS

1. The permittee shall not land apply biosolids unless land application is authorized in the facility description, the special conditions of the issued NPDES permit, or in accordance with Section A.3.c., above.
2. This permit only authorizes “Class A” or “Class B” biosolids derived from domestic wastewater 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.
3. Class A Biosolids Requirements: Biosolids shall meet Class A requirements for application to public contact sites, residential lawns, home gardens or sold and/or given away in a bag or other container.
4. Class B biosolids that are land applied to agricultural and public contact sites shall comply with the following restrictions:
 - a. Food crops that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of biosolids.
 - b. Food crops below the surface of the land shall not be harvested for 20 months after application of biosolids when the biosolids remain on the land surface for four months or longer prior to incorporation into the soil.
 - c. Food crops below the surface of the land shall not be harvested for 38 months after application of biosolids when the biosolids remain on the land surface for less than four months prior to incorporation into the soil.
 - d. Animal grazing shall not be allowed for 30 days after application of biosolids.
 - e. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of biosolids.
 - f. Turf shall not be harvested for one year after application of biosolids if used for lawns or high public contact sites in close proximity to populated areas such as city parks or golf courses.
 - g. After Class B biosolids have been land applied to public contact sites with high potential for public exposure, as defined in 40 CFR § 503.31, such as city parks or golf courses, access must be restricted for 12 months.
 - h. After Class B biosolids have been land applied public contact sites with low potential for public exposure as defined in 40 CFR § 503.31, such as a rural land application or reclamation sites, access must be restricted for 30 days.
5. Pollutant limits
 - a. Biosolids shall be monitored to determine the quality for regulated pollutants listed in Table 1, below. Limits for any pollutants not listed below may be established in the permit.
 - b. The number of samples taken is directly related to the amount of biosolids or sludge produced by the facility (See Section J, below). 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 achieve pollutant concentration below those identified in Table 1, below.
 - c. Table 1 gives the ceiling concentration for biosolids. Biosolids which exceed the concentrations in Table 1 may not be land applied.

TABLE 1

| Biosolids ceiling concentration | |
|---------------------------------|------------------------------------|
| 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 |

- d. Table 2 below gives the low metal concentration for biosolids. Because of its higher quality, biosolids with pollutant concentrations below those listed in Table 2 can safely be applied to agricultural land, forest, public contact sites, lawns, home gardens or be given away without further analysis. Biosolids containing metals in concentrations above the low metals concentrations but below the ceiling concentration limits may be land applied but shall not exceed the annual loading rates in Table 3 and the cumulative loading rates in Table 4. The permittee is required to track pollutant loading onto application sites for parameters that have exceeded the low metal concentration limits.

TABLE 2

| Biosolids Low Metal Concentration | |
|-----------------------------------|------------------------------------|
| Pollutant | Milligrams per kilogram dry weight |
| Arsenic | 41 |
| Cadmium | 39 |
| Copper | 1,500 |
| Lead | 300 |
| Mercury | 17 |
| Nickel | 420 |
| Selenium | 100 |
| Zinc | 2,800 |

- e. Annual pollutant loading rate.

Table 3

| Biosolids Annual Loading Rate | |
|-------------------------------|--------------------------|
| Pollutant | Kg/ha (lbs./ac) per year |
| Arsenic | 2.0 (1.79) |
| Cadmium | 1.9 (1.70) |
| Copper | 75 (66.94) |
| Lead | 15 (13.39) |
| Mercury | 0.85 (0.76) |
| Nickel | 21 (18.74) |
| Selenium | 5.0 (4.46) |
| Zinc | 140 (124.96) |

- f. Cumulative pollutant loading rates.

Table 4

| Biosolids Cumulative Pollutant Loading Rate | |
|---|-----------------|
| Pollutant | Kg/ha (lbs./ac) |
| Arsenic | 41 (37) |
| Cadmium | 39 (35) |
| Copper | 1500 (1339) |
| Lead | 300 (268) |
| Mercury | 17 (15) |
| Nickel | 420 (375) |
| Selenium | 100 (89) |
| Zinc | 2800 (2499) |

6. Best Management Practices. The permittee shall use the following best management practices during land application activities to prevent the discharge of biosolids to waters of the state.
- Biosolids shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under § 4 of the Endangered Species Act or its designated critical habitat.
 - Apply biosolids only at the agronomic rate of nitrogen needed (see 5.c. of this section).
 - The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop

nitrogen removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kgTN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

- i. PAN can be determined as follows:
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis.
 - ii. Crop nutrient production/removal to be based on crop specific nitrogen needs and realistic yield goals. **NOTE:** There are a number of reference documents on the Missouri Department of Natural Resources website that are informative to implement best management practices in the proper management of biosolids, including crop specific nitrogen needs, realistic yields on a county by county basis and other supporting references.
 - iii. Biosolids that are applied at agronomic rates shall not cause the annual pollutant loading rates identified in Table 3 to be exceeded.
- d. Buffer zones are as follows:
- i. 300 feet of a water supply well, sinkhole, 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 of dwellings or public use areas;
 - iv. 100 feet (35 feet if biosolids application is down-gradient or the buffer zone is entirely vegetated) of lake, pond, wetlands or gaining streams (perennial or intermittent);
 - v. 50 feet of a property line. Buffer distances from property lines may be waived with written permission from neighboring property owner.
 - vi. For the application of dry, cake or liquid biosolids that are subsurface injected, buffer zones identified in 5.d.i. through 5.d.iii above, may be reduced to 100 feet. The buffer zone may be reduced to 35 feet if the buffer zone is permanently vegetated. Subsurface injection does not include methods or technology reflective of combination surface/shallow soil incorporation.
- e. Slope limitation for application sites are as follows:
- i. For slopes less than or equal to 6 percent, no rate limitation;
 - ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels;
 - iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.
 - iv. Dry, cake or liquid biosolids that are subsurface injected, may be applied on slopes not to exceed 20 percent. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation.
- f. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
- g. Biosolids may be land applied to sites with soil that are snow covered, frozen, or saturated with liquid when site restrictions or other controls are provided to prevent pollutants from being discharged to waters of the state during snowmelt or stormwater runoff. During inclement weather or unfavorable soil conditions use the following management practices:
- i. A maximum field slope of 6% and a minimum 300 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be utilized for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
 - ii. A maximum field slope of 2% and 100 feet grass buffer between the application site and waters of the state. A 35 feet grass buffer may be used for the application of dry, cake or liquid biosolids that are subsurface injected. Subsurface injection does not include the use of methods or technology reflective of combination surface/shallow soil incorporation;
 - iii. Other best management practices approved by the Department.

SECTION H – SEPTAGE

1. Haulers that land apply septage must obtain a state permit. An operating permit is not required for septage haulers who transport septage to another permitted treatment facility for disposal.
2. Do not apply more than 30,000 gallons of septage per acre per year or the volume otherwise stipulated in the operating permit.
3. Septic 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 mechanical treatment facilities.
4. Septage must comply with Class B biosolids regarding pathogen and vector attraction reduction requirements before it may be applied to crops, pastures or timberland. To meet required pathogen and vector reduction requirements, mix 50 pounds of hydrated lime for every 1,000 gallons of septage and maintain a septage pH of at least 12 pH standard units for 30 minutes or more prior to application.
5. 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.
6. As residential septage contains relatively low levels of metals, the testing of metals in septage is not required.

SECTION I – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities. 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 sludges and/or biosolids. 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. Biosolids or sludge 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. Biosolids and sludge shall meet the monitoring and land application limits for agricultural rates as referenced in Section G, above.
 - 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. Alternative, site-specific application rates may be included in the closure plan for department consideration.
 - i. PAN can be determined as follows:
(Nitrate + nitrite nitrogen) + (organic nitrogen x 0.2) + (ammonia nitrogen x volatilization factor¹).
¹ Volatilization factor is 0.7 for surface application and 1 for subsurface application. Alternative volatilization factors and mineralization rates can be utilized on a case-by-case basis
4. Domestic wastewater treatment lagoons with a design treatment capacity less than or equal to 150 persons, are “similar treatment works” under the definition of septage. Therefore the sludge within the lagoons may be treated as septage during closure activities. See Section B, above. 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. Biosolids or sludge left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, and unless otherwise approved, the lagoon berm shall be demolished, and the site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion. Alternative biosolids or sludge and soil mixing ratios may be included in the closure plan for department consideration.
6. Lagoon and earthen structure 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 plant, all biosolids or sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
 - a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain $\geq 70\%$ vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate

- surface water drainage without creating erosion.
 - b. Hazardous Waste shall not be land applied or disposed during mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations pursuant to 10 CSR 25.
 - c. After demolition of the mechanical plant, the site must only contain clean fill defined in Section 260.200.1(6) RSMo 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, reclamation, or other beneficial use. Other solid wastes must be removed.
8. If biosolids or sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or I, 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 Part 503, Subpart C.

SECTION J – MONITORING FREQUENCY

1. At a minimum, biosolids or sludge 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

| Biosolids or Sludge produced and disposed (Dry Tons per Year) | Monitoring Frequency (See Notes 1, and 2) | | |
|---|--|---|----------------------------------|
| | Metals, Pathogens and Vectors, Total Phosphorus, Total Potassium | Nitrogen TKN, Nitrogen PAN ¹ | Priority Pollutants ² |
| 319 or less | 1/year | 1 per month | 1/year |
| 320 to 1650 | 4/year | 1 per month | 1/year |
| 1651 to 16,500 | 6/year | 1 per month | 1/year |
| 16,501+ | 12/year | 1 per month | 1/year |

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

² Priority pollutants (40 CFR 122.21, Appendix D, Tables II and III) are required only for permit holders that must have a pre-treatment program. Monitoring requirements may be modified and incorporated into the operating permit by the Department on a case-by-case basis.

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

- 2. Permittees that operate wastewater treatment lagoons, peak flow equalization basins, combined sewer overflow basins or biosolids or sludge lagoons that are cleaned out once a year or less, may choose to sample only when the biosolids or sludge is removed or the lagoon is closed. Test one composite sample for each 319 dry tons of biosolids or sludge removed from the lagoon during the reporting year or during lagoon closure. 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.
- 4. Biosolids and sludge monitoring shall be conducted in accordance with federal regulation 40 CFR § 503.8, Sampling and analysis.

SECTION K – 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 Standard Conditions PART III and any additional items in the Special Conditions section of this permit. This shall include dates when the biosolids or sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.
- 2. Reporting period
 - a. By February 19th of each year, applicable facilities shall submit an annual report for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and biosolids or sludge disposal facilities.
 - b. Permittees with wastewater treatment lagoons shall submit the above annual report only when biosolids or sludge are removed from the lagoon during the report period or when the lagoon is closed.
- 3. Report Form. The annual report shall be prepared on report forms provided by the Department or equivalent forms approved by the Department.
- 4. Reports shall be submitted as follows:
Major facilities, which are those serving 10,000 persons or more or with a design flow equal to or greater than 1 million gallons per day or that are required to have an approved pretreatment program, shall report to both the Department and EPA if the facility land applied, disposed of biosolids by surface disposal, or operated a sewage sludge incinerator. All other facilities shall maintain their biosolids or sludge records and keep them available to Department personnel upon request. State reports shall be submitted to the address listed as follows:

DNR regional or other applicable office listed in the permit (see cover letter of permit)

ATTN: Sludge Coordinator

Reports to EPA must be electronically submitted online via the Central Data Exchange at: <https://cdx.epa.gov/> Additional information is available at: <https://www.epa.gov/biosolids/compliance-and-annual-reporting-guidance-about-clean-water-act-laws>

5. Annual report contents. The annual report shall include the following:
 - a. Biosolids and sludge testing performed. If testing was conducted at a greater frequency than what is required by the permit, all test results must be included in the report.
 - b. Biosolids or sludge quantity shall be reported as dry tons for the quantity produced and/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 and 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 using a 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 biosolids or sludge use permit.
 - g. Land Application Sites:
 - i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
 - ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
 - iii. Report the method used for compliance with pathogen and vector attraction requirements.
 - iv. Report soil test results for pH and phosphorus. If no soil was tested during the year, report the last date when tested and the results.

AP 32644

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MAY 31 2019



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

| FOR AGENCY USE ONLY | |
|-----------------------------|-----------------------|
| CHECK NUMBER | |
| DATE RECEIVED 5-31-19 | FEE SUBMITTED 0 03 |
| JET PAY CONFIRMATION NUMBER | |

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

IF YOUR FACILITY IS ELIGIBLE FOR A NO EXPOSURE EXEMPTION:

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

1. REASON FOR APPLICATION:

- a. This facility is now in operation under Missouri State Operating Permit (permit) MO - 0101788, is submitting an application for renewal, and there is no proposed increase in design wastewater flow. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.
- b. This facility is now in operation under permit MO - _____, is submitting an application for renewal, and there is a proposed increase in design wastewater flow. Antidegradation Review may be required. Annual fees will be paid when invoiced and there is no additional permit fee required for renewal.
- c. This is a facility submitting an application for a new permit (for a new facility). Antidegradation Review may be required. New permit fee is required.
- d. This facility is now in operation under Missouri State Operating Permit (permit) MO - _____ and is requesting a modification to the permit. Antidegradation Review may be required. Modification fee is required.

2. FACILITY

| | | | |
|---|--------------------|---|-------------------|
| NAME Nestle Purina PetCare Company, Golden Products Division | | TELEPHONE NUMBER WITH AREA CODE (573) 568-2123 | |
| ADDRESS (PHYSICAL) 22450 State Highway Y | CITY Bloomfield | STATE MO | ZIP CODE 63825 |

3. OWNER

| | | | |
|---|--------------------|---|-------------------|
| NAME Nestle Purina PetCare Company, Golden Products Division (Jeff Goodmanson - Plant Manager) | | TELEPHONE NUMBER WITH AREA CODE (573) 568-5311 | |
| EMAIL ADDRESS jeff.goodmanson@purina.nestle.com | | | |
| ADDRESS (MAILING) 22450 State Highway Y | CITY Bloomfield | STATE MO | ZIP CODE 63825 |

4. CONTINUING AUTHORITY

| | | | |
|---|--------------------|---|-------------------|
| NAME Nestle Purina PetCare Company, Golden Products Division (Jeff Goodmanson - Plant Manager) | | TELEPHONE NUMBER WITH AREA CODE (573) 568-5311 | |
| EMAIL ADDRESS jeff.goodmanson@purina.nestle.com | | | |
| ADDRESS (MAILING) 22450 State Highway Y | CITY Bloomfield | STATE MO | ZIP CODE 63825 |

5. OPERATOR CERTIFICATION

| | | | |
|-------------------|--------------------|---------------------------------|----------|
| NAME N/A | CERTIFICATE NUMBER | TELEPHONE NUMBER WITH AREA CODE | |
| ADDRESS (MAILING) | CITY | STATE | ZIP CODE |

6. FACILITY CONTACT

| | | |
|---|--|---|
| NAME Daniel Chamberlin | TITLE Plant Environmental Coordinator | TELEPHONE NUMBER WITH AREA CODE (573) 568-5393 |
| E-MAIL ADDRESS daniel.chamberlin@purina.nestle.com | | |

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

| | | | |
|-------------------------------------|------|-------|----------|
| NAME See attachment and Figure 4 | | | |
| ADDRESS | CITY | STATE | ZIP CODE |

8. ADDITIONAL FACILITY INFORMATION

See Attachments for Section 8 Information

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

For Universal Transverse Mercator (UTM), use Zone 15 North referenced to North American Datum 1983 (NAD83)

001 _____ ¼ _____ ¼ Sec _____ T _____ R _____ County _____
 UTM Coordinates Easting (X): _____ Northing (Y): _____
 002 _____ ¼ _____ ¼ Sec _____ T _____ R _____ County _____
 UTM Coordinates Easting (X): _____ Northing (Y): _____
 003 _____ ¼ _____ ¼ Sec _____ T _____ R _____ County _____
 UTM Coordinates Easting (X): _____ Northing (Y): _____
 004 _____ ¼ _____ ¼ Sec _____ T _____ R _____ County _____
 UTM Coordinates Easting (X): _____ Northing (Y): 4 _____

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

Primary SIC _____ and NAICS _____ SIC _____ and NAICS _____
 SIC _____ and NAICS _____ SIC _____ and NAICS _____

9. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION

- A. Is this permit for a manufacturing, commercial, mining, solid/hazardous waste, or silviculture facility? YES NO
 If yes, complete Form C.
- B. Is the facility considered a "Primary Industry" under EPA guidelines (40 CFR Part 122, Appendix A) : YES NO
 If yes, complete Forms C and D.
- C. Is wastewater land applied? YES NO
 If yes, complete Form I.
- D. Are sludge, biosolids, ash, or residuals generated, treated, stored, or land applied? YES NO
 If yes, complete Form R. **Form R - N/A - WWTP Sludge Hauled Off-Site**
- E. Have you received or applied for any permit or construction approval under the CWA or any other environmental regulatory authority? YES NO
 If yes, please include a list of all permits or approvals for this facility. **Refer to attachments for complete permit listing**
- F. Do you use cooling water in your operations at this facility? YES NO
 If yes, please indicate the source of the water: _____
- G. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale. **See Figure #3 @ 1"=500' scale**

10. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

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

- You have completed and submitted with this permit application the required documentation to participate in the eDMR system.
- You have previously submitted the required documentation to participate in the eDMR system and/or you are currently using the eDMR system.
- You have submitted a written request for a waiver from electronic reporting. See instructions for further information regarding waivers.

11. FEES

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

12. CERTIFICATION

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

| | |
|--|---|
| NAME AND OFFICIAL TITLE (TYPE OR PRINT) <i>Self D. Cunningham Factory Manager</i> | TELEPHONE NUMBER WITH AREA CODE 573 568 5311 |
| SIGNATURE <i>[Signature]</i> | DATE SIGNED 5/28/19 |

Permit Attachments

General Comment

Permitted Outfalls #001, #002, #003, #004, #005 and #006 are commonly referred to on-site as #001-B, #002-B, #003-B, #004-B, #005-B and #006-B, the 'B' refers to the 'Bloomfield Plant'. This is to avoid confusion with outfalls with the same number at the nearby open pit clay mine that is also owned by Nestle Purina PetCare. As such, all outfalls in this application are referred to with the '-B' suffix.

Form A – Application For Nondomestic Permit Under Missouri Clean Water Law

Section 7 Downstream Landowners (Note: Landowner location shown on Figure 4)

- A. Billy Eaker Sr. and Billy Eaker Jr.
- B. Asa and Patricia Louise Kinnaman
- C. Glaus Children's Trust
- D. James Byron Wright
- E. Kevin Stubenrauch
- F. Winford Watkins Jr.
- G. William Pinnell Hunter Trust
- H. Little River Drainage District
- I. United States of America
- J. Patricia K Hunter
- K. Burch Real Estate Partners LP
- L. C. D. Stewart
- M. M & A Electric Power Cooperative
- N. Fred Lincoln Scherer
- O. Billy Lee Green

Section 8.1 Legal Description of Outfalls (Note: UTM coordinates are in Zone 16N referenced to NAD83 as that is the correct UTM zone for the location of the site. Previous permit uses Zone 15N)

#001-B NW ¼, NE ¼, Sec 28, T27N, R11E Stoddard County
UTM Coordinates Easting (X): 244,650.10 Northing (Y): 4,094,140.46

#002-B NW ¼, NE ¼, Sec 28, T27N, R11E Stoddard County
UTM Coordinates Easting (X): 244,731.21 Northing (Y): 4,094,436.71

#003-B SW ¼, NE ¼, Sec 28, T27N, R11E Stoddard County
UTM Coordinates Easting (X): 244,452.91 Northing (Y): 4,094,133.16

#004-B NW ¼, NE ¼, Sec 28, T27N, R11E Stoddard County
UTM Coordinates Easting (X): 244,736.56 Northing (Y): 4,094,415.10

#005-B NE ¼, SW ¼, Sec 21, T27N, R11E Stoddard County

Missouri State Operating Permit MO-0101788
NPDES Permit Renewal

UTM Coordinates Easting (X): 244,483.27 Northing (Y): 4,095,297.63

#006-B NW ¼, NE ¼, Sec 28, T27N, R11E Stoddard County

UTM Coordinates Easting (X): 244,725.59 Northing (Y): 4,094,388.8

Section 8.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes for each outfall.

#001-B SIC: 1459 NAICS: 212325

#002-B SIC: 4952 NAICS: 212325

#003-B SIC: 1459 NAICS: 212325

#004-B SIC: 1459 NAICS: 212325

#005-B SIC: 1459 NAICS: 212325

#006-B SIC: 1459 NAICS: 212325

Section 9. E Listing of other Environmental Permits

| Media | Type | Issuing Agency | Regulatory/ Permit ID | Geographic Area | Expiration Date | Comments |
|-------|--|--|--------------------------|--|-----------------|-------------------------|
| Land | Mine/Land Reclamation | Missouri Mining Commission | 552 | Site #1 - North Warehouse Grounds (144 acres) | 5/29/2020 | |
| | | | | Site #2 - North Warehouse Grounds (200 acres) | | |
| | | | | Site #3 - Avert Open Pit Clay Mine (237 acres) | | |
| Water | Site-Specific Operating Permit (Surface Water Discharge) | Missouri DNR, Water Protection Program /Clean Water Commission | MO-0101788 | Plant & Warehouse (Outfalls receiving stormwater and washdown water) | 11/30/2019 | |
| | General Operating Permit (Surface Water Discharge) | | MO-G840102 | Avert Avert Open Pit Clay Mine | 6/30/2021 | |
| | Land Disturbance, General Operating Permit (Surface Water Discharge) | | MORA13029 | LDEL Expansion Plant (Approx. 17 acres) | 2/7/2022 | |
| | | | MORA12614 | Southwest & Southeat Fill Areas (Approx. 35 acres) | 2/7/2022 | |
| Air | New Source Review | Missouri DNR, Missouri Air Conservation Commission | 012019-007 | Processing Plant | | Approval Date 1/23/2019 |
| | New Source Review | | 012019-001 | Processing Plant | | Approval 1/2/2019 |
| | And previous other permits | | | | | |
| Waste | Hazardous Waste - CESQG | Missouri / US EPA | MOR000001750 | | N/A | |



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
**FORM C – APPLICATION FOR DISCHARGE PERMIT – MANUFACTURING, COMMERCIAL,
 MINING, SILVICULTURE OPERATIONS, AND STORMWATER**

GENERAL INFORMATION (PLEASE SEE INSTRUCTIONS)

1.0 NAME OF FACILITY
 Nestle Purina PetCare Company, Golden Products Division

1.1 THIS FACILITY IS OPERATING UNDER MISSOURI STATE OPERATING PERMIT (MSOP) NUMBER:
 MO-0101788

1.2 IS THIS A NEW FACILITY? PROVIDE CONSTRUCTION PERMIT (CP) NUMBER IF APPLICABLE.
 NA

1.3 Describe the nature of the business, in detail. Identify the goods and services provided by the business. Include descriptions of all raw, intermediate, final products, byproducts, or waste products used in the production or manufacturing process, stored outdoors, loaded or transferred and any other pertinent information for potential sources of wastewater or stormwater discharges.

Nestle Purina PetCare operates a pet litter production plant in Bloomfield, Missouri. The local clay material (montmorillonite) used in the litter production is mined at a separate Nestle Purina-owned facility approximately 2 miles south of this plant, the main production plant. Powdered sodium bentonite and granulated perlite are transported to the site via truck and rail. Other ingredients that are used for odor control and to create other characteristics of the litter are also transported by truck and rail. All raw materials and additives are stored indoors or in bins with no exposure to stormwater. The raw materials are processed using equipment including dryers, conveyors, elevators, mills, screens, and packaging equipment. Off specification Perlite, unused clay and off specification clay litter is placed as fill in MDNR permitted mined land reclamation areas. Please refer to the appendices for further descriptions of these materials. The plant also operates a wastewater treatment facility (WWTP) with a design population equivalent of 100. The wastewater facility is an extended aeration wastewater treatment plant. STP sludge is disposed of off-site.

FLOWS, TYPE, AND FREQUENCY

2.0 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 and maximum flows between intakes, operations, treatment units, evaporation, 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.

2.1 For each outfall (1) below, provide: (2) a description of all operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, stormwater runoff, and any other process or non-process wastewater, (3) the average flow and maximum flow (put max in parentheses) contributed by each operation and the sum of those operations, (4) the treatment received by the wastewater, and (5) the treatment type code. Continue on additional sheets if necessary.

Refer to Figure 2

| 1. OUTFALL NO. | 2. OPERATION(S) CONTRIBUTING FLOW; INCLUDE ALL PROCESSES AND SUB PROCESSES AT EACH OUTFALL. | 3. AVERAGE FLOW AND (MAXIMUM FLOW), INCLUDE UNITS. | 4. TREATMENT DESCRIPTION | 5. TREATMENT CODES FROM TABLE A |
|----------------|---|--|-----------------------------|---------------------------------|
| #001-B | Industry/Clay Surface Mining/Stormwater Runoff | refer to appendices | Settling and Discharge | 1-U, 4-A |
| #002-B | Domestic Waste | refer to appendices | Extended Aeration Treatment | 3-A 4-A 3-B 2-H |
| #003-B | Industry/Clay Surface Mining/Stormwater Runoff | refer to appendices | Settling and Discharge | 1-U, 4-A |
| #004-B | Industry/Clay Surface Mining/Stormwater Runoff | refer to appendices | Discharge to Surface Water | 4-A |
| #005-B | Industry/Clay Surface Mining/Stormwater Runoff | refer to appendices | Settling and Discharge | 1-U, 4-A |
| #006-B | Industry/Clay Surface Mining/Stormwater Runoff | refer to appendices | Discharge to Surface Water | 4-A |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Attach additional pages if necessary.

2.2 INTERMITTENT DISCHARGES

Except for stormwater runoff, leaks, or spills, are any of the discharges described in items 2.0 or 2.1 intermittent or seasonal?

Yes (complete the following table) No (go to section 2.3)

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

2.3 PRODUCTION

A. Does an effluent limitation guideline (ELG) promulgated by EPA under section 304 of the Clean Water Act apply to your facility? Indicate the part and subparts applicable.

Yes 40 CFR _____ Subpart(s) _____ No (go to section 2.5)

B. Are the limitations in the effluent guideline(s) expressed in terms of production (or other measure of operation)? Describe in C below.

Yes (complete C.) No (go to section 2.5)

C. If you answered "yes" to B, list the quantity representing 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.

| A. OUTFALL(S) | B. QUANTITY PER DAY | C. UNITS OF MEASURE | D. OPERATION, PRODUCT, MATERIAL, ETC. (specify) |
|---------------|---------------------|---------------------|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

2.4 IMPROVEMENTS

A. Are you 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 which 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 2.6)

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

B. Optional: provide below or attach additional sheets describing water pollution control programs or other environmental projects which may affect discharges. Indicate whether each program is underway or planned, and indicate actual or planned schedules for construction. This may include proposed bmp projects for stormwater.

2.5 SLUDGE MANAGEMENT

Describe the removal of any industrial or domestic biosolids or sludges generated at your facility. Include names and contact information for any haulers used. Note the frequency, volume, and methods (incineration, landfilling, composting, etc) used. See Form A for additional forms which may need to be completed.

Waste water treatment sludge is routinely removed on a quarterly basis. The plant generates approximately 3.5 dry tons per year. The material is collected by and transported by Dorris Plumbing and Mechanical (2605 Fair St. Poplar Bluff, MO, 63901 573-785-7574). The sludge is delivered to the Dexter East Wastewater Treatment Facility (301 Ease Stoddard St. Dexter, MO, 63841) for disposal under Missouri Permit MO-0023213.

DATA COLLECTION AND REPORTING REQUIREMENTS FOR APPLICANTS

3.0 EFFLUENT (AND INTAKE) CHARACTERISTICS (SEE INSTRUCTIONS)

A. & B. See instructions before continuing – complete one Table 1 for **each outfall** (and intake) – annotate the outfall (intake) number or designation in the space provided. The facility is not required to complete intake data unless required by the department or rule.

C. Use the space below to list any pollutants listed in the instructions section 3.0 C. Table B which you know or have reason to believe is discharged or may be discharged from any outfall not listed in parts 3.0 A or B on Table 1. For every pollutant listed, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

| 1. POLLUTANT | 2. SOURCE | 3. OUTFALL(S) | 4. ANALYTICAL RESULTS (INCLUDE UNITS) |
|--------------|-----------|---------------|---------------------------------------|
| None | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

3.1 Whole Effluent Toxicity Testing

A. To your knowledge, have any Whole Effluent Toxicity (WET) tests been performed on the facility discharges (or on receiving waters in relation to your discharge) within the last three years?

Yes (go to 3.1 B) No (go to 3.2)

3.1 B

Disclose wet testing conditions, including test duration (chronic or acute), the organisms tested, and the testing results. Provide any results of toxicity identification evaluations (TIE) or toxicity reduction evaluations (TRE) if applicable. Please indicate the conclusions of the test(s) including any pollutants identified as causing toxicity and steps the facility is taking to remedy the toxicity.

A WET test was performed with a sample from Outfall #001-B. Duration - 48 hours (acute), Species - Pimephales promelas and Ceriodaphnia dubia, Results - 100% 48 hour survival for all species at all concentrations of effluent. Lab results are attached.

3.2 CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported herein, above, or on Table 1 performed by a contract laboratory or consulting firm?

Yes (list the name, address, telephone number, and pollutants analyzed by each laboratory or firm.) No (go to 4.0)

| A. LAB NAME | B. ADDRESS | C. TELEPHONE <i>(area code and number)</i> | D. POLLUTANTS ANALYZED <i>(list or group)</i> |
|------------------------------|---|---|---|
| Environmental Analysis South | 4000 E. Jackson Blvd Jackson, MO 63755 | (573) 204-8817 | The pollutants listed in Part 3 of this application |
| N/A | | | |

4.0 STORMWATER

4.1
 Do you have industrial stormwater discharges from the site? If so, attach a site map outlining drainage areas served by each outfall. Indicate the following attributes within each drainage area: pavement or other impervious surfaces; buildings; outdoor storage areas; material loading and unloading areas; outdoor industrial activities; structural stormwater control measures; hazardous waste treatment, storage, and disposal units; and wells or springs in the area.

| OUTFALL NUMBER | TOTAL AREA DRAINED (PROVIDE UNITS) | TYPES OF SURFACES (VEGETATED, STONE , PAVED, ETC) | BEST MANAGEMENT PRACTICES EMPLOYED; INCLUDE STRUCTURAL BMPs AND TREATMENT DESIGN FLOW FOR BMPs DESCRIBE HOW FLOW IS MEASURED |
|----------------|------------------------------------|---|--|
| 001-B | 34.1 ac. | Refer to Attachment 4.1 | Refer to Attachment 4.1 |
| 003-B | 93.8 ac. | Refer to Attachment 4.1 | Refer to Attachment 4.1 |
| 004-B | 11.1 ac. | Refer to Attachment 4.1 | Refer to Attachment 4.1 |
| 005-B | 71.9 ac. | Refer to Attachment 4.1 | Refer to Attachment 4.1 |
| 006-B | 2.9 ac. | Refer to Attachment 4.1 | Refer to Attachment 4.1 |
| | | | |
| | | | |

4.2 STORMWATER FLOWS
 Provide the date of sampling with the flows, and how the flows were estimated.
 Refer to attachments.

SIGNATORY REQUIREMENTS

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

| | |
|---|---------------------------------|
| NAME AND OFFICIAL TITLE (TYPE OR PRINT) | TELEPHONE NUMBER WITH AREA CODE |
| <i>Jeff A Gudimov, Factory Manager</i> | 573 565 5311 |
| SIGNATURE (SEE INSTRUCTIONS) | DATE SIGNED |
| <i>[Signature]</i> | 5/28/19 |

Permit Attachments

Form C – Application for Discharge Permit – Manufacturing, Commercial, Mining, Silviculture Operations, and Stormwater

**General Information – Nature of by products, or waste products.
 Section 1.3**

Fill Material Descriptions

Note that the following materials have been placed as fill in MDNR-permitted mined land reclamation areas on the Plant since at least early 2013.

Off-Spec Perlite

Approximately 80 percent (by volume) of the fill will be fine-grain sand consisting of heat-expanded perlite (natural hydrated volcanic glass or obsidian) with the following chemical composition:

| Perlite Constituent | Composition % (by weight) |
|---|--------------------------------------|
| Silicon dioxide (SiO ₂) | 70 to 75 |
| Aluminum oxide: (Al ₂ O ₃) | 12 to 15 |
| Potassium oxide (K ₂ O) | 3 to 5 |
| Sodium oxide (Na ₂ O) | 3 to 4 |
| Iron oxide (Fe ₂ O ₃) | 0.5 to 2 |

This material has a unit weight of approximately 7.5 pounds per cubic foot and has the following grain size character.

| Grain Size Category | Size Range | | Approx. Percentage By Weight |
|----------------------------|-------------------|----------------------------|---|
| | Inches | US Std. Sieve Sizes | |
| Medium Sand | 0.033 to 0.024 | 20 to 30 | 12 |
| Fine Sand | 0.02 to 0.003 | 30 to 200 | 88 |

Clay Cap Material (Unused Clay and Off-Spec Clay Litter)

Approximately 20 percent (by volume) of the fill will be unused clay and off-spec clay pet litters. This material will form an approximate two-foot thick clay cap for the SW Fill Area and includes the following:

| Material Type | Components | Generation Process |
|--------------------------|---|---|
| Unusable clay | Locally-mined montmorillonite | Granular or dust material spilled during production or otherwise not incorporated into a finished pet litter product. |
| | Imported sodium bentonite | |
| Off-spec clay pet litter | Heat-expanded Perlite as medium-grain sand | Granular finished litter that spilled or otherwise did not meet quality specifications for consumer purchase. |
| | Locally-mined montmorillonite | |
| | Imported sodium bentonite | |
| | Food-grade pigments, fragrances and other additives | These additives account for less than 3% by weight of the off-spec pet litter. |

Section 2.1

MGD – million gallons per day

GPD – gallons per day

#001-B - Design flow is 6.06 MGD, actual flow is dependent on rainfall

#002-B - Design flow is 10,000 GPD, actual flow is approximately 3,000 GPD

#003-B - Actual flow is dependent on rainfall

#004-B - Actual flow is dependent on rainfall

#005-B - Actual flow is dependent on rainfall

#006-B - Actual flow is dependent on rainfall

Section 4.1

| | Watershed Size (ac) | Watershed % by Land Use | | | | |
|----------------|---------------------|-------------------------|-------|---------------------|--------|--------------------|
| | | Vegetated Soils | Water | Pavement / Rooftops | Gravel | Un-vegetated Soils |
| Outfall #001-B | 34.1 | 1.8% | 81.2% | 0.0% | 17.0% | 0.0% |
| Outfall #003-B | 93.8 | 71.9% | 6.5% | 0.0% | 5.9% | 15.7% |
| Outfall #004-B | 11.1 | 12.2% | 0.0% | 87.8% | 0.0% | 0.0% |
| Outfall #005-B | 71.9 | 61.4% | 38.5% | 0.0% | 0.1% | 0.0% |
| Outfall #006-B | 2.9 | 2.1% | 0.0% | 63.2% | 34.8% | 0.0% |

The industrial plant area encompasses approximately 142 acres.

| BMP Types found in Watershed | |
|------------------------------|---|
| Outfall #001-B | Sediment Pond, Silt Booms, Mat filters at stormwater inlets, |
| Outfall #003-B | Sediment Pond, Silt Booms, Mat filters at spillway inlet, silt fence, straw bales in ditches, vegetative strip filter |
| Outfall #004-B | Mat filters or straw bales at stormwater inlet, rock riprap lining in ditches |
| Outfall #005-B | Vegetated watershed, sedimentation pond |
| Outfall #006-B | Mat filters or straw bales at stormwater inlet, gravel and concrete pavement |

Section 4.2

Analysis reported within this renewal application was obtained from the following:

- 1) Sampling for the eDMRs submitted on Dec '18 & Feb '19. Maximum 30 day values and long term averages have been previously submitted to the Department through the DMR system.
- 2) A supplemental sample collected May 1, 2019 for the purposes of completing this application. Reporting maximum 30 day values and long term averages are not applicable for these pollutants.

Combined results for substantially identical outfalls - sample obtained at Outfall #001B

FORM C TABLE 1 FOR 3.0 - ITEMS A AND B

SEE INSTRUCTIONS; PLEASE PRINT OR TYPE.
You may report some or all of this information on separate sheet (use similar format) instead of completing these pages.

| EFFLUENT (AND INTAKE) CHARACTERISTICS | | THIS OUTFALL IS: COMBINED FOR OUTFALL #001-B AND #004-B | | | | OUTFALL NO. #001-B | |
|---|------------------------|---|---|--------------------------|-----------------------------|--------------------|-----------------------------------|
| 3.0 PART A - You must provide the results of at least one analysis for every pollutant in Part A. Complete one table for each outfall or proposed outfall. See instructions. | | | | | | | |
| 1. POLLUTANT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUES | | C. LONG TERM AVERAGE VALUES | | 3. UNITS (specify if blank) |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | |
| A. Biochemical Oxygen Demand, 5-day (BOD ₅) | 3.72 | | NA | | NA | | mg/L |
| B. Chemical Oxygen Demand (COD) | 3 | | Long term values can be obtained from the eDMR system | | | | mg/L |
| C. Total Organic Carbon (TOC) | 4.7 | | NA | | NA | | mg/L |
| D. Total Suspended Solids (TSS) | 90 | | Long term values can be obtained from the eDMR system | | | | mg/L |
| E. Ammonia as N | <0.020 | | NA | | NA | | mg/L |
| F. Flow | VALUE | 1.0153 | Actual flow is dependent upon rainfall | | VALUE | | MILLIONS OF GALLONS PER DAY (MGD) |
| G. Temperature (winter) | VALUE | | VALUE | | VALUE | | °F |
| H. Temperature (summer) | VALUE | | VALUE | | VALUE | | °F |
| I. pH | MINIMUM | 7.7 | Long term values can be obtained from the eDMR system | | MAXIMUM | | STANDARD UNITS (SU) |
| 3.0 PART B - Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark Column 2A for any pollutant, you must provide the results for at least one analysis for the pollutant. Complete one table for each outfall (intake). Provide results for additional parameters not listed here in Part 3.0 C. | | | | | | | |
| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | 4. UNITS |
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | B. MAXIMUM 30 DAY VALUES | C. LONG TERM AVERAGE VALUES | | |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | A. CONCENTRATION |
| Subpart 1 - Conventional and Non-Conventional Pollutants | | | | | | | |
| A. Alkalinity (CaCO ₃) | | XX | MINIMUM | | MINIMUM | | |
| B. Bromide (24959-67-9) | | XX | | | | | |
| C. Chloride (16887-00-6) | | XX | | | | | |
| D. Chlorine, Total Residual | | XX | | | | | |
| E. Color | | XX | | | | | |
| F. Conductivity | XX | | 658 | NA | | NA | µmhos/cm |
| F. Cyanide, Amenable to Chlorination | | XX | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | | | 4. UNITS | | |
|---|---------------------|--------------------|------------------------|------|---|------|----------------------------|------|--------------------|------------------|---------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE | | C. LONG TERM AVERAGE VALUE | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS | | | |
| Subpart 1 – Conventional and Non-Conventional Pollutants (Continued) | | | | | | | | | | | |
| G. <i>E. coli</i> | | XX | | | | | | | | | |
| H. Fluoride (16984-48-8) | | XX | | | | | | | | | |
| I. Nitrate plus Nitrate (as N) | XX | | 6.34 | | NA | | NA | | 1 | mg/L | NA |
| J. Kjeldahl, Total (as N) | XX | | <0.150 | | NA | | NA | | 1 | mg/L | NA |
| K. Nitrogen, Total Organic (as N) | | XX | | | | | | | | | |
| L. Oil and Grease | XX | | 2.2 | | Long term values can be obtained from the eDMR system | | | 1 | | mg/L | NA |
| M. Phenols, Total | | XX | | | | | | | | | |
| N. Phosphorus (as P), Total (7723-14-0) | XX | | 0.381 | | NA | | NA | | 1 | mg/L | NA |
| O. Sulfate (as SO ₄) (14808-79-8) | | XX | | | | | | | | | |
| P. Sulfide (as S) | | XX | | | | | | | | | |
| Q. Sulfite (as SO ₃) (14265-45-3) | | XX | | | | | | | | | |
| R. Surfactants | | XX | | | | | | | | | |
| S. Trihalomethanes, Total | | XX | | | | | | | | | |
| Subpart 2 – Metals | | | | | | | | | | | |
| 1M. Aluminum, Total Recoverable (7429-90-5) | | XX | | | | | | | | | |
| 2M. Antimony, Total Recoverable (7440-36-9) | | XX | | | | | | | | | |
| 3M. Arsenic, Total Recoverable (7440-38-2) | | XX | | | | | | | | | |
| 4M. Barium, Total Recoverable (7440-39-3) | | XX | | | | | | | | | |
| 5M. Beryllium, Total Recoverable (7440-41-7) | | XX | | | | | | | | | |
| 6M. Boron, Total Recoverable (7440-42-8) | | XX | | | | | | | | | |
| 7M. Cadmium, Total Recoverable (7440-43-9) | | XX | | | | | | | | | |
| 8M. Chromium III Total Recoverable (16065-83-1) | | XX | | | | | | | | | |
| 9M. Chromium VI, Dissolved (18540-29-9) | | XX | | | | | | | | | |
| 10M. Cobalt, Total Recoverable (7440-48-4) | | XX | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | | | 4. UNITS | | |
|--|---------------------|--------------------|------------------------|------|-------------------------|------|----------------------------|------|--------------------|------------------|---------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE | | C. LONG TERM AVERAGE VALUE | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS | | | |
| Subpart 2 – Metals (Continued) | | | | | | | | | | | |
| 11M. Copper, Total Recoverable (7440-50-8) | | XX | | | | | | | | | |
| 12M. Iron, Total Recoverable (7439-89-6) | | XX | | | | | | | | | |
| 13M. Lead, Total Recoverable (7439-92-1) | | XX | | | | | | | | | |
| 14M. Magnesium, Total Recoverable (7439-95-4) | | XX | | | | | | | | | |
| 15M. Manganese, Total Recoverable (7439-96-5) | | XX | | | | | | | | | |
| 16M. Mercury, Total Recoverable (7439-97-6) | | XX | | | | | | | | | |
| 17M. Methylmercury (22967926) | | XX | | | | | | | | | |
| 18M. Molybdenum, Total Recoverable (7439-98-7) | | XX | | | | | | | | | |
| 19M. Nickel, Total Recoverable (7440-02-0) | | XX | | | | | | | | | |
| 20M. Selenium, Total Recoverable (7782-49-2) | | XX | | | | | | | | | |
| 21M. Silver, Total Recoverable (7440-22-4) | | XX | | | | | | | | | |
| 22M. Thallium, Total Recoverable (7440-28-0) | | XX | | | | | | | | | |
| 23M. Tin, Total Recoverable (7440-31-5) | | XX | | | | | | | | | |
| 24M. Titanium, Total Recoverable (7440-32-6) | | XX | | | | | | | | | |
| 25M. Zinc, Total Recoverable (7440-66-6) | | XX | | | | | | | | | |
| Subpart 3 – Radioactivity | | | | | | | | | | | |
| 1R. Alpha Total | | XX | | | | | | | | | |
| 2R. Beta Total | | XX | | | | | | | | | |
| 3R. Radium Total | | XX | | | | | | | | | |
| 4R. Radium 226 plus 228 Total | | XX | | | | | | | | | |

EFFLUENT (AND INTAKE) CHARACTERISTICS THIS OUTFALL IS: OUTFALL #002-B OUTFALL NO. #002-B

3.0 PART A - You must provide the results of at least one analysis for every pollutant in Part A. Complete one table for each outfall or proposed outfall. See instructions.

| 1. POLLUTANT | 2. VALUES | | | | | | 3. UNITS (specify if blank) | | | | |
|---|------------------------|----------|---|----------|-----------------------------|----------|-----------------------------|------------------|---------|---------------------|--|
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUES | | C. LONG TERM AVERAGE VALUES | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | | |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | | |
| A. Biochemical Oxygen Demand, 5-day (BOD ₅) | 4.96 | | | | | | 1 | mg/L | NA | NA | |
| B. Chemical Oxygen Demand (COD) | 43 | | NA | | | | 1 | mg/L | NA | NA | |
| C. Total Organic Carbon (TOC) | 11 | | NA | | | | 1 | mg/L | NA | NA | |
| D. Total Suspended Solids (TSS) | 7 | | Long term values can be obtained from the eDMR system | | | | 1 | mg/L | NA | NA | |
| E. Ammonia as N | <0.02 | | Long term values can be obtained from the eDMR system | | | | 1 | mg/L | NA | NA | |
| F. Flow | VALUE 0.0032 | | VALUE See Part C Section 2.1 for design | | | | 1 | MGD | | | |
| G. Temperature (winter) | VALUE | | VALUES | | | | | | | °F | |
| H. Temperature (summer) | VALUE | | VALUES | | | | | | | °F | |
| I. pH | MINIMUM 6.97 | | MAXIMUM | | | | 1 | | | STANDARD UNITS (SU) | |

3.0 PART B - Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark Column 2A for any pollutant, you must provide the results for at least one analysis for the pollutant. Complete one table for each outfall (intake). Provide results for additional parameters not listed here in Part 3.0 C.

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | | | 4. UNITS | | |
|--|---------------------|--------------------|------------------------|------|--------------------------|------|-----------------------------|------|--------------------|------------------|---------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUES | | C. LONG TERM AVERAGE VALUES | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS | | | |
| Subpart 1 - Conventional and Non-Conventional Pollutants | | | | | | | | | | | |
| A. Alkalinity (CaCO ₃) | | XX | MINIMUM | | | | | | | | |
| B. Bromide (24959-67-9) | | XX | | | | | | | | | |
| C. Chloride (16887-00-6) | | XX | | | | | | | | | |
| D. Chlorine, Total Residual | | XX | | | | | | | | | |
| E. Color | | XX | | | | | | | | | |
| F. Conductivity | | XX | | | | | | | | | |
| F. Cyanide, Amenable to Chlorination | | XX | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | | | 4. UNITS | | | | |
|---|---------------------|--------------------|------------------------|------|---|------|----------------------------|------|--------------------|------------------|---------|---------|----|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE | | C. LONG TERM AVERAGE VALUE | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | | |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS | | | | | |
| Subpart 1 – Conventional and Non-Conventional Pollutants (Continued) | | | | | | | | | | | | | |
| G. <i>E. coli</i> | XX | | 631 | | Long term values can be obtained from the eDMR system | | | | | | 1 | #/100mL | NA |
| H. Fluoride (16984-48-8) | | XX | | | | | | | | | | | |
| I. Nitrate plus Nitrate (as N) | | XX | | | | | | | | | | | |
| J. Kjeldahl, Total (as N) | | XX | | | | | | | | | | | |
| K. Nitrogen, Total Organic (as N) | | XX | | | | | | | | | | | |
| L. Oil and Grease | XX | | <2 | | Long term values can be obtained from the eDMR system | | | | | | 1 | mg/L | NA |
| M. Phenols, Total | | XX | | | | | | | | | | | |
| N. Phosphorus (as P), Total (7723-14-0) | | XX | | | | | | | | | | | |
| O. Sulfate (as SO ₄) (14808-79-8) | | XX | | | | | | | | | | | |
| P. Sulfide (as S) | | XX | | | | | | | | | | | |
| Q. Sulfite (as SO ₃) (14265-45-3) | | XX | | | | | | | | | | | |
| R. Surfactants | | XX | | | | | | | | | | | |
| S. Trihalomethanes, Total | | XX | | | | | | | | | | | |
| Subpart 2 – Metals | | | | | | | | | | | | | |
| 1M. Aluminum, Total Recoverable (7429-90-5) | | XX | | | | | | | | | | | |
| 2M. Antimony, Total Recoverable (7440-36-9) | | XX | | | | | | | | | | | |
| 3M. Arsenic, Total Recoverable (7440-38-2) | | XX | | | | | | | | | | | |
| 4M. Barium, Total Recoverable (7440-39-3) | | XX | | | | | | | | | | | |
| 5M. Beryllium, Total Recoverable (7440-41-7) | | XX | | | | | | | | | | | |
| 6M. Boron, Total Recoverable (7440-42-8) | | XX | | | | | | | | | | | |
| 7M. Cadmium, Total Recoverable (7440-43-9) | | XX | | | | | | | | | | | |
| 8M. Chromium III Total Recoverable (16065-83-1) | | XX | | | | | | | | | | | |
| 9M. Chromium VI, Dissolved (18540-29-9) | | XX | | | | | | | | | | | |
| 10M. Cobalt, Total Recoverable (7440-48-4) | | XX | | | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | | | 4. UNITS | | |
|--|---------------------|--------------------|------------------------|------|-------------------------|------|----------------------------|------|--------------------|------------------|---------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE | | C. LONG TERM AVERAGE VALUE | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS | | | |
| Subpart 2 – Metals (Continued) | | | | | | | | | | | |
| 11M. Copper, Total Recoverable (7440-50-8) | | XX | | | | | | | | | |
| 12M. Iron, Total Recoverable (7439-89-6) | | XX | | | | | | | | | |
| 13M. Lead, Total Recoverable (7439-92-1) | | XX | | | | | | | | | |
| 14M. Magnesium, Total Recoverable (7439-95-4) | | XX | | | | | | | | | |
| 15M. Manganese, Total Recoverable (7439-96-5) | | XX | | | | | | | | | |
| 16M. Mercury, Total Recoverable (7439-97-6) | | XX | | | | | | | | | |
| 17M. Methylmercury (22967926) | | XX | | | | | | | | | |
| 18M. Molybdenum, Total Recoverable (7439-98-7) | | XX | | | | | | | | | |
| 19M. Nickel, Total Recoverable (7440-02-0) | | XX | | | | | | | | | |
| 20M. Selenium, Total Recoverable (7782-49-2) | | XX | | | | | | | | | |
| 21M. Silver, Total Recoverable (7440-22-4) | | XX | | | | | | | | | |
| 22M. Thallium, Total Recoverable (7440-28-0) | | XX | | | | | | | | | |
| 23M. Tin, Total Recoverable (7440-31-5) | | XX | | | | | | | | | |
| 24M. Titanium, Total Recoverable (7440-32-6) | | XX | | | | | | | | | |
| 25M. Zinc, Total Recoverable (7440-66-6) | | XX | | | | | | | | | |
| Subpart 3 – Radioactivity | | | | | | | | | | | |
| 1R. Alpha Total | | XX | | | | | | | | | |
| 2R. Beta Total | | XX | | | | | | | | | |
| 3R. Radium Total | | XX | | | | | | | | | |
| 4R. Radium 226 plus 228 Total | | XX | | | | | | | | | |

Combined results for substantially identical outfalls - sample obtained at Outfall #003B

SEE INSTRUCTIONS; PLEASE PRINT OR TYPE.
You may report some or all of this information on separate sheet (use similar format) instead of completing these pages.

FORM C TABLE 1 FOR 3.0 - ITEMS A AND B

OUTFALL NO. #003-B

THIS OUTFALL IS: COMBINED FOR OUTFALLS #003-B, #005-B, & #006-B

3.0 PART A - You must provide the results of at least one analysis for every pollutant in Part A. Complete one table for each outfall or proposed outfall. See instructions.

| 1. POLLUTANT | 2. VALUES | | | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS | | |
|---|------------------------|----------|---|----------|--------------------|-----------------------------------|---------|-----------------------------|----------|
| | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUES | | | | | C. LONG TERM AVERAGE VALUES | |
| | (1) CONCENTRATION | (2) MASS | (1) CONCENTRATION | (2) MASS | | | | (1) CONCENTRATION | (2) MASS |
| A. Biochemical Oxygen Demand, 5-day (BOD ₅) | <2 | | | | 1 | mg/L | NA | | |
| B. Chemical Oxygen Demand (COD) | 28 | | Long term values can be obtained from the eDMR system | | 1 | mg/L | NA | | |
| C. Total Organic Carbon (TOC) | 4.6 | NA | | | 1 | mg/L | NA | | |
| D. Total Suspended Solids (TSS) | 29 | | Long term values can be obtained from the eDMR system | | 1 | mg/L | NA | | |
| E. Ammonia as N | <0.020 | NA | | | 1 | mg/L | NA | | |
| F. Flow | VALUE 0.6030 | VALUE | Actual flow is dependent upon rainfall | | | MILLIONS OF GALLONS PER DAY (MGD) | | | |
| G. Temperature (winter) | VALUE | VALUE | | | | °F | | | |
| H. Temperature (summer) | VALUE | VALUE | | | | °F | | | |
| I. pH | MINIMUM 8.23 | | Long term values can be obtained from the eDMR system | | 1 | STANDARD UNITS (SU) | | | |

3.0 PART B - Mark "X" in column 2A for each pollutant you know or have reason to believe is present. Mark "X" in column 2B for each pollutant you believe to be absent. If you mark Column 2A for any pollutant, you must provide the results for at least one analysis for the pollutant. Complete one table for each outfall (intake). Provide results for additional parameters not listed here in Part 3.0 C.

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | 4. UNITS | |
|--|---------------------|--------------------|------------------------|------|--------------------------|------|-----------------------------|----------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUES | | C. LONG TERM AVERAGE VALUES | |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS |
| A. Alkalinity (CaCO ₃) | | XX | MINIMUM | | MINIMUM | | | |
| B. Bromide (24959-67-9) | | XX | | | | | | |
| C. Chloride (16887-00-6) | | XX | | | | | | |
| D. Chlorine, Total Residual | | XX | | | | | | |
| E. Color | | XX | | | | | | |
| F. Conductivity | XX | | 590 | | NA | | | µmhos/cm |
| F. Cyanide, Amenable to Chlorination | | XX | | | | | | |

Subpart 1 - Conventional and Non-Conventional Pollutants

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | | | 4. UNITS | | |
|---|---------------------|--------------------|------------------------|------|---|------|----------------------------|------|--------------------|------------------|---------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE | | C. LONG TERM AVERAGE VALUE | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS | | | |
| Subpart 1 – Conventional and Non-Conventional Pollutants (Continued) | | | | | | | | | | | |
| G. <i>E. coli</i> | | XX | | | | | | | | | |
| H. Fluoride (16984-48-8) | | XX | | | | | | | | | |
| I. Nitrate plus Nitrate (as N) | XX | | <0.012 | | NA | | NA | | 1 | mg/L | NA |
| J. Kjeldahl, Total (as N) | XX | | <0.150 | | NA | | NA | | 1 | mg/L | NA |
| K. Nitrogen, Total Organic (as N) | | XX | | | | | | | | | |
| L. Oil and Grease | XX | | <2 | | Long term values can be obtained from the eDMR system | | | 1 | | mg/L | NA |
| M. Phenols, Total | | XX | | | | | | | | | |
| N. Phosphorus (as P), Total (7723-14-0) | XX | | <0.050 | | NA | | NA | | 1 | mg/L | NA |
| O. Sulfate (as SO ₄) (14808-79-8) | | XX | | | | | | | | | |
| P. Sulfide (as S) | | XX | | | | | | | | | |
| Q. Sulfite (as SO ₃) (14265-45-3) | | XX | | | | | | | | | |
| R. Surfactants | | XX | | | | | | | | | |
| S. Trihalomethanes, Total | | XX | | | | | | | | | |
| Subpart 2 – Metals | | | | | | | | | | | |
| 1M. Aluminum, Total Recoverable (7429-90-5) | | XX | | | | | | | | | |
| 2M. Antimony, Total Recoverable (7440-36-9) | | XX | | | | | | | | | |
| 3M. Arsenic, Total Recoverable (7440-38-2) | | XX | | | | | | | | | |
| 4M. Barium, Total Recoverable (7440-39-3) | | XX | | | | | | | | | |
| 5M. Beryllium, Total Recoverable (7440-41-7) | | XX | | | | | | | | | |
| 6M. Boron, Total Recoverable (7440-42-8) | | XX | | | | | | | | | |
| 7M. Cadmium, Total Recoverable (7440-43-9) | | XX | | | | | | | | | |
| 8M. Chromium III Total Recoverable (16065-83-1) | | XX | | | | | | | | | |
| 9M. Chromium VI, Dissolved (18540-29-9) | | XX | | | | | | | | | |
| 10M. Cobalt, Total Recoverable (7440-48-4) | | XX | | | | | | | | | |

| 1. POLLUTANT AND CAS NUMBER (if available) | 2. MARK "X" | | 3. VALUES | | | | | | 4. UNITS | | |
|--|---------------------|--------------------|------------------------|------|-------------------------|------|----------------------------|------|--------------------|------------------|---------|
| | A. BELIEVED PRESENT | B. BELIEVED ABSENT | A. MAXIMUM DAILY VALUE | | B. MAXIMUM 30 DAY VALUE | | C. LONG TERM AVERAGE VALUE | | D. NO. OF ANALYSES | A. CONCENTRATION | B. MASS |
| | | | CONCENTRATION | MASS | CONCENTRATION | MASS | CONCENTRATION | MASS | | | |
| Subpart 2 – Metals (Continued) | | | | | | | | | | | |
| 11M. Copper, Total Recoverable (7440-50-8) | XX | | | | | | | | | | |
| 12M. Iron, Total Recoverable (7439-89-6) | XX | | | | | | | | | | |
| 13M. Lead, Total Recoverable (7439-92-1) | XX | | | | | | | | | | |
| 14M. Magnesium, Total Recoverable (7439-95-4) | XX | | | | | | | | | | |
| 15M. Manganese, Total Recoverable (7439-96-5) | XX | | | | | | | | | | |
| 16M. Mercury, Total Recoverable (7439-97-6) | XX | | | | | | | | | | |
| 17M. Methylmercury (22967926) | XX | | | | | | | | | | |
| 18M. Molybdenum, Total Recoverable (7439-98-7) | XX | | | | | | | | | | |
| 19M. Nickel, Total Recoverable (7440-02-0) | XX | | | | | | | | | | |
| 20M. Selenium, Total Recoverable (7782-49-2) | XX | | | | | | | | | | |
| 21M. Silver, Total Recoverable (7440-22-4) | XX | | | | | | | | | | |
| 22M. Thallium, Total Recoverable (7440-28-0) | XX | | | | | | | | | | |
| 23M. Tin, Total Recoverable (7440-31-5) | XX | | | | | | | | | | |
| 24M. Titanium, Total Recoverable (7440-32-6) | XX | | | | | | | | | | |
| 25M. Zinc, Total Recoverable (7440-66-6) | XX | | | | | | | | | | |
| Subpart 3 – Radioactivity | | | | | | | | | | | |
| 1R. Alpha Total | XX | | | | | | | | | | |
| 2R. Beta Total | XX | | | | | | | | | | |
| 3R. Radium Total | XX | | | | | | | | | | |
| 4R. Radium 226 plus 228 Total | XX | | | | | | | | | | |

FIGURES



NORTH



NESTLE PURINA PETCARE
BLOOMFIELD PLANT

STODDARD COUNTY



Civil & Environmental Consultants, Inc.

4848 Park 370 Boulevard, Suite F - Hazelwood, MO 63042

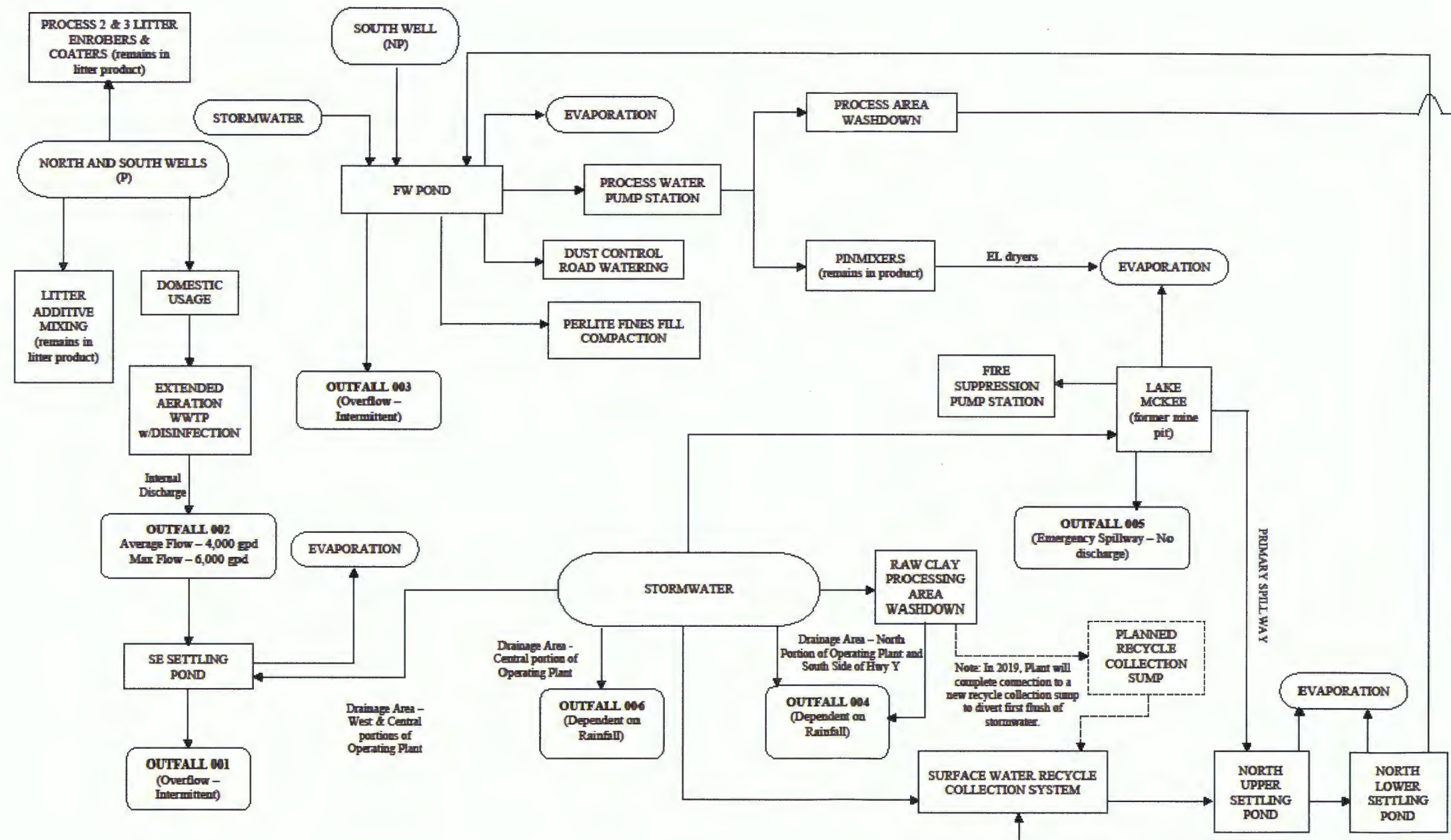
314-656-4566 • 866-250-3679

www.cecinc.com

NESTLE PURINA PETCARE
BLOOMFIELD PLANT
STODDARD COUNTY, MISSOURI
NPDES NO: MO-0101788

SITE LOCATION

| | | | | | | | |
|-----------|----------|-------------|---------------|--------------|---------|------------|-------------------------------|
| DRAWN BY: | EEG | CHECKED BY: | BDB | APPROVED BY: | BDB* | FIGURE NO: | 1 * Hand Signature on file |
| DATE: | MAY 2019 | SCALE: | 1" = 250,000' | PROJECT NO: | 191-799 | | |



KEY:
 NP - Non Potable
 P - Potable
 FW - Fresh Water
 SE - Southeast
 WWTP - Wastewater Treatment Plant

P:\2019\191-799-GIS\Mapa\191799_MND1_Process Flow.mxd 5/28/2019 (egibson) 9:45:58 AM

CEC
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 4848 Park 370 Blvd, Suite F - Hazelwood, MO 63042
 314-656-4566 • 866-250-3679
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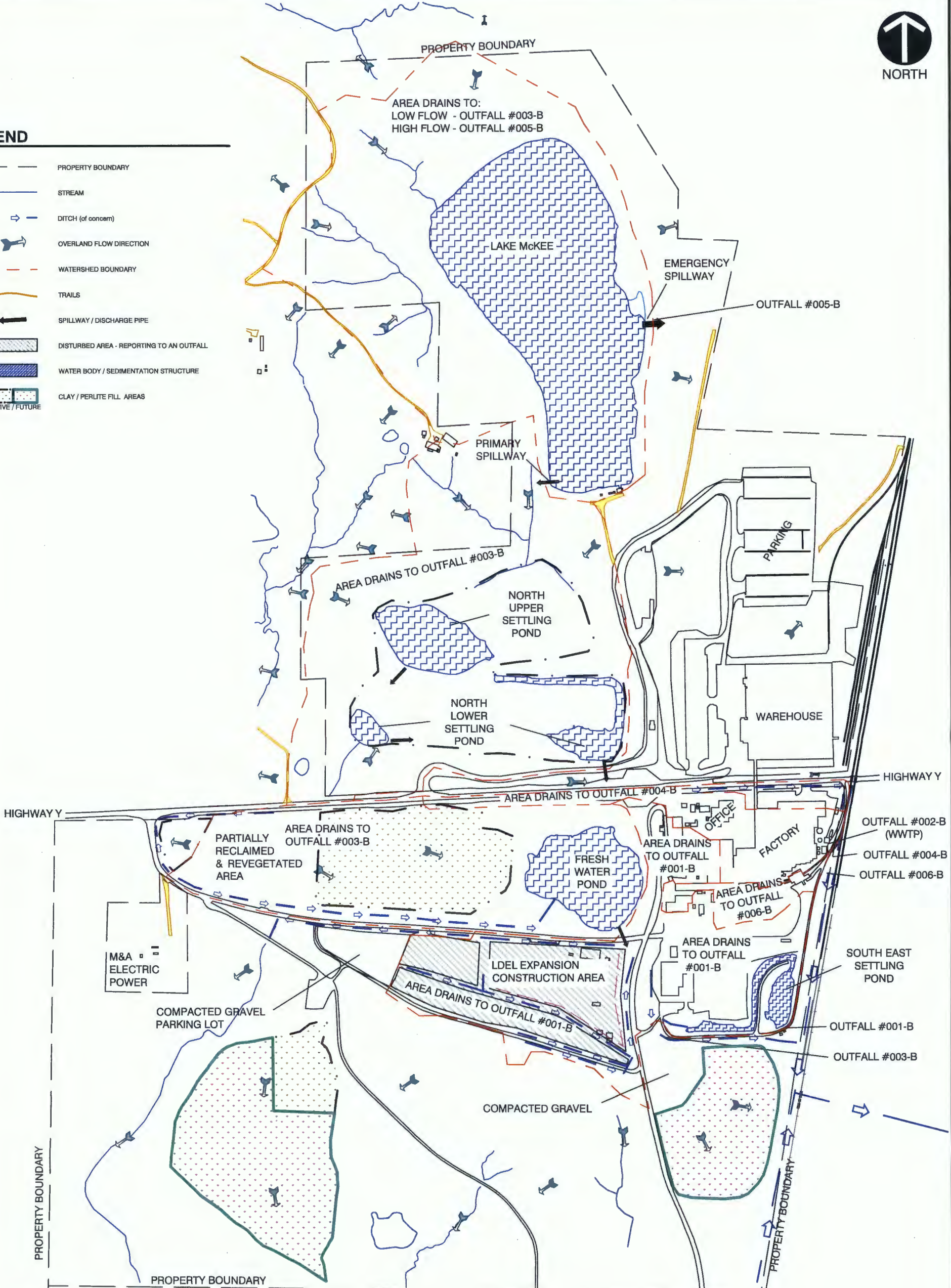
NESTLE PURINA PETCARE
 BLOOMFIELD PLANT
 STODDARD COUNTY, MISSOURI
 NPDES NO: MO-0101788
WATER BALANCE DIAGRAM
 NPCC BLOOMFIELD, MO

| | | | | | | | |
|-----------|----------|-------------|-----|--------------|---------|------------|----------------------------|
| DRAWN BY: | EEG | CHECKED BY: | JLB | APPROVED BY: | BDB* | FIGURE NO: | 2 * Hand signature on file |
| DATE: | MAY 2019 | SCALE: | - | PROJECT NO: | 191-799 | | |



LEGEND

- PROPERTY BOUNDARY
- STREAM
- DITCH (of concern)
- OVERLAND FLOW DIRECTION
- WATERSHED BOUNDARY
- TRAILS
- SPILLWAY / DISCHARGE PIPE
- DISTURBED AREA - REPORTING TO AN OUTFALL
- WATER BODY / SEDIMENTATION STRUCTURE
- CLAY / PERLITE FILL AREAS
- ACTIVE / FUTURE



REFERENCE

1. PLANIMETRIC IMAGERY PROVIDED BY CLIENT, IMAGERY DATED 1-30-2018.
2. PROPERTY BOUNDARY LINES ARE APPROXIMATE, ESTIMATED FROM STODDARD COUNTY PLAT BOOK



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NESTLE PURINA PET CARE
 22450 STATE HIGHWAY Y
 BLOOMFIELD, MO 63825
FACILITY PLAN VIEW
NPDES RENEWAL

| | | | |
|---------------------------|--------------------------|----------------------------|----------------------|
| DRAWN BY: BDB | CHECKED BY: JLB | APPROVED BY: JLB* | FIGURE NO.: 3 |
| DATE: MAY 27, 2019 | DWG SCALE: 1"=500 | PROJECT NO: 191-799 | |

*HAND SIGNATURE ON FILE



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NESTLE PURINA PETCARE
 BLOOMFIELD PLANT
 STODDARD COUNTY, MISSOURI
 NPDES NO: MO-0101788

DOWNSTREAM PROPERTY OWNERS

| | | | | | | | |
|-----------|----------|-------------|-------------|--------------|---------|------------|-------------------------------|
| DRAWN BY: | EEG | CHECKED BY: | BDB | APPROVED BY: | BDB* | FIGURE NO: | 4 * Hand Signature on file |
| DATE: | MAY 2019 | SCALE: | 1" = 1,250' | PROJECT NO: | 191-799 | | |

P:\2019\191-799\GIS\Maps\191799_MN01_Location - Copy.mxd 5/13/2019 (egibson) 4:53:44 PM

ANALYTICAL RESULTS

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Chamberlin
Nestle Purina Pet Care Company
22450 E. State Hwy Y
Bloomfield, MO 63825

Report Number: 150763

Report of Analysis

Reference:

The evaluation of wastewater by acute whole effluent toxicity testing is conducted in accordance with Methods for Measuring the Acute toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth edition. USEPA, Office of Water, Washington D.C., EPA 821-R-02-012

Log Number: 2314924 Sample Description: Outfall #001-B Sample Date: 4/24/2019 Sample Received Date: 4/24/2019

Whole Effluent Toxicity

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|-------------------------------|--------|-------|---------------|--------------|---------------|---------|
| 48 Hour WET Test 5 dil/4 reps | 1 | test | EPA-2000/2002 | | 04/24/19 | 133 |

Respectfully submitted,



David F. Warren

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Nestle Purina Petcare Company, Golden Products Division
Outfall 1B (composite) AEC = 100%
MO-0101788
EAS LOG# 2314924
April 24, 2019 through April 26, 2019

Tests performed by:

John P. Clippard / Chemical Analyst at Environmental Analysis South (EAS)
Kelly J. Ray / Biologist at Environmental Analysis South (EAS)
Sara C. Shields / Lab Supervisor - Chemist at Environmental Analysis South (EAS)
David F. Warren / Lab Director - Chemist at Environmental Analysis South (EAS)

1. **Report Summation**
 - 1.1. **Data Summation**
 - 1.2. **Conclusion**
2. **Method Summation**
 - 2.1. **Test Conditions and Methods**
 - 2.2. **Potassium chloride Reference Salt Test**
 - 2.2.1. *Pimephales promelas* data
 - 2.2.2. *Ceriodaphnia dubia* data
 - 2.3. **Literature Cited**
3. **Raw Data Bench Sheets**
 - 3.1. **Initial observations (page 1)**
 - 3.2. **Zero hour Observations (page 1)**
 - 3.3. **Twenty-four (24) hour Observations (page 1)**
 - 3.4. **Forty-eight (48) hour Observations (page 1)**
 - 3.5. **Survival Data Table (page 2)**
 - 3.6. **Test Comments (page 3)**
4. **Chain of Custody**
5. **MO DNR "Whole Effluent Toxicity (WET) Test Report (Form 780-1899)**

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Nestle Purina Petcare Company, Golden Products Division
Outfall 1B (composite) AEC = 100%
MO-0101788
EAS LOG# 2314924
April 24, 2019 through April 26, 2019

1. REPORT SUMMATION:

1.1. Multiple Dilution Data Summation

| Test Solution | <i>Pimephales promelas</i> Acute Toxicity Test 48 Hour Survival | <i>Ceriodaphnia dubia</i> Acute Toxicity Test 48 Hour Survival |
|--|---|--|
| Reconstituted Control (RC) | 100% | 100% |
| Upstream Control (UC) | N/A | N/A |
| 6.25% Effluent | 100% | 100% |
| 12.5% Effluent | 100% | 100% |
| 25% Effluent | 100% | 100% |
| 50% Effluent | 100% | 100% |
| 100% Effluent | 100% | 100% |
| Estimated 48 Hour LC ₅₀ Value | >100% Effluent | >100% Effluent |
| TUa | <1.00 | <1.00 |
| Result of Toxicity Test | Monitor Only | Monitor Only |

* Indicates a significant difference at alpha = 0.5 between effluent and control survival data.

Conclusion:

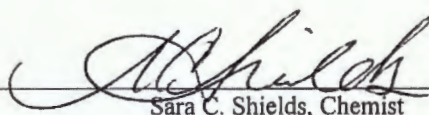
Pimephales promelas 48 hour WET results:

LC 50 >100% by the Graphical Method
NOAEC = 100% using Steel's Many-One Rank Test
TUa < 1.00

Ceriodaphnia dubia 48 hour WET results:

LC 50 >100% by the Graphical Method
NOAEC = 100% using Steel's Many-One Rank Test
TUa < 1.00

Approved by _____


Sara C. Shields, Chemist

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING
Nestle Purina Petcare Company, Golden Products Division
Outfall 1B (composite) AEC = 100%
MO-0101788
EAS LOG# 2314924
April 24, 2019 through April 26, 2019

2. TEST METHOD SUMMARY

2.1. TEST CONDITIONS AND METHODS:

| | <i>Ceriodaphnia dubia</i> : | <i>Pimephales promelas</i> : |
|-------------------------------------|--|--|
| Test duration: | 48 hours | 48 hours |
| Temperature: | 24 - 26 degree Celsius | 24 - 26 degree Celsius |
| Light quality: | Ambient laboratory illumination | Ambient laboratory illumination |
| Photoperiod: | 16 hour light, 8 hours dark | 16 hour light, 8 hours dark |
| Control Water: | Moderately Hard Reconstituted Water | Moderately Hard Reconstituted Water |
| Dilution Water: | Upstream Water - If unavailable or toxic, then control water will be used. | Upstream Water - If unavailable or toxic, then control water will be used. |
| Size of test vessel: | 30 milliliters | 250 milliliters |
| Volume of test solution: | 15 milliliters | 200 milliliters |
| Age of test organisms: | <24 hours | 1 -14 days (all same age) |
| Number of organisms/test vessel: | 5 | 10 |
| Number of replicates/concentration: | 4 | 2 |
| Number of organisms/concentration: | 20 | 40 for a single dilution test and 20 for a multiple dilution test |
| Feeding regime: | None (fed prior to test) | None (fed prior to test) |
| Aeration: | None | None |
| Test acceptability criterion: | 90% or greater survival in controls | 90% or greater survival in controls |

The methodology used for the chemistry data was taken from the *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992). The exception was hardness, which was determined using a Hach EDTA titration test kit. The toxicity tests follow guidelines laid out in the permittee's NPDES permit and were conducted according to EPA approved methods (USEPA 2002).

All test organisms were cultured according to EPA approved methods (USEPA 2002). The *Ceriodaphnia dubia* and the *Pimephales promelas* were obtained from Environmental Enterprises USA Inc. located in Slidell, Louisiana and shipped overnight for use in the whole effluent toxicity test.

Environmental Analysis South, Inc.

4000 East Jackson Blvd. • Jackson, MO 63755 • 573-204-8817 • Fax 573-204-8818



REPORT OF ACUTE TOXICITY TESTING

Nestle Purina Petcare Company, Golden Products Division

Outfall 1B (composite) AEC = 100%

MO-0101788

EAS LOG# 2314924

April 24, 2019 through April 26, 2019

2.2. REFERENCE TOXICITY TEST:

Environmental Analysis South performs monthly reference toxicity tests. The most recent reference test was initiated on April 3, 2019 using KCL Lot #41713. Following are the results:

2.2.1. *P. promelas* - 48 hr. Acute Test – LC₅₀ = 1.140 g/l 95%CI (0.813-1.467 g/l)

EAS %CV = 14.4%

National Warning Limits (75th percentile) = 19%CV

National Control Limits (90th percentile) = 33%CV

2.2.2. *C. dubia* - 48 hr. Acute Test – LC₅₀ = 0.385 g/l 95%CI (0.195-0.574 g/l)

EAS %CV = 24.7%

National Warning Limits (75th percentile) = 29%CV

National Control Limits (90th percentile) = 34%CV

2.3. LITERATURE CITED:

1. APHA. 1992. *Standard methods for the examination of water and wastewater*, 18th Ed. American Public Health Association, Washington, D.C
2. USEPA. 2002. *Methods for measuring the acute toxicity of effluents and receiving waters to freshwater and marine organisms*, 5th Ed. EPA-821-R-02-012
3. USEPA 2000. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System, (Table B-2)*. June 2000. EPA 833-R-00-003.

CLIENT NAME: Nestle Purina Petcare Company - Golden Products Division, OF 1B, composite

NPDES NUMBER: MO-0101788

TYPE OF METHOD: multiple dilution, 48 hr non-renewal WET, PP and CD species AEC=100%, TUa report

DATE & TIME OF COLLECTION: 04/23/19 11:15 hrs - 04/24/19 11:00 hrs by JB

DATE & TIME OF SUBMISSION: 04/24/19 12:10 hrs by JB

Upstream: Trib to Castor River

Not available

| INITIAL OBSERVATIONS | DATE | TIME | ANALYST | QC LOT | QC EXP VALUE | INT EFFLINT UC | INT RC | 50% | 25% | 12.5% | X %AEC |
|------------------------------|----------|----------|---------|------------------------|--------------|----------------|--------|------|------|-------|--------|
| LOG NUMBER / ID NUMBER | | | | | | 2314924 | RC4227 | | | | |
| pH - SU | 04/24/19 | 1200 hrs | SCS | SB114 (8.8-9.2) | 8.88 | 8.34 | 8.94 | 8.15 | 8.41 | 8.64 | 8.98 |
| TEMPERATURE °C RECEIVED | 04/24/19 | 1200 hrs | SCS | EAS 106 | | 5 | 19 | 24.4 | 24.6 | 24.8 | 24.7 |
| SPECIFIC CONDUCTANCE umhos | 04/24/19 | 1200 hrs | SCS | ERA P255-506 (437-490) | 479 | 577 | 253 | 505 | 365 | 309 | 288 |
| HARDNESS - ppm | 04/25/19 | 1400 hrs | SCS | DMROA38 (256-346) | 296 | 305 | 62.8 | 716 | 365 | 309 | 288 |
| CHLORINE - ppm | 04/24/19 | 1200 hrs | SCS | AS298 (0.82 - 1.02) | 0.91 | <0.04 | <0.04 | 505 | 365 | 309 | 288 |
| DISSOLVED OXYGEN - ppm | 04/24/19 | 1200 hrs | SCS | cal@840 | | 9.8 | 8.8 | 9.4 | 8.8 | 8.3 | 7.8 |
| TOTAL ALKALINITY - ppm | 04/26/19 | 0900 hrs | SCS | P272-506 (40.3-48.1) | 45.2 | 190 | 62.8 | 716 | 365 | 309 | 288 |
| INITIAL AMMONIA - ppm | 04/26/19 | 1150 hrs | JPC | DMROA38 (4 16-6.59) | 5.26 | 0.175 | <0.020 | 9.8 | 8.8 | 8.3 | 7.8 |
| TOTAL DISSOLVED SOLIDS - ppm | | | | | | | | | | | |
| 0 HOUR OBSERVATIONS | | | | | | | | | | | |
| pH - SU | 04/24/19 | 1230 hrs | SCS | QC LOT | QC EXP VALUE | RC | UC | 100% | 25% | 12.5% | X %AEC |
| TEMPERATURE °C | 04/24/19 | 1230 hrs | SCS | SB114 (8.8-9.2) | 8.88 | 8.22 | | 7.93 | 8.41 | 8.64 | 8.98 |
| TEMPERATURE °C | 04/24/19 | 1230 hrs | SCS | EAS 106 | | 24.1 | | 24.6 | 24.6 | 24.8 | 24.7 |
| SPECIFIC CONDUCTANCE umhos | 04/24/19 | 1230 hrs | SCS | ERA P255-506 (437-490) | 479 | 249 | | 716 | 365 | 309 | 288 |
| DISSOLVED OXYGEN - ppm | 04/24/19 | 1230 hrs | SCS | cal@840 | | 8.9 | | 9.8 | 8.8 | 8.3 | 7.8 |

| 24 HOUR OBSERVATIONS - PP | DATE | TIME | ANALYST | QC LOT | QC EXP VALUE | RC | UC | 50% | 25% | 12.5% | X %AEC |
|----------------------------|----------|----------|---------|------------------------|--------------|------|----|------|------|-------|--------|
| pH - SU | 04/25/19 | 1230 hrs | SCS | SB114 (8.8-9.2) | 8.89 | 8.24 | | 8.31 | 8.17 | 8.23 | 8.39 |
| TEMPERATURE °C | 04/25/19 | 1230 hrs | SCS | EAS 106 | | 25.0 | | 25.0 | 25.0 | 25.0 | 25.0 |
| SPECIFIC CONDUCTANCE umhos | 04/25/19 | 1230 hrs | SCS | ERA P255-506 (437-490) | 477 | 262 | | 740 | 370 | 312 | 280 |
| DISSOLVED OXYGEN - ppm | 04/25/19 | 1230 hrs | SCS | cal@840 | | 8.3 | | 8.4 | 8 | 7.9 | 7.9 |
| 48 HOUR OBSERVATIONS - PP | | | | | | | | | | | |
| pH - SU | 04/26/19 | 1230 hrs | SCS | QC LOT | QC EXP VALUE | RC | UC | 100% | 25% | 12.5% | X %AEC |
| TEMPERATURE °C | 04/26/19 | 1230 hrs | SCS | SB114 (8.8-9.2) | 8.88 | 7.57 | | 8.55 | 8.26 | 8.35 | 8.49 |
| TEMPERATURE °C | 04/26/19 | 1230 hrs | SCS | EAS 106 | | 25.0 | | 25.0 | 25.0 | 25.0 | 25.0 |
| SPECIFIC CONDUCTANCE umhos | 04/26/19 | 1230 hrs | SCS | ERA P255-506 (437-490) | 478 | 282 | | 758 | 376 | 316 | 305 |
| DISSOLVED OXYGEN - ppm | 04/26/19 | 1230 hrs | SCS | cal@840 | | 8.6 | | 9.0 | 8.2 | 8.1 | 8.1 |
| FINAL AMMONIA - ppm | | | | DMROA33 (10.0-16.8) | | | | | | | |

| 24 HOUR OBSERVATIONS - CD | DATE | TIME | ANALYST | QC LOT | QC EXP VALUE | RC | UC | 50% | 25% | 12.5% | X %AEC |
|----------------------------|----------|----------|---------|------------------------|--------------|------|----|------|------|-------|--------|
| pH - SU | 04/25/19 | 1230 hrs | SCS | SB114 (8.8-9.2) | 8.89 | 8.00 | | 8.04 | 8.23 | 8.32 | 8.46 |
| TEMPERATURE °C | 04/25/19 | 1230 hrs | SCS | EAS 106 | | 25.0 | | 25.0 | 25.0 | 25.0 | 25.0 |
| SPECIFIC CONDUCTANCE umhos | 04/25/19 | 1230 hrs | SCS | ERA P255-506 (437-490) | 477 | 385 | | 702 | 366 | 309 | 270 |
| DISSOLVED OXYGEN - ppm | 04/25/19 | 1230 hrs | SCS | cal@840 | | 9.1 | | 8.9 | 8.5 | 8.5 | 8.3 |
| 48 HOUR OBSERVATIONS - CD | | | | | | | | | | | |
| pH - SU | 04/26/19 | 1230 hrs | SCS | QC LOT | QC EXP VALUE | RC | UC | 100% | 25% | 12.5% | X %AEC |
| TEMPERATURE °C | 04/26/19 | 1230 hrs | SCS | SB114 (8.8-9.2) | 8.88 | 8.18 | | 8.11 | 8.32 | 8.47 | 8.83 |
| TEMPERATURE °C | 04/26/19 | 1230 hrs | SCS | EAS 106 | | 25.0 | | 25.0 | 25.0 | 25.0 | 25.0 |
| SPECIFIC CONDUCTANCE umhos | 04/26/19 | 1230 hrs | SCS | ERA P255-506 (437-490) | 478 | 427 | | 711 | 367 | 312 | 291 |
| DISSOLVED OXYGEN - ppm | 04/26/19 | 1230 hrs | SCS | cal@840 | | 8.2 | | 8.7 | 8.7 | 8.6 | 8.6 |
| FINAL AMMONIA - ppm | | | | DMROA33 (10.0-16.8) | | | | | | | |

Approved by: 

Date: 04/30/19

WHOLE EFFLUENT TEST conducted in accordance with US EPA 600/4-90/027
Fifth Edition October 2002

Nestle Purina Petcare Company - Golden Products Division, OF 1B, composite EAS LOG# 2314924

Date Test Began: April 24, 2019
Date Test Finished: April 26, 2019

Time Test Began: 1230 hrs
Time Test Finished: 1230 hrs

Analyst 1: DFW
Analyst 2: KJR
Analyst 3: SCS

P. promelas (PP) AGE: 3 days HATCH NUMBER: 042319EEU

| PERIOD | RC | UC | 100% | 50% | 25% | 12.5% | 6.25% | X% AEC |
|----------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0 HR-PP | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE |
| 24 HR-PP | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | |
| 48 HR-PP | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | 10,10 | |

Ceriodaphnia dubia (CD) AGE: <24 hours HATCH NUMBER: 042319EEUU

| PERIOD | RC | UC | 100% | 50% | 25% | 12.5% | 6.25% | X% AEC |
|----------|---------|---------|---------|---------|---------|---------|---------|--------|
| 0 HR-CD | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE | ALIVE |
| 24 HR-CD | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | |
| 48 HR-CD | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | 5,5,5,5 | |

Approved by: *D. Smith*

Date: 04/30/19



| | | | |
|---------------|---|---------------------|-------------------------------------|
| Facility Name | Nestle Purina Petcare Co.-Golden Products | Receiving Water | Trib to Castor River--not available |
| Permit Number | MO-0101788 | Laboratory Name | Environmental Analysis South, Inc. |
| Outfall | 001 | Laboratory Report # | MO_2314924 |

SAMPLE INFORMATION

| Sample Number | Sample Collection | | | | Sample Temperature (°C) | | pH (SU) | Hand delivered? (If yes, ≤ 4 hrs?) | Hold Time ≤ 36 hours? | Sample Acceptable |
|---------------|----------------------|-------------|----------------|----------|-------------------------|--------|---------|--|--|--|
| | Effluent or Upstream | Sample Type | Beginning Date | End Date | At Collection | At Lab | At Lab | | | |
| 1 | 2314924 | Effl/comp | 04/23/19 | 04/24/19 | | 5 | 8.34 | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |
| 2 | | | | | | | | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N |
| 3 | | | | | | | | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N |
| 4 | | | | | | | | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N |

Describe any unusual conditions during sampling that might influence test results

| TEST INFORMATION - ACUTE | | | | QA/QC CONDITIONS - ACUTE | | | |
|--------------------------|-------------------------------|-----------------------------|--|---|---|-------------------------------------|-------------------------------------|
| Test Method: | <i>C. dubia</i> 2002.0 | <i>P. promelas</i> 2000.0 | | | | YES | NO |
| Date Test Initiated: | 04/24/2019 | | | Did test conditions meet all test acceptability criterion required by the specified method? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| AEC/TWC Info: | AEC = 100% | | | Temperatures maintained during test (20 ± 1°C) | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Dilution Series | 100% | 50% | 25% | 12.5% | Temperatures maintained during test (25 ± 1°C) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| | 6.25% | | | | Dissolved oxygen ≥ 4.0 mg/L throughout test? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Dilution Water: | <i>C. dubia</i> | RW <input type="checkbox"/> | LW <input checked="" type="checkbox"/> | | Effluent pH maintained within 6.0 - 9.0 SU throughout test? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| | <i>P. promelas</i> | RW <input type="checkbox"/> | LW <input checked="" type="checkbox"/> | | Concurrent or monthly reference tests within acceptable limits? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| | RW = Receiving Stream Control | | LW = Lab Water Control | | Were effluent samples modified prior to testing? (ex. filtration, aeration, chemical addition including de-chlorination or pH adjustment) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Comments: | | | | Comments: | Outfall 001 aerated prior to test initiation due to low DO upon arrival to the lab | | |

WATER CHEMISTRY (All values reported in mg/L, except for pH and conductivity)

| Sample Type | Sample Number | Conductivity (µmhos) | Unionized Ammonia | Hardness | Alkalinity | pH (SU) After Warming | Total Residual Chlorine | Other | Other | Other |
|-------------|---------------|----------------------|-------------------|----------|------------|-----------------------|-------------------------|--------|-------|-------|
| Upstream | | | | | | | | | | |
| Effluent | 2314924 | 577 | <0.020 | 305 | 190 | 7.93 | <0.04 | DO=9.8 | | |
| Lab Water | RC4227 | 253 | <0.020 | 62.8 | 56.7 | 8.22 | <0.04 | DO=8.8 | | |

Comments:

| | | | | | | | |
|--|--|-------|-------|-------------------------|-----|-------------------|-------|
| TU _a limit = Monitoring only. | <i>Pimephales promelas</i> Acute Results | LC50= | >100% | Confidence Interval % = | N/A | TU _a = | <1.00 |
| | <i>Ceriodaphnia dubia</i> Acute Results | LC50= | >100% | Confidence Interval % = | N/A | TU _a = | <1.00 |

| Receiving Water Controls | | | | Lab Water Controls | | | |
|--------------------------|---|---------------------------|---|--------------------|--|---------------------------|--|
| Fathead Minnow | | <i>Ceriodaphnia dubia</i> | | Fathead Minnow | | <i>Ceriodaphnia dubia</i> | |
| Survival ≥ 90% | <input type="checkbox"/> Y <input type="checkbox"/> N | Survival ≥ 90% | <input type="checkbox"/> Y <input type="checkbox"/> N | Survival ≥ 90% | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N | Survival ≥ 90% | <input checked="" type="checkbox"/> Y <input type="checkbox"/> N |

Comments:

receiving water control--not available

| | | |
|--|------|--------------|
| SIGNATURE AND TITLE OF AUTHORIZED INDIVIDUAL, IN ACCORDANCE WITH 10 CSR 20-6.010 | DATE | PHONE NUMBER |
| | | 573-204-8817 |

W/HA 2/14
Tua Report

ENVIRONMENTAL ANALYSIS SOUTH, INC.

4000 East Jackson Blvd
Jackson, MO 63755
Phone: (573) 204-8817 Fax: (573) 204-8818



150763

**WHOLE EFFLUENT TOXICITY TESTING
CHAIN OF CUSTODY**

CLIENT: Nestle Purina Petcare Company, Golden Products Division

NPDES PERMIT NUMBER: MO-0101788

EFFLUENT NAME: OF 1 B GRAB 24 HR COMPOSITE
(LEGAL NAME)

COLLECTION DATA: START DATE: 4.23.19 START TIME: 1115

FINISH DATE: 4.24.19 FINISH TIME: 1100

UPSTREAM NAME: N/A Trib to Castor River (GRAB SAMPLE)
(LEGAL NAME)

COLLECTION DATA: DATE: _____ TIME: _____

SAMPLER NAME: _____ CARRIER: _____
(PRINT NAME)

Disclaimer: Environmental Analysis South, Inc. shall not be held financially liable for invalid whole effluent toxicity test (WET) or shipping charges resulting from the following reasons:
• Sampling & holding time errors (Will results in a setup charge of \$100 to the client)
• Commercial carrier delivery problems or errors (Will results in a setup charge of \$100 to the client)
• Problems with health or delivery of test organisms by vendor (No setup charge to client)

SAMPLER CHECK LIST

- NO HEADSPACE IN BOTTLES
- SHIP SAMPLES BY NEXT DAY CARRIER OR DELIVER TO LAB ON ____/____/____
- SAMPLES TO BE HAND DELIVERED TO LABORATORY SAME DAY AS TEST SETUP
- SUFFICIENT ICE TO COOL SAMPLES TO A RANGE OF 0 - 6° C WHEN SHIPPING OVERNIGHT

RELINQUISHED BY: [Signature] DATE: 4.24.19 TIME: 1210

LABORATORY USE ONLY
EFFLUENT LOG NUMBER: 2314924
RECEIVED TEMPERATURE: 17 °C THERMOMETER ASSIGNED NUMBER: _____
HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST
UPSTREAM LOG NUMBER: _____
RECEIVED TEMPERATURE: _____ °C THERMOMETER ASSIGNED NUMBER: _____
HEADSPACE: YES or NO SAMPLES ICED or DELIVERED SAME DAY AS TEST
RECEIVED BY: [Signature] DATE: 4/24/19 TIME: 1210

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Chamberlin
Nestle Purina Pet Care Company
22450 E. State Hwy Y
Bloomfield, MO 63825

Report Number: 150849

Report of Analysis

Reference:

The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136. All results expressed on an as received basis unless indicated by a footnote.

Log Number: 2315401 Sample Description: OF# 1-B Sample Date: 5/1/2019 Sample Received Date: 5/1/2019

Demands

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|------------------|--------|-------|----------------|--------------|---------------|---------|
| B.O.D. (5-day) | 3.72 | mg/L | SM-5210 B-2011 | | 05/01/19 | 114 |

Minerals

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|----------------------|--------|----------|----------------|--------------|---------------|---------|
| Specific Conductance | 658 | µmhos/cm | SM-2510 B-2011 | | 05/01/19 | 133 |

Miscellaneous

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|----------------------|--------|-------|----------------------|--------------|---------------|---------|
| Total Organic Carbon | 4.7 | mg/L | SM-5310B,C,or D-2011 | DC-Peoria | 05/04/19 | |

Nutrients

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|-----------------------------|---------|-------|----------------------|--------------|---------------|---------|
| Ammonia as Nitrogen | < 0.020 | mg/L | Lachat-10-107-06-1-K | | 05/06/19 | 102 |
| Kjeldahl Nitrogen | < 0.150 | mg/L | Lachat-10-107-06-2-D | | 05/13/19 | 102 |
| Nitrate/Nitrite as Nitrogen | 6.34 | mg/L | LaChat 10-107-04-1-J | | 05/10/19 | 102 |
| Phosphorus | 0.381 | mg/L | LaChat 10-115-01-1-C | | 05/13/19 | 102 |
| Total Nitrogen | 6.34 | mg/L | Calculation | | 05/13/19 | 102 |

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Chamberlin
Nestle Purina Pet Care Company
22450 E. State Hwy Y
Bloomfield, MO 63825

Report Number:

150849

Report of Analysis

Respectfully submitted,

David F. Warren

Comments:

| | |
|------------|---|
| PDC-Peoria | This parameter or group of analytes was analyzed by the subcontracting lab-PDC Labs (Peoria IL) |
|------------|---|

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Chamberlin
Nestle Purina Pet Care Company
22450 E. State Hwy Y
Bloomfield, MO 63825

Report Number: 150848

Report of Analysis

Reference:

The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136. All results expressed on an as received basis unless indicated by a footnote.

Log Number: 2315333 **Sample Description:** OF 2-B **Sample Date:** 5/1/2019 **Sample Received Date:** 5/1/2019

Demands

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|------------------------|--------|-------|-----------|--------------|---------------|---------|
| Chemical Oxygen Demand | 43 | mg/L | HACH 8000 | | 05/03/19 | 133 |

Miscellaneous

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|----------------------|--------|-------|----------------------|--------------|---------------|---------|
| Total Organic Carbon | 11 | mg/L | SM-5310B,C,or D-2011 | DC-Peoria | 05/04/19 | |

Respectfully submitted,

David F. Warren

Comments:

PDC-Peoria This parameter or group of analytes was analyzed by the subcontracting lab-PDC Labs (Peoria IL)

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Chamberlin
Nestle Purina Pet Care Company
22450 E. State Hwy Y
Bloomfield, MO 63825

Report Number: 150850

Report of Analysis

Reference:

The analysis of wastewater is conducted in accordance US EPA approved methods listed in 40 CFR Part 136. All results expressed on an as received basis unless indicated by a footnote.

Log Number: 2315402 Sample Description: OF# 3-B Sample Date: 5/1/2019 Sample Received Date: 5/1/2019

Demands

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|------------------|--------|-------|----------------|--------------|---------------|---------|
| B.O.D. (5-day) | < 2 | mg/L | SM-5210 B-2011 | | 05/01/19 | 114 |

Minerals

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|----------------------|--------|----------|----------------|--------------|---------------|---------|
| Specific Conductance | 590 | µmhos/cm | SM-2510 B-2011 | | 05/01/19 | 133 |

Miscellaneous

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|----------------------|--------|-------|----------------------|--------------|---------------|---------|
| Total Organic Carbon | 4.6 | mg/L | SM-5310B,C,or D-2011 | DC-Peoria | 05/04/19 | |

Nutrients

| Test Description | Result | Units | Method | Comment Code | Analysis Date | Analyst |
|-----------------------------|---------|-------|----------------------|--------------|---------------|---------|
| Ammonia as Nitrogen | < 0.020 | mg/L | Lachat-10-107-06-1-K | | 05/06/19 | 102 |
| Kjeldahl Nitrogen | < 0.150 | mg/L | Lachat-10-107-06-2-D | | 05/13/19 | 102 |
| Nitrate/Nitrite as Nitrogen | < 0.012 | mg/L | LaChat 10-107-04-1-J | | 05/10/19 | 102 |
| Phosphorus | < 0.050 | mg/L | LaChat 10-115-01-1-C | | 05/13/19 | 102 |
| Total Nitrogen | < 0.150 | mg/L | Calculation | | 05/13/19 | 102 |

Environmental Analysis South, Inc

4000 East Jackson Blvd. - Jackson MO 63755 - 573-204-8817 - Fax 573-204-8818

Dan Chamberlin
Nestle Purina Pet Care Company
22450 E. State Hwy Y
Bloomfield, MO 63825

Report Number:

150850

Report of Analysis

Respectfully submitted,

David F. Warren

Comments:

| | |
|------------|---|
| PDC-Peoria | This parameter or group of analytes was analyzed by the subcontracting lab-PDC Labs (Peoria IL) |
|------------|---|



May 29, 2019

Missouri Department of Natural Resources
Water pollution Protection Program
Water Pollution Control Branch
ATTN: Operating Permit Section
P.O. Box 176
Jefferson City, MO 65102-0176

RECEIVED
MAY 31 2019
Water Protection Program

Subject: MO-0101788
NPDES Permit Renewal
Nestle Purina Petcare Company
22450 State Highway Y, Bloomfield, MO 63825
CEC Project 191-799

Dear Sirs:

Please find attached a completed NPDES Permit renewal application for the above referenced permit.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Brian Butts P.E.
Project Manager

John Bogнар, R.G.
Senior Project Manager

Attachments: Completed NPDES Permit Renewal Application

cc: Dan Chamberlin, P.E., R.G. Nestle Purina Petcare, Bloomfield, MO
MDNR Southeast Regional Office, Poplar Bluff, MO