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-0101184

Owner: Buckman Laboratories, Inc
Address: 14664 Highway 47, Cadet, Missouri 63630

Continuing Authority: Same as above
Address: Same as above

Facility Name: Buckman Laboratories, Inc.
Facility Address: 14664 Highway 47, Cadet, Missouri 63630

Legal Description: See Page 2
UTM Coordinates: See Page 2

Receiving Stream: See Page 2
First Classified Stream and ID: See Page 2
USGS Basin & Sub-watershed No.: See Page 2

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

FACILITY DESCRIPTION

SIC codes 2899 and 2879. Facility description – Buckman Laboratories is specialty chemical manufacturer serving the paper and pulp, water treatment, agricultural and leather treatment industries. Raw materials and manufactured products are stored in several tanks located in two buildings and in three tank farms. Additional small quantity raw material and products are located in a separate warehouse building. All plant processing and storage is located within secondary containment. Process wastewater is recycled back into manufacturing process via an on-site water treatment facility. All precipitation that falls in the areas of chemical handling, processing and storage is treated and excessive rainfall that exceeds capacity is shipped off-site for proper disposal at a Metropolitan St. Louis District POTW.

See Page 2 for Outfall Location and Description

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.

January 1, 2018
Edward B. Galbraith, Director, Division of Environmental Quality

December 31, 2022
Chris Wieberg, Director, Water Protection Program
FACILITY DESCRIPTION (CONTINUED)

Outfall #002 – Stormwater; SIC codes 2899 and 2879
Outfall #002 receives stormwater runoff from most of the manufacturing plant areas. Outfall #003 and #004 no longer discharge and runoff from this portion of the plant. Their flows are now collected and pumped by pipe to Outfall #002.

Legal Description: SE ¼, SW ¼, Sec. 27, T38N, R3E, Washington County
UTM Coordinates: X= 702773, Y= 4206294
Receiving Stream: Tributary to Mill Creek
First Classified Stream and ID: Mill Creek (P) (2118)
USGS Basin & Sub-watershed No.: (07140104-0301)

Design flow for 4 acre watershed with a rainfall event of 1 inch over 24 hours = 0.17 cfs
Actual flow is dependent upon precipitation.

Outfall #005 – Stormwater
Outfall #005 is an over-flow outfall from a fire pond – an industrial structure that would provide fire suppression in the event of a fire emergency. No chemical processing or storage occurs in this area.

Legal Description: NE ¼, SW ¼, Sec. 27, T38N, R3E, Washington County
UTM Coordinates: X= 702904, Y= 4206638
Receiving Stream: Tributary to Cadet Creek
First Classified Stream and ID: Cadet Creek (P) (2122)
USGS Basin & Sub-watershed No.: (07140104-0301)

Actual flow is dependent upon precipitation.

SM1 - ~1,000’ Downstream of Outfall 002

Legal Description: NW¼, NE¼, Sec. 34, T38N, R3E, Washington County
UTM Coordinates: X= 703266, Y= 4205933
Receiving Stream: Mill Creek (P)
First Classified Stream and ID: Mill Creek (P) (2118)
USGS Basin & Sub-watershed No.: (07140104-0301)

SM2 - Mill Creek at the point downstream of 002 where it leaves Buckman property

Legal Description: NW¼, NE¼, Sec. 34, T38N, R3E, Washington County
UTM Coordinates: X= 702958, Y= 4205930
Receiving Stream: Mill Creek (P)
First Classified Stream and ID: Mill Creek (P) (2118)
USGS Basin & Sub-watershed No.: (07140104-0301)

Domestic waste for the facility is collected and treated by means of a septic tank and subsurface tile field. Standard Conditions Part III applies.
## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

### OUTFALL #002
Stormwater Only

### 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 **January 1, 2018** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>Effluent Parameters</th>
<th>Units</th>
<th>Final Limitations</th>
<th>Monitoring Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Daily Maximum</td>
<td>Monthly Average</td>
</tr>
<tr>
<td><strong>PHYSICAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Precipitation</td>
<td>inches</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td><strong>CONVENTIONAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Oxygen Demand</td>
<td>mg/L</td>
<td>**</td>
<td>90</td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L</td>
<td>**</td>
<td>10</td>
</tr>
<tr>
<td>pH (Note 1)</td>
<td>SU</td>
<td>6.5 to 9.0</td>
<td>-</td>
</tr>
<tr>
<td>Settleable Solids</td>
<td>mL/L/hr</td>
<td>**</td>
<td>1.5</td>
</tr>
<tr>
<td>Total Organic Carbon (TOC)</td>
<td>mg/L</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td><strong>NUTRIENTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia as N</td>
<td>mg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Phosphorus, Total (TP)</td>
<td>mg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td><strong>OTHER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2 – Dichloroethane</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>1,4, - Diethylene Dioxide</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Organic Active Ingredients</td>
<td>µg/L</td>
<td>*</td>
<td>-</td>
</tr>
</tbody>
</table>
| **MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2018.**
|                           |        |                   |                         |                       |             |
|                           |        |                   |                         |                       |             |
| Whole Effluent Toxicity, Acute | TUₐ | *                | -                       | once/year       | grab ∞       |
| See Special Condition #1 |        |                   |                         |                       |             |

**MONITORING REPORTS SHALL BE SUBMITTED YEARLY; THE FIRST REPORT IS DUE JANUARY 28, 2019.**

**THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**
### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

**OUTFALL #005**  
Stormwater Only

<table>
<thead>
<tr>
<th>TABLE A-2</th>
<th>FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</th>
</tr>
</thead>
</table>

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 **January 1, 2018** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETERS</th>
<th>UNITS</th>
<th>FINAL LIMITATIONS</th>
<th>BENCHMARKS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>DAILY MAXIMUM</strong></td>
<td><strong>MONTHLY AVERAGE</strong></td>
<td>MEASUREMENT FREQUENCY</td>
</tr>
</tbody>
</table>

**PHYSICAL**

<table>
<thead>
<tr>
<th>Flow</th>
<th>MGD</th>
<th>*</th>
<th></th>
<th>once/quarter ◊</th>
<th>24 hr. estimate</th>
</tr>
</thead>
</table>

**CONVENTIONAL**

| Chemical Oxygen Demand | mg/L | ** | 90 | once/quarter ◊ | grab ∞ |
| Oil & Grease | mg/L | ** | 10 | once/quarter ◊ | grab ∞ |
| pH (Note 1) | SU | 6.5 to 9.0 | - | once/quarter ◊ | grab ∞ |
| Settleable Solids | mL/L/hr | ** | 1.5 | once/quarter ◊ | grab ∞ |

| Total Organic Carbon (TOC) | mg/L | * | | | |
| Ammonia as N | mg/L | * | | once/quarter ◊ | grab ∞ |
| Phosphorus, Total (TP) | mg/L | * | | once/quarter ◊ | grab ∞ |

**NUTRIENTS**

| 1,2 – Dichloroethane | µg/L | * | | once/quarter ◊ | grab ∞ |
| 1,4, - Diethylene Dioxide | µg/L | * | | once/quarter ◊ | grab ∞ |
| Organic Active Ingredients | µg/L | * | | once/quarter ◊ | grab ∞ |
| Bis (2-chloroethyl) ether (Note 2) | µg/L | * | | once/quarter ◊ | grab ∞ |

**OTHER**

**MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE APRIL 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

TABLE A-3.
INSTREAM MONITORING REQUIREMENTS

The monitoring requirements shall become effective on January 1, 2018 and remain in effect until expiration of the permit. The stream shall be monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>PARAMETER(S)</th>
<th>UNITS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM MONTHLY AVERAGE MEASUREMENT FREQUENCY SAMPLE TYPE</td>
</tr>
<tr>
<td>BIS (2-CHLOROETHYL)ETHER (NOTE 2) µG/L</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

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

TABLE A-4.
INSTREAM MONITORING REQUIREMENTS

The monitoring requirements shall become effective on January 1, 2018 and remain in effect until expiration of the permit. The stream shall be monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>PARAMETER(S)</th>
<th>UNITS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM MONTHLY AVERAGE MEASUREMENT FREQUENCY SAMPLE TYPE</td>
</tr>
<tr>
<td>BIS (2-CHLOROETHYL)ETHER (NOTE 2) µG/L</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

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

* Monitoring requirement only. Must be coincident with Outfall 002 sampling.
* Monitoring requirement only.
** Monitoring requirement with associated benchmark. See Special Conditions #3 through #6
∞ All samples shall be collected from a discharge resulting from a precipitation event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable precipitation event. If a discharge does not occur within the reporting period, report as no discharge. The total amount of precipitation should be noted from the event from which the samples were collected.

Note 1 The facility will report the minimum and maximum values. pH is not to be averaged.
Note 2 – According to EPA Method 611, analytical test methodologies for Bis (2-chloroethyl) ether can detect the parameter as low as 0.3µg/L in wastewater. This is a gas chromatographic (GC) method applicable to the determination of the compounds listed in municipal and industrial discharges as provided under 40 CFR Part 136.1. The facility shall use 40 CFR 136 approved methods and shall ensure the selected method(s) 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.
◊ Quarterly sampling

MINIMUM QUARTERLY SAMPLING REQUIREMENTS

<table>
<thead>
<tr>
<th>QUARTER</th>
<th>MONTHS</th>
<th>QUARTERLY EFFLUENT PARAMETERS</th>
<th>REPORT IS DUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>January, February, March</td>
<td>Sample at least once during any month of the quarter</td>
<td>April 28th</td>
</tr>
<tr>
<td>Second</td>
<td>April, May, June</td>
<td>Sample at least once during any month of the quarter</td>
<td>July 28th</td>
</tr>
<tr>
<td>Third</td>
<td>July, August, September</td>
<td>Sample at least once during any month of the quarter</td>
<td>October 28th</td>
</tr>
<tr>
<td>Fourth</td>
<td>October, November, December</td>
<td>Sample at least once during any month of the quarter</td>
<td>January 28th</td>
</tr>
</tbody>
</table>
B. STANDARD CONDITIONS

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

C. SPECIAL CONDITIONS

1. 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:
   (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
   (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   (d) The Allowable Effluent Concentration (AEC) for this facility is 100% with the dilution series being: 100%, 50%, 25%, 12.5%, and 6.25%.
   (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
   (f) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of 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. Electronic Discharge Monitoring Report (eDMR) Submission System
   (a) Discharge Monitoring Reporting Requirements. The permittee must electronically submit compliance monitoring data via the eDMR system. In regards to Standard Conditions Part I, Section B, #7, the eDMR system is currently the only Department approved reporting method for this permit.
   (b) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
      (1) General Permit Applications/Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs);
      (3) No Exposure Certifications (NOEs);
      (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
   (c) Electronic Submissions. To access the eDMR system, use the following link in your web browser: https://edmr.dnr.mo.gov/edmr/E2/Shared/Pages/Main/Login.aspx.
   (d) Waivers from Electronic Reporting. The permittee must electronically submit compliance monitoring data and reports unless a waiver is granted by the department in compliance with 40 CFR Part 127. The permittee may obtain an electronic reporting waiver by first submitting an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. The department will either approve or deny this electronic reporting waiver request within 120 calendar days. Only permittees with an approved waiver request may submit monitoring data and reports on paper to the Department for the period that the approved electronic reporting waiver is effective.

3. The purpose of the Stormwater Pollution Prevention Plan (SWPPP) and the Best Management Practices (BMPs) listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.
C. SPECIAL CONDITIONS (CONTINUED)

4. The facility’s SIC code(s) is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a SWPPP which must be prepared and implemented upon permit issuance. The SWPPP must be kept on-site and should not be sent to the department unless specifically requested. The SWPPP must be reviewed and updated every five (5) years or as site conditions change (see Part III: Antidegradation Analysis and SWPPP sections in the fact sheet). The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: *Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators*, (EPA 833-B-09-002) published by the EPA in February 2009 ([www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf](http://www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf)). The SWPPP must include:
   
   (a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.
   
   (b) The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.

   i. Operational deficiencies must be corrected within seven (7) calendar days.
   
   ii. Minor structural deficiencies must be corrected within fourteen (14) calendar days.
   
   iii. Major structural deficiencies must be reported to the regional office within seven (7) days of discovery. The initial report shall consist of the deficiency noted, the proposed remedies, the interim or temporary remedies (including the general timing of the placement of the interim measures), and an estimate of the timeframe needed to wholly complete the repairs or construction. The permittee will work with the regional office to determine the best course of action, including but not limited to temporary structures to control stormwater runoff. The facility shall correct the major structural deficiency as soon as reasonably achievable.

   iv. All actions taken to correct the deficiencies shall be included with the written report, including photographs.
   
   v. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to department and EPA personnel upon request.

   (c) A provision for designating an individual to be responsible for environmental matters.
   
   (d) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of the department.
   
   (e) A storm water pollution prevention plan shall include procedure for identifying the source areas of the Bis (2-chloroethyl) ether present in the storm water, and best management practices for reducing or eliminating the presence of Bis (2-chloroethyl) ether in storm water.

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

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

6. Permittee shall adhere to the following minimum Best Management Practices (BMPs):
   
   (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of stormwater from these substances.
   
   (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
C. SPECIAL CONDITIONS (CONTINUED)

(c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to stormwater or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of stormwater with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.

(d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.

(e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property to comply with general water quality criteria, effluent limits, or benchmarks. This could include the use of straw bales, silt fences, or sediment basins, if needed.

(f) Ensure adequate provisions are provided to prevent surface water intrusion into the storage basin, to divert stormwater runoff around the storage basin, and to protect embankments from erosion.

7. To protect the general criteria found at 10 CSR 20-7.031(4), before releasing water accumulated in secondary containment areas, it must be examined for hydrocarbon odor and presence of sheen. If the presence of odor or sheen is indicated, the water shall be treated using an appropriate method or disposed of in accordance with legally approved methods, such as being sent to a wastewater treatment facility. Following treatment, the water shall be tested for oil and grease, benzene, toluene, ethylbenzene, and xylene using 40 CFR part 136 methods. All pollutant levels must be below the most protective, applicable standards for the receiving stream, found in 10 CSR 20-7.031 Table A. Records of all testing and treatment of water accumulated in secondary containment shall be stored in the SWPPP to be available on demand to DNR and EPA personnel.

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

9. The full implementation of this operating permit, which includes implementation of any applicable schedules of compliance, shall constitute compliance with all applicable federal and state statutes and regulations in accordance with §644.051.16, RSMo, and the CWA section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), §304(b)(2), and §307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or controls any pollutant not limited in the permit.

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

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

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

(b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels”:
   (1) Five hundred micrograms per liter (500 µg/l);
   (2) One milligram per liter (1 mg/l) for antimony;
   (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with §122.21(g)(7).
   (4) The level established by the Director in accordance with §122.44(f).
C. SPECIAL CONDITIONS (CONTINUED)

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

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

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

15. 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.

16. RECEIVING WATER MONITORING CONDITIONS

<table>
<thead>
<tr>
<th>Site SM1</th>
<th>Downstream of Outfall 002</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAMETER(S)</td>
<td>LOCATION</td>
</tr>
<tr>
<td>Bis (2-chloroethyl)ether</td>
<td>~1,000’ Downstream of Outfall 002</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site SM2</th>
<th>Exit of Mill Creek from Buckman Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARAMETER(S)</td>
<td>LOCATION</td>
</tr>
<tr>
<td>Bis (2-chloroethyl) ether</td>
<td>Mill Creek at the point downstream of 002 where it leaves Buckman property</td>
</tr>
</tbody>
</table>

a. In-stream samples should be taken at the location(s) specified on page 2 of this permit. In the event that a safe, accessible location is not present at this location, a suitable location can be negotiated with the department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface.

b. When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream/lake characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) from where the sample was collected. These observations shall be submitted with the sample results.

c. Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
   - If turbidity in the stream increases notably; or
   - If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hours

d. Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of Standard Methods for the Examination of Water and Wastewater for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an approved EPA method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.

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

As per [40 CFR Part 124.8(a)] and [10 CSR 20-6.020(12)] 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.

Facility Information:

Facility Type: Major Industrial -- Storm Water, 40 CFR 455
Facility SIC Code(s): 2899 and 2879
Application Date: 11/22/2016
Expiration Date: 02/02/2017
Last Inspection: 03/16/2016 in compliance

FACILITY DESCRIPTION:
Buckman Laboratories is a specialty chemical manufacturer (SIC codes 2899 and 2879) serving the paper and pulp, water treatment, agricultural and leather treatment industries. Raw materials and manufactured products are stored in several tanks located in two buildings and in three tank farms. Additional small quantity raw material and products are located in a separate warehouse building. All plant processing and storage is located within secondary containment. Process wastewater is recycled back into manufacturing process via an on-site water treatment facility. The water treatment consists of filtration and ozonation. The design flow is 2,986 gallons per day. All precipitation that falls in the areas of chemical handling, processing and storage is treated and excessive rainfall that exceeds capacity is shipped off-site for proper disposal at a Metropolitan St. Louis District (MSD) POTW. MSD issues permits to haulers of industrial wastewater. A permit was issued to Buckman USA on July 1, 2016, permit # 7777708700-3. Solids from the sedimentation process are barreled and removed as a hazardous waste.

No changes have occurred at this facility or in the receiving water body that affects effluent limit derivation.

PERMITTED FEATURES TABLE:

<table>
<thead>
<tr>
<th>OUTFALL</th>
<th>AVERAGE FLOW MGD</th>
<th>TREATMENT LEVEL</th>
<th>EFFLUENT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>#002</td>
<td>0.524</td>
<td>BMP</td>
<td>Storm water</td>
</tr>
<tr>
<td>#005</td>
<td>0.0439</td>
<td>BMP</td>
<td>Storm water</td>
</tr>
</tbody>
</table>

FACILITY PERFORMANCE HISTORY & COMMENTS:
The electronic discharge monitoring reports were reviewed for the last five years. No violations were noted. Last inspection that was conducted on 3/16/16 was in compliance. No WET test failures were noted.

Outfall #002: Organic active ingredients (40 CFR455) – low; COD has relatively low and below benchmark value. Bis (2-chloroethyl) ether ranged from 588 ug/L and 0.032 ug/L over the five year sampling period, and continuing to be detected in most sampling events, it was higher in 2017 than in any year of the five year period. 1,4, - Diethylene Dioxide – elevated in 2017.

Outfall #005: Organic active ingredients (40 CFR455)- low. Small quantities of Bis(2-chloroethyl) ether; COD has relatively low and below benchmark value; 1,4, - Diethylene Dioxide has a few detections from 2014 to the present;
Staff is not aware of any significant changes at the facility in the past several years; however, this review will include that the old Outfall 001 that was associated with an old process wastewater system has no discharge; currently, the facility recycles all of its process water, so there is no discharge from 001. Outfall 002 and 005 are the two remaining outfalls. Outfall 002 receives virtually all the runoff from the entire plant. Runoff flows that once discharged from Outfall 003 are now collected and pumped to Outfall 002. Outfall 005 consists of overflow discharge from a fire pond that receives runoff from the area around the pond. The watershed of the pond is landscaped and vegetated and, based on past sampling, likely has little chance of significant pollutant discharge.

FACILITY MAP:
RECEIVING WATER BODY’S WATER QUALITY:
For Bis (2-chloroethyl) ether, the facility had detection at the in stream monitoring point, SM1 and SM2, from March 2014 to the present. The human health fish consumption water quality standard for Bis (2-chloroethyl) ether is 1.4 ug/L. On 5/31/16, one SM2 sample was detected at 100 ug/L which is well beyond the standard. Staff did not conduct a reasonable potential to exceed water quality standards for Bis (2-chloroethyl) ether; however after our review of these data, we believe the in stream monitoring should continue with the special conditions outlined in the permit.

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

TOTAL MAXIMUM DAILY LOAD (TMDL):
A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected; hence, the purpose of a TMDL is to determine the pollutant loading a specific waterbody can assimilate without exceeding water quality standards. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan or TMDL may be developed. The TMDL shall include the WLA calculation. http://dnr.mo.gov/env/wpp/tmdl/
✓ Not applicable; this facility is not associated with a TMDL.

APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:
✓ As per Missouri’s Effluent Regulations [10 CSR 20-7.015(1)(B)], the waters of the state are divided into the following seven categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall’s effluent limitation table and further discussed in the derivation & discussion of limits section.
- Missouri or Mississippi River: ☑
- Lake or Reservoir: ☑
- Losing: ☑
- Metropolitan No-Discharge: ☑
- Special Stream: ☑
- Subsurface Water: ☑
- All Other Waters: ☑
RECEIVING STREAMS TABLE:

<table>
<thead>
<tr>
<th>OUTFALL</th>
<th>WATERBODY NAME</th>
<th>CLASS</th>
<th>WBID</th>
<th>DESIGNATED USES*</th>
<th>DISTANCE TO SEGMENT (MILES)</th>
<th>12-DIGIT HUC</th>
</tr>
</thead>
<tbody>
<tr>
<td>#002</td>
<td>Tributary to Mill Creek</td>
<td>n/a</td>
<td></td>
<td>General Criteria</td>
<td>0.28</td>
<td></td>
</tr>
<tr>
<td>#005</td>
<td>Tributary to Cadet Creek</td>
<td>n/a</td>
<td></td>
<td>General Criteria</td>
<td>0.12</td>
<td>07140104-0301</td>
</tr>
<tr>
<td>SM1/SM2</td>
<td>Mill Creek</td>
<td>P</td>
<td>2118</td>
<td>LWW, AQL, WBC(B)</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

n/a = not applicable
WBID = Waterbody IDentification: Missouri Use Designation Dataset 8-20-13 MUDD V1.0 data can be found as an ArcGIS shapefile on MSDIS at [ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use.shp.zip](ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use.shp.zip)

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

Uses which may be found in the receiving streams table, above:
10 CSR 20-7.031(1)(C)1.: AQL = Protection of aquatic life (Current narrative use(s) are defined to ensure the protection and propagation of fish, shellfish, and wildlife, which is further subcategorized as: WWH = Warm Water Habitat; CLH = Cool Water Habitat; CDH = Cold Water Habitat; EAH = Ephemeral Aquatic Habitat; MAH = Modified Aquatic Habitat; LAH = Limited Aquatic Habitat. This permit uses AQL effluent limitations in 10 CSR 20-7.031 Table A for all habitat designations unless otherwise specified.)
10 CSR 20-7.031(1)(C)2.: Recreation in and on the water
WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = Whole body contact recreation supporting swimming uses and has public access;
WBC-B = Whole body contact recreation supporting swimming;
SCR = Secondary Contact Recreation (like fishing, wading, and boating).
10 CSR 20-7.031(1)(C)3.: to 7.: HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish;
IRR = Irrigation for use on crops utilized for human or livestock consumption;
LWW = Livestock and wildlife watering (Current narrative use is defined as LWP = Livestock and Wildlife Protection);
DWS = Drinking Water Supply;
IND = Industrial water supply
10 CSR 20-7.031(1)(C)6.: GRW = Groundwater

RECEIVING STREAM LOW-FLOW VALUES:

<table>
<thead>
<tr>
<th>RECEIVING STREAM (U, C, P)</th>
<th>LOW-FLOW VALUES (CFS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1Q10</td>
</tr>
<tr>
<td>Mill Creek</td>
<td>0.1</td>
</tr>
</tbody>
</table>

THE MAY 1998 STORM WATER MANAGEMENT PLAN FOR BUCKMAN LABORATORIES, PREPARED BY THE FORRESTER GROUP, MEASURED BASE FLOW IN MILL CREEK AT 12 CFS.

MILL CREEK MIXING CONSIDERATIONS TABLE:

<table>
<thead>
<tr>
<th>MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)…]</th>
<th>ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)…]</th>
</tr>
</thead>
<tbody>
<tr>
<td>7Q10</td>
<td>1Q10</td>
</tr>
<tr>
<td>30Q10</td>
<td>7Q10</td>
</tr>
<tr>
<td>0.025</td>
<td>0.25</td>
</tr>
<tr>
<td>0.25</td>
<td>0.025</td>
</tr>
<tr>
<td>0.025</td>
<td>0.025</td>
</tr>
</tbody>
</table>

RECEIVING STREAM MONITORING REQUIREMENTS:

At approximately 1,000 feet downstream of Outfall #002, the current permit requires a grab sample to test for Bis (2-chloroethyl) ether. This test was taken quarterly to correlate with effluent sampling. From December 2006 to the present, in stream sampling did not detect any Bis (2-chloroethyl) ether. Another such monitoring point was within Mill Creek at the point downstream of Outfall #002 where it leaves the Buckman property. At this monitoring point, the facility found no detections of Bis (2-chloroethyl) ether.
### Site SM1. Downstream of Outfall 002

<table>
<thead>
<tr>
<th>PARAMETER(S)</th>
<th>SAMPLING FREQUENCY</th>
<th>SAMPLE TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis (2-chloroethyl)</td>
<td>Once/Month (Coincident with 002</td>
<td>Grab</td>
<td>~1,000’ Downstream of Outfall 002</td>
</tr>
<tr>
<td>ether</td>
<td>sampling)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Site SM2. Exit of Mill Creek from Buckman Property

<table>
<thead>
<tr>
<th>PARAMETER(S)</th>
<th>SAMPLING FREQUENCY</th>
<th>SAMPLE TYPE</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis (2-chloroethyl)</td>
<td>Once/Month (Coincident with 002</td>
<td>Grab</td>
<td>Mill Creek at the point downstream</td>
</tr>
<tr>
<td>ether</td>
<td>sampling)</td>
<td></td>
<td>of 002 where it leaves Buckman</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>property</td>
</tr>
</tbody>
</table>

### Rationale and Derivation of Effluent Limitations & Permit Conditions

**ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:**

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

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

**ANTI-BACKSLIDING:**

Federal Regulations [CWA §303(d)(4); CWA §402(c); 40 CFR Part 122.44(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.

- The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
  - 5 years of DMR data were supplied to the permit writer which a support conversion of some limits on outfall #002, #005 to benchmarks; see below for more information.
  - There will be no changes to industrial activities onsite or the composition of the stormwater discharge as a result of this renewal. The benchmark concentrations and required corrective actions within this permit are protective of the receiving stream’s uses to be maintained.
  - Monthly averages were not implemented for outfalls #002, AND #005 in this permit as the discharge consists of only stormwater which is not continuous pursuant to 40 CFR 122.45(d). Further, average monthly limitations are impracticable measures of non-continuous stormwater discharges because they vary widely in frequency, magnitude, and duration. This permit applies only acute short-term or daily maximum measures which represent stormwater discharges which are acute and sporadic in nature. Discharges of industrial stormwater rarely persist for long durations, making them impracticable to assess using measures with long term exposures or averaging periods. Last, the instream water quality target remains unchanged and the conditions of this permit are protective of both narrative and numeric water quality criteria.
  - The previous permit contained a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4); however, there was no determination as to whether the discharges have reasonable potential to cause or contribute to excursion of those general water quality standards in the previous permit. Federal regulations 40 CFR 122.44(d)(1)(iii) requires that in instances were reasonable potential (RP) to cause or contribute to an exceedance of a water quality standard exists, a numeric limitation must be included in the permit. Rather than conducting the appropriate RP determination and establishing numeric effluent limitations for specific pollutant parameters, the previous permit simply placed the prohibitions in the permit. These conditions were removed from the permit. Appropriate reasonable potential determinations were conducted for each general criterion listed in 10 CSR 20-7.031(4) and effluent limitations were placed in the permit for those general criteria where it was determined the discharge had reasonable potential to cause or contribute to excursions of the general criteria. Specific effluent limitations were not included for those general criteria where it was determined that the discharges will not cause or contribute to excursions of general criteria. Removal of the prohibitions does not reduce the protections of the permit or allow for impairment of the receiving stream. The permit maintains sufficient effluent limitations, monitoring requirements and best management practices to protect water quality.

**ANTIDEGRADATION REVIEW:**

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

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

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

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

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

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

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

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

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

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

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

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

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

- The facility has an associated ELG (40 CFR 455) but does not discharge wastewater to waters of the state; stormwater discharges are not addressed by the ELG.
GROUNDWATER MONITORING:
Groundwater is a water of the state according to 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.
✓ This facility is not required to monitor groundwater for the water protection program.

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

REASONABLE POTENTIAL ANALYSIS (RPA):
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are (or may be) discharged at a level causing or have the reasonable potential to cause (or contribute to) an in-stream excursion above narrative or numeric water quality standards. If the permit writer determines any give pollutant has the reasonable potential to cause or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant [40 CFR Part 122.44(d)(1)(iii)].
✓ Not applicable; an RPA was not conducted for this facility. This permit establishes benchmarks for stormwater. The department has determined stormwater is not a continuous discharge and is therefore not necessarily dependent on mathematical RPAs. However, the permit writer completed an RPD, a reasonable potential determination, using best professional judgment for all of the appropriate parameters in this permit. An RPD consists of reviewing application data and/or discharge monitoring data for the last five years and comparing those data to narrative or numeric water quality criteria.

SCHEDULE OF COMPLIANCE (SOC):
A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, effluent limits, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. SOCs are allowed under 40 CFR 122.47 providing certain conditions are met.
✓ Not applicable; this permit does not contain a SOC.

SECONDARY CONTAINMENT STRUCTURES SPECIAL CONDITION:
The special condition has been revised in all permits beginning in 2015 to include oil and grease and BTEX (benzene, toluene, ethylbenzene, and xylene) sampling of the potentially contaminated stormwater in secondary containment. This change was due to 1) no water quality standards for TPH; and 2) there are no approved methods found in 40 CFR 136 for TPH. The facility need only sample for these constituents prior to release when a sheen or petroleum odor is present.

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

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

It is likely sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except ammonia, which is based on a thirty day exposure). In the event a discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute stormwater discharges from a facility. For these reasons, most industrial stormwater facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.
Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(4) and (5)(4)(B)]. Therefore, industrial stormwater facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

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

**STORMWATER POLLUTION PREVENTION PLAN (SWPPP):**

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

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

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

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

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

If parameter-specific numeric exceedances continue to occur and the permittee feels there are no practicable or cost-effective BMPs which will sufficiently reduce a pollutant concentration in the discharge to the benchmark values established in the permit, the permittee can submit a request to re-evaluate the benchmark values. This request needs to include 1) a detailed explanation of why the facility is unable to comply with the permit conditions and unable to establish BMPs to achieve the benchmark values; 2)
TECHNOLOGY-BASED EFFLUENT LIMITATIONS (TBEL):

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

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

Baselines to determine contaminants of concern are found in the Development Document for Effluent Limitations Guidelines and Standards for the Centralized Waste Treatment Industry – Final (EPA 821-R-00-020; August 2000). The baselines represent the treatable concentration of model technology which would effectually treat a pollutant. Chapter 6 Table 6-1 directs the permit writer to multiply the baseline by ten to determine if the parameter is a pollutant of concern. The following table determines the parameters for which a TBEL must be considered; baseline values are retrieved from chapter six.
When developing TBELs for industrial facilities, the permit writer must consider all applicable technology standards and requirements for all pollutants discharged above baseline level. Without applicable effluent guidelines for the discharge or pollutant, permit writers must identify any needed TBELs on a case-by-case basis, in accordance with the statutory factors specified in CWA sections 301(b)(2) and 304(b). The site-specific TBELs reflect the BPJ of the permit writer, taking into account the same statutory factors EPA would use in promulgating a national effluent guideline regulation, but they are applied to the circumstances relating to the applicant. The permit writer also should identify whether state laws or regulations govern TBELs and might require more stringent performance standards than those required by federal regulations. In some cases, a single permit could have TBELs based on effluent guidelines, best professional judgment, state law, and WQBELs based on water quality standards.

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

For each parameter, group of parameters, or outfall treatment process, the facility will summarize the relevant factors below in facility-specific (or waste-stream specific) case-by-case TBEL development. The permittee will supply the required information to the department so a technology based effluent limitation can be applied in the permit if applicable.

- Not applicable; this facility does not discharge process wastewater therefore is not subject to TBEL POC analysis.

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

- Not applicable; this permit is not drafted under premise of a petition for variance.
WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:
As per [10 CSR 20-2.010(78)], the WLA is the amount of pollutant each discharger is allowed to discharge into the receiving stream without endangering water quality. Two general types of effluent limitations, technology-based effluent limits (TBELs) and water quality based effluent limits (WQBELs) are reviewed. If one limit does provide adequate protection for the receiving waters, then the other must be used.
✓ Not applicable; wasteload allocations were not calculated.

WLA MODELING:
Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.
✓ Not applicable; a WLA study was either not submitted or determined not applicable by department staff.

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

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

- Facility is a designated a Major
- Facility continuously or routinely exceeds its design flow
- Facility that exceeds its design population equivalent (PE) for BOD₃ whether or not its design flow is being exceeded
- Facility (whether primarily domestic or industrial) that alters its production process throughout the year
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts
- Facility has Water Quality-Based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality with a Design Flow ≥ 22,500 GPD
- Other – please justify

Effluent Limits Determination
Effluent limitations derived and established in the below effluent limitations table are based on current operations of the facility. Effluent means both process water and stormwater. Any flow through the outfall is considered a discharge and must be sampled and reported as provided below. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

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

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.

- For all outfalls, there is no RP for putrescent bottom deposits preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates putrescent wastewater would be discharged from the facility.
- For all outfalls, there is no RP for unsightly or harmful bottom deposits preventing full maintenance of beneficial uses because all outfalls have SS limitations, however, they are all based on technology for the processes involved; values discharged from all outfalls are typically below WQ limitations, therefore no RP.
- Stormwater runoff discharges through Outfall #005 following treatment in the Fire Pond. This catchment basin provides for settling of solids or other material that would otherwise have been in the discharged. This basin provides sufficient treatment of solids runoff. The settling time will prevent solids from being discharged from the top of the dam, thus resulting in no reasonable potential for the discharge to cause unsightly or harmful bottom deposits in the receiving stream. There is no evidence that the pollutants being discharged from this outfall will result in the formation of putrescent substances. Only stormwater runoff through this outfall. There is no domestic (sanitary) wastewater entering the basin. There could potentially be other types of organic matter entering the basin, such as grass or other vegetation, wild animal wastes or dead animals. However, it is not reasonable to assume this matter is in concentrations that could violate the general criterion 10 CSR 20-7.031(4)(A). Based on these facts, the discharge does not have reasonable potential to cause or violate the general criterion 10 CSR 20-7.031(4)(A). Additionally, the permittee is required to monitoring for COD and TSS, with a benchmark value for COD. These parameters are included in this stormwater permit as technology-based. The permittee is also required to maintain best management practices to reduce or prevent pollution in stormwater. These requirements sufficiently protect water quality.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses.

- For all outfalls, there is no RP for oil in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal or during prior sampling for DMR requirements for these outfalls indicates oil will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for scum and floating debris in sufficient amounts to be unsightly preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses.
- Stormwater runoff drains from the facility grounds into Outfall 002 and 005 (Fire Pond). There are no activities occurring on the site that would result in floating debris in the discharge. The best management practices are sufficient to protect the general water quality standard.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.

- For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates unsightly color or turbidity will be present in sufficient amounts to impair beneficial uses.
- For all outfalls, there is no RP for offensive odor in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee at renewal for these outfalls indicates offensive odor will be present in sufficient amounts to impair beneficial uses.
- Stormwater runoff drains from the facility grounds into Outfall #002 and #005 (Fire Pond). As discussed above, the Fire Pond provides treatment for stormwater runoff from portions of facility. This large catchment basin may allow sufficient holding time for solids or other suspended materials to settle prior to discharge. This level of treatment can reduce the pollutants causing or contributing to color or turbidity in discharges that could cause changes from natural stream color or turbidity. This outfall discharges stormwater runoff. It is not expected that stormwater will contain anything with offensive odor.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.

- This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.
- The permit writer already considered specific toxic pollutants. If there were evidence of toxicity, numeric effluent limitations would be included for those pollutants that could be discharged in toxic amounts. These effluent limitations would be protective of human health, animals, and aquatic life.
(E) There shall be no significant human health hazard from incidental contact with the water.
   - This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.
   - Much like the condition above, the permit writer has already considered specific toxic pollutants, including those pollutants that could cause human health hazards. The discharge is already limited by numeric effluent limitations for those conditions that could result in human health hazards.
   - It is the permit writer’s opinion that this criterion is the same as (D).

(F) There shall be no acute toxicity to livestock or wildlife watering.
   - This facility has numeric effluent limitations for WET testing; specific toxic pollutants are discussed below in Derivation and Discussion of Limits, and where appropriate, numeric effluent limitations added.
   - Much like the condition above, the permit writer has already considered specific toxic pollutants, including those pollutants that could cause human health hazards. The discharge is already limited by numeric effluent limitations for those conditions that could result in human health hazards.
   - It is the permit writer’s opinion that this criterion is the same as (D).

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community.
   - For all outfalls, there is no RP for physical changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates physical changes that would impair the natural biological community.
   - For outfalls #002 and #005, there is no RP for chemical changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates chemical changes that would impair the natural biological community.
   - For all outfalls, there is no RP for hydrologic changes that would impair the natural biological community because nothing disclosed by the permittee at renewal for these outfalls indicates physical changes that would impair the natural biological community.

(H) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
   - There are no solid waste disposal activities or any operation that has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.
**OUTFALL #002 – MAIN FACILITY STORMWATER OUTFALL**

**EFFLUENT LIMITATIONS TABLE:**

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>UNIT</th>
<th>BASIS</th>
<th>DAILY MAXIMUM LIMIT</th>
<th>BENCHMARK</th>
<th>PREVIOUS PERMIT LIMITS</th>
<th>MINIMUM SAMPLING FREQUENCY</th>
<th>MINIMUM REPORTING FREQUENCY</th>
<th>SAMPLE TYPE</th>
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<tr>
<td>PHYSICAL</td>
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<td></td>
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<tr>
<td>Flow</td>
<td>MGD</td>
<td>1</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>24 HR. ESTIMATE</td>
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<tr>
<td>Precipitation</td>
<td>INCHES</td>
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<td>24 HR. TOTAL</td>
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<td>Chemical Oxygen Demand (COD)</td>
<td>MG/L</td>
<td>6, 8</td>
<td>**</td>
<td>90</td>
<td>*</td>
<td>ONCE/QUARTER</td>
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<td>GRAB</td>
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<tr>
<td>Oil &amp; Grease</td>
<td>MG/L</td>
<td>6</td>
<td>**</td>
<td>10</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
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<td>pH ‡</td>
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<td>6.5 TO 9.0</td>
<td>-</td>
<td>SAME</td>
<td>ONCE/QUARTER</td>
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<td>GRAB</td>
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<td>ML/L/HR</td>
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<td>**</td>
<td>1.5</td>
<td>*</td>
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<td>GRAB</td>
</tr>
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<td>Total Organic Carbon (TOC)</td>
<td>MG/L</td>
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<td>*</td>
<td>-</td>
<td>*</td>
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<td>NUTRIENTS</td>
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<td>Ammonia as N</td>
<td>MG/L</td>
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<td>*</td>
<td>-</td>
<td>*</td>
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<td>ONCE/QUARTER</td>
<td>GRAB</td>
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<tr>
<td>Total Phosphorus as P</td>
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<td>*</td>
<td>-</td>
<td>*</td>
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<td>ONCE/QUARTER</td>
<td>GRAB</td>
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<td>ORGANIC CHEMICALS</td>
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<td>1,2 – Dichloroethane</td>
<td>µG/L</td>
<td>NA</td>
<td>*</td>
<td>-</td>
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<td>ONCE/QUARTER</td>
<td>GRAB</td>
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<tr>
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<td>*</td>
<td>-</td>
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<td>ONCE/QUARTER</td>
<td>GRAB</td>
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<td>GRAB</td>
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<td>µG/L</td>
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<td>-</td>
<td>*</td>
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<td>Acute Wet Test</td>
<td>TUa</td>
<td>8</td>
<td>*</td>
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<td>PASS/FAIL</td>
<td>ONCE/YEAR</td>
<td>ONCE/YEAR</td>
<td>GRAB</td>
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</tbody>
</table>

* Monitoring requirement only  
** Monitoring with associated benchmark  
† The facility will report the minimum and maximum pH values; pH is not to be averaged  
\* NEW Parameter not established in previous operating permit  
TR Total Recoverable

**DERIVATION AND DISCUSSION OF LIMITS:**

**PHYSICAL:**

**Flow**

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

**Precipitation**

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 storm water runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters. It is not necessary to report all days of precipitation during the month because of the readily available on-line data.
CONVENTIONAL:

**Chemical Oxygen Demand (COD)**
Monitoring is included using the permit writer’s best professional judgment. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater that cause an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs. Additionally, a benchmark value will be implemented for this parameter. The benchmark value will be set at 90 mg/L. This value falls within the range of values implemented in other permits that have similar industrial activities.

**Oil & Grease**
Monitoring, with a daily maximum benchmark of 10 mg/L. This is a technology based benchmark that is believed to be achievable at this site based on DMR data. It is in the professional judgment of the permit writer to require monitoring of this pollutant with a benchmark that represents a technology based standard found to be achievable in other industrial permits.

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

**Settleable Solids (SS)**
Monitoring is included using the permit writer’s best professional judgment. There is no 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 that may indicate uncontrolled materials leaving the site. Similar facilities have permit limits of 1.5 mL/L/hour daily maximum and 1.0 mL/L/hour monthly average are typical and achievable. Additionally, a benchmark value will be implemented for this parameter. The benchmark value will be set at 1.5 mL/L/hour. This value falls within the range of values implemented in other permits that have similar industrial activities.

**Total Organic Carbon (TOC)**
Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

**NUTRIENTS:**

- **Total Ammonia Nitrogen**
  Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

- **Total Phosphorus as P**
  Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

**ORGANIC CHEMICALS:**

- **Bis (2-chloroethyl) ether**
  Monitoring only. The water quality standards criteria, human health protection (HHP), for this parameter is 1.4 ug/L. This chronic criterion is based on the assumption of an average amount of fish consumption on a long-term basis. The discharge monitoring data collected from January 2012 to March 2017 (present) were assessed and this pollutant has no reasonable potential to exceed water quality standards in the receiving stream’s after mixing. While mixing is not allowed for this discharge location as it is not a direct discharge to Mill Creek, this is a reasonable assessment due to in stream monitoring data. Outfall 002 values were 127 ug/L to near zero. Data was collected monthly, and out of 63 reported sampling events, 24 sampling events were reported as no discharge. 16 of the samples that were collected from #002 exceeded the criteria but were not reflected in the corresponding instream sample. Further it appears the facility may not be utilizing a sufficiently sensitive method in accordance with 122.44(i).

Moreover, the facility monitors the receiving stream at two locations. This in-stream monitoring corresponds with the sampling from Outfall 002. No detections were found during stream monitoring. Because the outfall monitoring demonstrated a reasonable potential to exceed water quality standards, Water Protection Program staff has determined that in stream sampling must continue as defined in the permit. The in-stream monitoring will continue in lieu of a limitation (as described in the September 2006 permit, the rationale for the in-stream monitoring was to demonstrate that no actual in-stream exceedence will occur); therefore, monitoring only has been retained from previous state operating permit. The
permittee is to continue to locate the source area for the pollutant and reduce or eliminate the amount of the pollutant getting into storm water. See Appendix A. Graphic of Outfall 002, Instream monitoring station SM1 and SM2.

Storm water flows under the site fence by pipe into a small rocked channel (approximately 300 yards) to Outfall 002 that discharges to Mill Creek (P-stream). Note that concentrations of bis (2-chloroethyl) ether or DCEE may be higher if piped directly to the stream. Rocks that are present on site may provide turbulence that promotes volatilization of DCEE. DCEE has been a source of stream pollution over the years. Different sources and leaks have contributed to the discharge of DCEE into Mill Creek. The facility has several measures to reduce discharge of DCEE:

a. Site has, surrounding the operations area, a subsurface slurry wall of concrete and clay. The intent of the wall is to contain leaks or spills.

b. A canopy covering over the plant to reduce rainfall into the operation area.

c. Secondary containment around the tank farms.

These measures seem to be working at times but in heavy precipitation events they may not be working, and we ask in Special Condition # 4e that the permittee determine the source of the DCEE and develop more effective practices that reduce the discharge of DCEE in storm water.

- **1,2 Dichloroethane.** Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

- **1,4 Diethylene Dioxide.** Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

- **Organic Active Ingredients.** Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

**OTHER:**

**Whole Effluent Toxicity (WET) Test, Acute**

Monitoring is required to determine if reasonable potential exists for the discharge to cause toxicity within the receiving stream.

The standard Allowable Effluent Concentration (AEC) for facilities discharging to unclassified, Class C, Class P (with default mixing considerations), or lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] is 100%.

The standard dilution series for facilities discharging to unclassified, Class C, Class P (with default mixing considerations), or lakes [10 CSR 20-7.031(4)(A)4.B.(IV)(b)] is 100%, 50%, 25%, 12.5%, & 6.25%.
## Outfall #005 – Stormwater

### Effluent Limitations Table:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Unit</th>
<th>Basis</th>
<th>Daily Maximum Limit</th>
<th>Benchmark</th>
<th>Previous Permit Limits</th>
<th>Minimum Sampling Frequency</th>
<th>Minimum Reporting Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>1</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>24 HR. ESTIMATE</td>
</tr>
<tr>
<td>Precipitation</td>
<td>INCHES</td>
<td>6</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>24 HR. TOTAL</td>
</tr>
<tr>
<td><strong>Conventional</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical Oxygen Demand (COD)</td>
<td>MG/L</td>
<td>6, 8</td>
<td>**</td>
<td>90</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Total Organic Carbon (TOC)</td>
<td>MG/L</td>
<td>6</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>MG/L</td>
<td>6</td>
<td>**</td>
<td>10</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>pH</td>
<td>SU</td>
<td>1, 3</td>
<td>6.5 to 9.0</td>
<td>-</td>
<td>SAME</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Settleable Solids</td>
<td>mL/L/HR</td>
<td>6</td>
<td>*</td>
<td>1.5</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td><strong>Nutrients</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia as N</td>
<td>MG/L</td>
<td>NA</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Total Phosphorus as P</td>
<td>MG/L</td>
<td>NA</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td><strong>Organic Chemicals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2 – Dichloroethane</td>
<td>µG/L</td>
<td>NA</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>1,4 – Diethylene Dioxide</td>
<td>µG/L</td>
<td>NA</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Organic Active Ingredients</td>
<td>µG/L</td>
<td>NA</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
<tr>
<td>Bis (2-Chloroethyl) Ether</td>
<td>µG/L</td>
<td>NA</td>
<td>*</td>
<td>-</td>
<td>*</td>
<td>ONCE/QUARTER</td>
<td>ONCE/QUARTER</td>
<td>GRAB</td>
</tr>
</tbody>
</table>

* Monitoring requirement only
** Monitoring with associated benchmark
† The facility will report the minimum and maximum pH values; pH is not to be averaged
NEW Parameter not established in previous operating permit
TR Total Recoverable

### Basis for Limitations Codes:

5. State or Federal Regulation/Law
6. Water Quality Standard (includes RPA)
7. Water Quality Based Effluent Limits
8. Antidegradation Review/Policy
5. Water Quality Model
6. Best Professional Judgment
7. TMDL or Permit in lieu of TMDL
8. Benchmark

### Physical:

**Flow**

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

**Precipitation**

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 storm water runoff can provide the permittee a better understanding of specific control measure that should be employed to ensure protection of water quality. The facility will provide the 24 hour accumulation value of precipitation from the day of sampling the other parameters. It is not necessary to report all days of precipitation during the month because of the readily available on-line data.
CONVENTIONAL:

**Chemical Oxygen Demand (COD)**
Monitoring is included using the permit writer’s best professional judgment. There is no water quality standard for COD; however, increased oxygen demand may impact instream water quality. COD is also a valuable indicator parameter. COD monitoring allows the permittee to identify increases in COD that may indicate materials/chemicals coming into contact with stormwater that cause an increase in oxygen demand. Increases in COD may indicate a need for maintenance or improvement of BMPs. Additionally, a benchmark value will be implemented for this parameter. The benchmark value will be set at 90 mg/L. This value falls within the range of values implemented in other permits that have similar industrial activities.

**Oil & Grease**
Monitoring, with a daily maximum benchmark of 10 mg/L. This is a technology based benchmark that is believed to be achievable at this site based on DMR data. It is in the professional judgment of the permit writer to require monitoring of this pollutant with a benchmark that represents a technology based standard found to be achievable in other industrial permits.

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

**Settleable Solids (SS)**
Monitoring is included using the permit writer’s best professional judgment. There is no 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 that may indicate uncontrolled materials leaving the site. Similar facilities have permit limits of 1.5 mL/L/hour daily maximum and 1.0 mL/L/hour monthly average that are typical and achievable. Additionally, a benchmark value will be implemented for this parameter. The benchmark value will be set at 1.5 mL/L/hour. This value falls within the range of values implemented in other permits that have similar industrial activities.

**Total Organic Carbon (TOC)**
Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

**NUTRIENTS:**

- **Total Ammonia Nitrogen**
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**ORGANIC CHEMICALS:**

- **Bis (2-chloroethyl) ether**
  Monitoring only. The water quality standards criteria, human health protection (HHP), for this parameter is 1.4 ug/L. This chronic criterion is based on the assumption of an average amount of fish consumption on a long-term basis. The discharge monitoring data collected from January 2012 to March 2017 (present) were assessed and this pollutant has a no reasonable potential to exceed water quality standards in the receiving streams after mixing.

- **1,2 Dichloroethane**
  Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.

- **1,4 Diethylene Dioxide**
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- **Organic Active Ingredients**
  Monitoring only. Discharge monitoring data collected during previous state operating permit have been reassessed and verified that they are still protective of the receiving stream’s Water Quality. Therefore, monitoring only has been retained from previous state operating permit.
Sampling and Reporting Requirements:

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

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

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

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

- The permittee/facility is not currently using the eDMR data reporting system. The permittee shall submit an eDMR Permit Holder and Certifier Registration form within 90 days of the effective date of 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. 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.

WET Testing schedules and intervals are established in accordance with the Department’s Permit Manual; Section 5.2 Effluent Limits/WET Testing for Compliance Bio-monitoring. When I&I is an issue, it is recommended that WET testing be conducted during the period of lowest stream flow.

**Outlet #002**

**Acute Whole Effluent Toxicity**

- No less than **Once/Year:**
  - Facility is designated as a Major facility or has a design flow $\geq 1.0$ MGD.
  - Facility incorporates pretreatment program and dilution of the receiving stream is 100x or greater.
  - Facility continuously or routinely exceeds their design flow.
  - Facility exceeds its design population equivalent (PE) for BOD$_5$ whether or not its design flow is being exceeded.
  - Facility has Water Quality-based effluent limitations for toxic substances (other than NH$_3$).

**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, total phosphorus, WET test samples, and volatile organic samples.

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

**Administrative Requirements**

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

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

✔ This permit is not being synchronized at this time because it would result in a permit term of less than one year.

**PUBLIC NOTICE:**
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. [http://dnr.mo.gov/env/wpp/permits/pn/index.html](http://dnr.mo.gov/env/wpp/permits/pn/index.html) Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

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

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

✔ - The Public Notice period for this operating permit was from September 15 to October 16, 2017. No responses were received.

**DATE OF FACT SHEET:**

**COMPLETED BY:** 7/19/2017  
**TODD BLANC, ENVIRONMENTAL SCIENTIST**  
**WASTEWATER ENGINEERING UNIT**  
**ENGINEERING SECTION**  
**WATER PROTECTION PROGRAM**  
(314) 416-2960  
**TODD.BLANC@DNR.MO.GOV**
Appendix A. Buckman Laboratory, MO0101184, NPDES Permit Sampling for Bis(2-chloroethyl) ether (DCEE) Discharge Concentrations (µg/L) from Outfall 002, and corresponding instream sampling for Bis(2-chloroethyl) ether at downstream sites, SM1, SM2.

X-axis = Reporting from 1/31/12 to 3/31/17. Y axis = Bis(2-chloroethyl) ether Concentrations (µg/L)

DCEE MO Water Quality Standards = 1.4 µg/L
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.

   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.
Section C – Bypass/Upset Requirements

1. Definitions.
   b. Severe Property Damage: substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
   c. Upset: an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. Bypass Requirements.
   a. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 2 b. and 2. c. of this section.

   b. Notice. i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
   ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).

3. Anticipated Noncompliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The notice shall be submitted to the Department 60 days prior to such changes or activity.

4. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date. The report shall provide an explanation for the instance of noncompliance and a proposed schedule or anticipated date, for achieving compliance with the compliance schedule requirement.

5. Other Noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs 2, 3, and 6 of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 2. a. of this section.

6. Other Information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

7. Discharge Monitoring Reports.
   a. Monitoring results shall be reported at the intervals specified in the permit.
   b. Monitoring results must be reported to the Department via the current method approved by the Department, unless the permittee has been granted a waiver from using the method. If the permittee has been granted a waiver, the permittee must use forms provided by the Department.
   c. Monitoring results shall be reported to the Department no later than the 28th day of the month following the end of the reporting period.

Section C – Bypass/Upset Requirements

1. Definitions.
   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.
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   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).

3. 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 permittee facility was at the time being properly operated; and
   iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
   iv. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.
   c. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

1. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or limitations 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 limitations 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 sections 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
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 permittee 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 associated 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 fact;
      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 Act 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 ye been modified to incorporate the requirement.

9. Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege.
10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

11. **Inspection and Entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), upon presentation of credentials and other documents as may be required by law, to:
   a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
   d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Federal Clean Water Act or Missouri Clean Water Law, any substances or parameters at any location.

12. **Closure of Treatment Facilities.**
   a. Persons who cease operation or plan to cease operation of waste, wastewater, and sludge handling and treatment facilities shall close the facilities in accordance with a closure plan approved by the Department.
   b. Operating Permits under 10 CSR 20-6.010 or under 10 CSR 20-6.015 are required until all waste, wastewater, and sludges have been disposed of in accordance with the closure plan approved by the Department and any disturbed areas have been properly stabilized. Disturbed areas will be considered stabilized when perennial vegetation, pavement, or structures using permanent materials cover all areas that have been disturbed. Vegetative cover, if used, shall be at least 70% plant density over 100% of the disturbed area.

13. **Signatory Requirement.**
   a. All permit applications, reports required by the permit, or information requested by the Department shall be signed and certified. (See 40 CFR 122.22 and 10 CSR 20-6.010)
   b. The Federal Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
   c. The Missouri Clean Water Law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan, or other document filed or required to be maintained pursuant to sections 644.006 to 644.141 shall, upon conviction, be punished by a fine of not more than ten thousand dollars, or by imprisonment for not more than six months, or by both.

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.
1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.

2. These PART III Standard Conditions apply only to sludge and biosolids generated at domestic wastewater treatment facilities, including public owned treatment works (POTW), privately owned facilities and sludge or biosolids generated at industrial facilities.

3. Sludge and Biosolids Use and Disposal Practices:
   a. The permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
   b. The permittee shall not exceed the design sludge volume listed in the facility description and shall not use sludge disposal methods that are not listed in the facility description, without prior approval of the permitting authority.
   c. The permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.

4. Sludge Received from other Facilities:
   a. Permittees may accept domestic wastewater sludge from other facilities including septic tank pumpings from residential sources as long as the design sludge volume is not exceeded and the treatment facility performance is not impaired.
   b. The permittee shall obtain a signed statement from the sludge generator or hauler that certifies the type and source of the sludge

5. These permit requirements do not supersede nor remove liability for compliance with county and other local ordinances.

6. These permit requirements do not supersede nor remove liability for compliance with other environmental regulations such as odor emissions under the Missouri Air Pollution Control Law and regulations.

7. This permit may (after due process) be modified, or alternatively revoked and reissued, to comply with any applicable sludge disposal standard or limitation issued or approved under Section 405(d) of the Clean Water Actor under Chapter 644 RSMo.

8. In addition to STANDARD CONDITIONS, the Department may include sludge limitations in the special conditions portion or other sections of a site specific permit.

9. Alternate Limits in the Site Specific Permit.
   Where deemed appropriate, the Department may require an individual site specific permit in order to authorize alternate limitations:
   a. A site specific permit must be obtained for each operating location, including application sites.
   b. To request a site specific permit, an individual permit application, permit fee, and supporting documents shall be submitted for each operating location. This shall include a detailed sludge/biosolids management plan or engineering report.

10. Exceptions to these Standard Conditions may be authorized on a case-by-case basis by the Department, as follows:
   a. The Department will prepare a permit modification and follow permit notice provisions as applicable under 10 CSR 20-6.020, 40 CFR 124.10, and 40 CFR 501.15(a)(2)(ix)(E). This includes notification of the owner of the property located adjacent to each land application site, where appropriate.
   b. Exceptions cannot be granted where prohibited by the federal sludge regulations under 40 CFR 503.
SECTION B – DEFINITIONS

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

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

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

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

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.
2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee’s land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.
3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.
4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
   a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
   b. This permit authorizes “Class A or B” biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.
5. Public Contact Sites:
   Permittees who wish to apply Class A biosolids to public contact sites must obtain approval from the Department after two years of proper operation with acceptable testing documentation that shows the biosolids meet Class A criteria. A shorter length of testing will be allowed with prior approval from the Department. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site specific permit.
   a. After Class B biosolids have been land applied, public access must be restricted for 12 months.
   b. Class B biosolids are only land applied to root crops, home gardens or vegetable crops whose edible parts will not be for human consumption.
6. Agricultural and Silvicultural Sites:
   Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri
   a. Haulers that land apply septage must obtain a state permit
   b. Do not apply more than 30,000 gallons of septage per acre per year.
   c. Septage tanks are designed to retain sewage for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
   d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
   e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.
Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

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

c. Table 1 gives the maximum concentration allowable to protect water quality standards

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Milligrams per kilogram dry weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>75</td>
</tr>
<tr>
<td>Cadmium</td>
<td>85</td>
</tr>
<tr>
<td>Copper</td>
<td>4,300</td>
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<td>Lead</td>
<td>840</td>
</tr>
<tr>
<td>Mercury</td>
<td>57</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>75</td>
</tr>
<tr>
<td>Nickel</td>
<td>420</td>
</tr>
<tr>
<td>Selenium</td>
<td>100</td>
</tr>
<tr>
<td>Zinc</td>
<td>7,500</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Milligrams per kilogram dry weight</th>
</tr>
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<tbody>
<tr>
<td>Arsenic</td>
<td>41</td>
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<tr>
<td>Cadmium</td>
<td>39</td>
</tr>
<tr>
<td>Copper</td>
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<td>Lead</td>
<td>300</td>
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<tr>
<td>Mercury</td>
<td>17</td>
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<tr>
<td>Nickel</td>
<td>420</td>
</tr>
<tr>
<td>Selenium</td>
<td>36</td>
</tr>
<tr>
<td>Zinc</td>
<td>2,800</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CEC 15+</th>
<th>CEC 5 to 15</th>
<th>CEC 0 to 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual</td>
<td>Total 1</td>
<td>Annual</td>
</tr>
<tr>
<td>Arsenic</td>
<td>1.8</td>
<td>36.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Cadmium</td>
<td>1.7</td>
<td>35.0</td>
<td>0.9</td>
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<tr>
<td>Copper</td>
<td>66.0</td>
<td>1,335.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Lead</td>
<td>13.0</td>
<td>267.0</td>
<td>13.0</td>
</tr>
<tr>
<td>Mercury</td>
<td>0.7</td>
<td>15.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Nickel</td>
<td>19.0</td>
<td>347.0</td>
<td>19.0</td>
</tr>
<tr>
<td>Selenium</td>
<td>4.5</td>
<td>89.0</td>
<td>4.5</td>
</tr>
<tr>
<td>Zinc</td>
<td>124.0</td>
<td>2,492.0</td>
<td>50.0</td>
</tr>
</tbody>
</table>

1 Total cumulative loading limits for soils with equal or greater than 6.0 pH (salt based test) or 6.5 pH (water based test)
**Table 4 - Guidelines for land application of other trace substances**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Cumulative Loading (Pounds per acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>4,000</td>
</tr>
<tr>
<td>Beryllium</td>
<td>100</td>
</tr>
<tr>
<td>Cobalt</td>
<td>50</td>
</tr>
<tr>
<td>Fluoride</td>
<td>800</td>
</tr>
<tr>
<td>Manganese</td>
<td>500</td>
</tr>
<tr>
<td>Silver</td>
<td>200</td>
</tr>
<tr>
<td>Tin</td>
<td>1,000</td>
</tr>
<tr>
<td>Dioxin</td>
<td>(10 ppt in soil)</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
</table>

2. This applies for a soil with a pH between 6.0 and 7.0 (salt based test) or a pH between 6.5 to 7.5 (water based test). Case-by-case review is required for higher pH soils.
4. Case by case review. Concentrations in sludge should not exceed the 95th percentile of the National Sewage Sludge Survey, EPA, January 2009.

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

a. Use best management practices when applying biosolids.

b. Biosolids cannot discharge from the land application site.

c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.

d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.

e. Do not apply more than the agronomic rate of nitrogen needed.

f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.

i. PAN can be determined as follows and is in accordance with WQ426

\[(\text{Nitrate + nitrite nitrogen}) + (\text{organic nitrogen x 0.2}) + (\text{ammonia nitrogen x volatilization factor})\]

1 Volatilization factor is 0.7 for surface application and 1 for subsurface application.

g. Buffer zones are as follows:

i. 300 feet of a water supply well, sinkhole, lake, pond, water supply reservoir or water supply intake in a stream;

ii. 300 feet of a losing stream, no discharge stream, stream stretches designated for whole body contact recreation, wild and scenic rivers, Ozark National Scenic Riverways or outstanding state resource waters as listed in the Water Quality Standards, 10 CSR 20-7.031;

iii. 150 feet if dwellings;

iv. 100 feet of wetlands or permanent flowing streams;

v. 50 feet of a property line or other waters of the state, including intermittent flowing streams.

h. Slope limitation for application sites are as follows:

i. A slope 0 to 6 percent has no rate limitation

ii. Applied to a slope 7 to 12 percent, the applicator may apply biosolids when soil conservation practices are used to meet the minimum erosion levels

iii. Slopes > 12 percent, apply biosolids only when grass is vegetated and maintained with at least 80 percent ground cover at a rate of two dry tons per acre per year or less.

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

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

k. Biosolids / sludge applicators must keep detailed records up to five years.
SECTION H – CLOSURE REQUIREMENTS

1. This section applies to all wastewater facilities (mechanical, industrial, and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.

2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6.010 and 10 CSR 20 – 6.015.

3. Residuals that are left in place during closure of a lagoon or earthen structure or ash pond shall not exceed the agricultural loading rates as follows:
   a. Residuals shall meet the monitoring and land application limits for agricultural rates as referenced in Section H of these standard conditions.
   b. If a wastewater treatment lagoon has been in operation for 15 years or more without sludge removal, the sludge in the lagoon qualifies as a Class B biosolids with respect to pathogens due to anaerobic digestion, and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B biosolids limitations. In order to reach Class B biosolids requirements, fecal coliform must be less than 2,000,000 colony forming units or 2,000,000 most probable number. All fecal samples must be presented as geometric mean per gram.
   c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. For a grass cover crop, the allowable PAN is 300 pounds/acre.
      i. PAN can be determined as follows:
         \[
         \text{PAN} = \text{Nitrate} + \text{Ammonia nitrogen x 0.2} + (\text{organic nitrogen x 0.2}) + (\text{ammonia nitrogen x volatilization factor})
         \]
         \[
         \text{Volatilization factor is 0.7 for surface application and 1 for subsurface application.}
         \]

4. When closing a domestic wastewater treatment lagoon with a design treatment capacity equal or less than 150 persons, the residuals are considered “septage” under the similar treatment works definition. See Section B of these standard conditions. Under the septage category, residuals may be left in place as follows:
   a. Testing for metals or fecal coliform is not required
   b. If the wastewater treatment lagoon has been in use for less than 15 years, mix lime with the sludge at a rate of 50 pounds of hydrated lime per 1000 gallons (134 cubic feet) of sludge.
   c. The amount of sludge that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. 100 dry tons/acre of sludge may be left in the basin without testing for nitrogen. If 100 dry tons/acre or more will be left in the lagoon, test for nitrogen and determine the PAN using the calculation above.
      Allowable PAN loading is 300 pounds/acre.

5. Residuals left within the domestic lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berm shall be demolished, and the site shall be graded and contain ≥70% vegetative density over 100% of the site so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.

6. Lagoons and/or earthen structure and/or ash pond closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed one acre in accordance with 10 CSR 20-6.200

7. When closing a mechanical wastewater and/or industrial process wastewater plant; all sludge must be cleaned out and disposed of in accordance with the Department approved closure plan before the permit for the facility can be terminated.
   a. Land must be stabilized which includes any grading, alternate use or fate upon approval by the Department, remediation, or other work that exposes sediment to stormwater per 10 CSR 20-6.200. The site shall be graded and contain ≥70% vegetative density over 100% of the site, so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
   b. Per 10 CSR 20-6.015(4)(B)6, Hazardous Waste shall not be land applied or disposed during industrial and mechanical plant closures unless in accordance with Missouri Hazardous Waste Management Law and Regulations under 10 CSR 25.
   c. After demolition of the mechanical plant / industrial plant, the site must only contain clean fill defined in RSMo 260.200 (5) as uncontaminated soil, rock, sand, gravel, concrete, asphaltic concrete, cinderblocks, brick, minimal amounts of wood and metal, and inert solids as approved by rule or policy of the Department for fill or other beneficial use. Other solid wastes must be removed.

8. If sludge from the domestic lagoon or mechanical treatment plant exceeds agricultural rates under Section G and/or H, a landfill permit or solid waste disposal permit must be obtained if the permittee chooses to seek authorization for on-site sludge disposal under the Missouri Solid Waste Management Law and regulations per 10 CSR 80, and the permittee must comply with the surface disposal requirements under 40 CFR 503, Subpart C.
SECTION I – MONITORING FREQUENCY

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

<table>
<thead>
<tr>
<th>Design Sludge Production (dry tons per year)</th>
<th>Monitoring Frequency (See Notes 1, 2, and 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metals, Pathogens and Vectors Nitrogen TKN 1</td>
</tr>
<tr>
<td>0 to 100</td>
<td>1 per year</td>
</tr>
<tr>
<td>101 to 200</td>
<td>biannual</td>
</tr>
<tr>
<td>201 to 1,000</td>
<td>quarterly</td>
</tr>
<tr>
<td>1,001 to 10,000</td>
<td>1 per month</td>
</tr>
<tr>
<td>10,001 +</td>
<td>1 per week</td>
</tr>
</tbody>
</table>

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

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

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

2. If you own a wastewater treatment lagoon or sludge lagoon that is cleaned out once a year or less, you may choose to sample only when the sludge is removed or the lagoon is closed. Test one composite sample for each 100 dry tons of sludge or biosolids removed from the lagoon during the year within the lagoon at closing. Composite sample must represent various areas at one-foot depth.

3. Additional testing may be required in the special conditions or other sections of the permit. Permittees receiving industrial wastewater may be required to conduct additional testing upon request from the Department.

4. At this time, the Department recommends monitoring requirements shall be performed in accordance with, “POTW Sludge Sampling and Analysis Guidance Document,” United States Environmental Protection Agency, August 1989, and the subsequent revisions.

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in these standard conditions and any additional items in the Special Conditions section of this permit. This shall include dates when the sludge facility is checked for proper operation, records of maintenance and repairs and other relevant information.

2. Reporting period
   a. By January 28th of each year, an annual report shall be submitted for the previous calendar year period for all mechanical wastewater treatment facilities, sludge lagoons, and sludge or biosolids disposal facilities.
   b. Permittees with wastewater treatment lagoons shall submit the above annual report only when sludge or biosolids are removed from the lagoon during the report period or when the lagoon is closed.

3. Report Forms. The annual report shall be submitted on report forms provided by the Department or equivalent forms approved by the Department.

4. Reports shall be submitted as follows:

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

   DNR regional office listed in your permit
   (see cover letter of permit)
   ATTN: Sludge Coordinator
   EPA Region VII
   Water Compliance Branch (WACM)
   Sludge Coordinator
   11201 Renner Blvd.
   Lenexa, KS 66219
5. Annual report contents. The annual report shall include the following:
   a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
   b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
   c. Gallons and % solids data used to calculate the dry ton amounts.
   d. Description of any unusual operating conditions.
   e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
      i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
      ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
   f. Contract Hauler Activities:
      If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
   g. Land Application Sites:
      i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
      ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
      iii. Report the method used for compliance with pathogen and vector attraction requirements.
      iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM A - APPLICATION FOR NONDOMESTIC PERMIT UNDER MISSOURI CLEAN WATER LAW

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

1. This application is for:
   - An operating permit for a new or unpermitted facility:
     Please indicate the original Construction Permit # ____________
   - An operating permit renewal:
     Please indicate the permit # MO-0101184 Expiration Date February 2, 2017
   - An operating permit modification:
     Please indicate the permit # MO- Modification Reason:

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

2. FACILITY
   NAME: Buckman North America - Cadet Plant
   ADDRESS (PHYSICAL): 14664 Highway 47
   CITY: Cadet
   STATE: MO
   ZIP CODE: 63630
   TELEPHONE NUMBER WITH AREA CODE: (573) 438-3722
   FAX: (573) 438-2509

3. OWNER
   NAME: Buckman Laboratories, Inc.
   EMAIL ADDRESS: salamb@buckman.com
   ADDRESS (MAILING): 14664 Highway 47
   CITY: Cadet
   STATE: MO
   ZIP CODE: 63630
   TELEPHONE NUMBER WITH AREA CODE: (573) 438-3722
   FAX: (573) 438-2509

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

4. CONTINUING AUTHORITY
   NAME: Same as 3.0
   ADDRESS (MAILING): 14664 Highway 47
   CITY: Cadet
   STATE: MO
   ZIP CODE: 63630
   TELEPHONE NUMBER WITH AREA CODE: (573) 438-8117
   FAX: (573) 438-2509

5. OPERATOR
   NAME: Scott Lamb
   CERTIFICATE NUMBER: N/A
   ADDRESS (MAILING): 14664 Highway 47
   CITY: Cadet
   STATE: MO
   ZIP CODE: 63630
   TELEPHONE NUMBER WITH AREA CODE: (573) 438-8117
   FAX: (573) 438-2509

6. FACILITY CONTACT
   NAME: Scott Lamb
   TITLE: EHS Manager
   EMAIL ADDRESS: salamb@buckman.com
   FAX: (573) 438-2509

7. ADDITIONAL FACILITY INFORMATION
   7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)
   001 1/4 1/4 Sec __ T ___ R _____ County
   UTM Coordinates Easting (X): Northing (Y): ____________
   For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)
   002 1/4 1/4 Sec __ T ___ R _____ County
   UTM Coordinates Easting (X): Northing (Y): ____________
   003 1/4 1/4 Sec __ T ___ R _____ County
   UTM Coordinates Easting (X): Northing (Y): ____________
   004 1/4 1/4 Sec __ T ___ R _____ County
   UTM Coordinates Easting (X): Northing (Y): ____________

   7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.
   001 - SIC ___________ and NAICS ___________
   002 - SIC 2899 and NAICS ___________
   003 - SIC ___________ and NAICS ___________
   004 - SIC ___________ and NAICS ___________
8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION
(Complete all forms that are applicable.)

A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility?
   YES ☐ NO ☐
   If yes, complete Form C or 2F.
   (2F is the U.S. EPA's Application for Storm Water Discharges Associate with Industrial Activity.)

B. Is application for storm water discharges only?
   YES ☐ NO ☐
   If yes, complete Form C or 2F.

C. Is your facility considered a "Primary Industry" under EPA guidelines?
   YES ☐ NO ☐
   If yes, complete Forms C or 2F and D.

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

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

F. If you are a Class IA CAFO, please disregard part D and E of this section. However, please attach any revision to your Nutrient Management Plan.

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

9. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

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

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

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

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

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

NAME

Please see attached

ADDRESS

CITY

STATE

ZIP CODE

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

NAME AND OFFICIAL TITLE (TYPE OR PRINT)

Rock Stevens

TELEPHONE NUMBER WITH AREA CODE

(573) 438-3722

DATE SIGNED

July 29, 2016

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

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

HAVE YOU INCLUDED:

☐ Appropriate Fees?
☐ Map at 1' = 2000' scale?
☐ Signature?
☐ Form C or 2F, if applicable?
☐ Form D, if applicable?
☐ Form I (Irrigation), if applicable?
☐ Form R (Sludge), if applicable?
☐ Revised Nutrient Management Plan, if applicable?
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM C – APPLICATION FOR DISCHARGE PERMIT –
MANUFACTURING, COMMERCIAL, MINING,
SILVICULTURE OPERATIONS, PROCESS AND STORMWATER

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

1.00 NAME OF FACILITY
Buckman North America - Cadet Plant

1.10 THIS FACILITY IS NOW IN OPERATION UNDER MISSOURI OPERATING PERMIT NUMBER
MO-0101184

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

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

A. FIRST 2899

B. SECOND

C. THIRD

D. FOURTH

2.10 FOR EACH OUTFALL GIVE THE LEGAL DESCRIPTION

OUTFALL NUMBER (LIST) NE 1/4 NW 1/4 SEC 34 T 38N R 3E Washington COUNTY

2.20 FOR EACH OUTFALL LIST THE NAME OF THE RECEIVING WATER

OUTFALL NUMBER (LIST) RECEIVING WATER
Outfall 002 - Plant Stormwater Discharge Mill Creek
Outfall 005 - Fire Water Pond Discharge Mill Creek
Mill Creek Monitoring Point Downstream 1 Mill Creek
Mill Creek Monitoring Point Downstream 2

2.30 BRIEFLY DESCRIBE THE NATURE OF YOUR BUSINESS
Buckman North America, Cadet Plant is a specialty chemical manufacturer in Washington County, Missouri. The facility has been manufacturing chemicals that support the wastewater treatment, agricultural and paper and pulp production industries since the late 1960's. Raw materials and manufactured products are stored in several tanks located in two production buildings and three tank farms. Additional small quantity raw materials and products are located in a separate warehouse building. All plant processing and storage is located within secondary containment. Process wastewater is recycled back into the manufacturing process via an on-site water treatment facility. The water treatment facility does not treat stormwater or process wastewater for the purpose of discharge. All precipitation that falls in the areas of chemical handling, processing and storage is collected and treated and excessive rainfall that exceeds capacity is shipped off-site for proper disposal at the Metropolitan St. Louis Sewer District under an Industrial User Permit.

RECEIVED
NOV 22, 2016
Water Protection Program
A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent and treatment units labeled to correspond to the more detailed descriptions in item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, public sewers and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

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

<table>
<thead>
<tr>
<th>1. OUTFALL NO. (LIST)</th>
<th>2. OPERATION(S) CONTRIBUTING FLOW</th>
<th>3. TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A. OPERATION (LIST)</td>
<td>B. AVERAGE FLOW (INCLUDE UNITS) (MAXIMUM FLOW)</td>
</tr>
<tr>
<td>002</td>
<td>Non-Contact Stormwater</td>
<td>0.52417 MGD</td>
</tr>
<tr>
<td>005</td>
<td>Fire Water SW Discharge</td>
<td>0.04387 MGD</td>
</tr>
</tbody>
</table>
### 3.0 INTAKE AND EFFLUENT CHARACTERISTICS

A & B. SEE INSTRUCTIONS BEFORE PROCEEDING – COMPLETE ONE TABLE FOR EACH OUTFALL – ANNOTATE THE OUTFALL NUMBER IN THE SPACE PROVIDED.

NOTE: TABLE 1 IS INCLUDED ON SEPARATE SHEETS NUMBERED FROM PAGE 6 TO PAGE 7.

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

<table>
<thead>
<tr>
<th>1. POLLUTANT</th>
<th>2. SOURCE</th>
<th>1. POLLUTANT</th>
<th>2. SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethylamine</td>
<td>On-Site Raw Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epichlorohydrin</td>
<td>On-Site Raw Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylene-Diamine</td>
<td>On-Site Raw Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>On-Site Raw Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Disulfide</td>
<td>On-Site Raw Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monomethylamine</td>
<td>On-Site Raw Material</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.10  **BIOLOGICAL TOXICITY TESTING DATA**

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on receiving water in relation to your discharge within the last three years?

☑ Yes (identify the test(s) and describe their purposes below.) ☐ No (go to 3.20)

Annual Permit-Required Whole Effluent Toxicity Test. Results indicate 100% survival of both species.

3.20  **CONTRACT ANALYSIS INFORMATION**

Were any of the analyses reported performed by a contract laboratory or consulting firm?

☑ Yes (list the name, address and telephone number of and pollutants analyzed by each such laboratory or firm below.) ☐ No (go to 3.30)

<table>
<thead>
<tr>
<th>A. NAME</th>
<th>B. ADDRESS</th>
<th>C. TELEPHONE (area code and number)</th>
<th>D. POLLUTANTS ANALYZED (list)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pace Analytical Laboratories</td>
<td>9508 Loiret Blvd. Lenexa, KS 66219</td>
<td>913-599-5665</td>
<td>1,2-Dichloroethylene</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,4-Diethylene Dioxide</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chemical Oxygen Demand</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ammonia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Phosphorus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Settleable Solids</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total Organic Carbon</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dichloroethylether</td>
</tr>
<tr>
<td>WayPoint Analytical</td>
<td>2790 Whitten Road Memphis, TN 38133</td>
<td>800-264-4522</td>
<td>Organic Active Ingredients</td>
</tr>
</tbody>
</table>

3.30  **CERTIFICATION**

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

<table>
<thead>
<tr>
<th>NAME AND OFFICIAL TITLE (TYPE OR PRINT)</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock Stevens</td>
<td>(573) 438-3722</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE (SEE INSTRUCTIONS)</th>
<th>DATE SIGNED</th>
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<td>07/29/2016</td>
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Attachment A
Buckman North America – Cadet Plant
Permit # MO-0101184

Outfall 005 – Fire Water Pond Stormwater Outfall

Outfall 002 – Main Facility Stormwater Outfall
Buckman North America – Cadet Plant

Permit # MO-0101184
Buckman North America – Cadet Plant
Permit # MO-0101184
Attachment B
Application for Operating Permit Attachment

Additional Facility Information

During the permit time period, treatment, storage or disposal of significant materials allowing exposure to stormwater has not occurred. Plant processing, manufacturing and storage all occur within secondary containment. Plant procedures and material handling methods minimize/eliminate significant potential for chemical exposure to stormwater. The Cadet Plant maintains a Stormwater Pollution Prevention Plan to ensure proper material management, monitoring and response practices.

Outfall Information

Outfall #002  N37° 58' 42", W90° 41' 21"

The areas immediately surrounding the manufacturing plant site drain through two drainage grates into a common conduit that empties into a ditch. This ditch runs for approximately ¼ of a mile on Buckman property before it empties into Mill Creek, a Class P stream. The entire drainage path from the Cadet Plant to Mill Creek is located on Buckman property.

The stormwater discharge from Outfall #002 consists of precipitation that is collected from the areas immediately surrounding the Boiler House, the Maintenance Shop and the areas to the south of the Rail Spot, Plant #2, Tank Farm #1 and Tank Farm #2. These areas consist of industrial plant yard, immediate access roads and buildings. The industrial plant yard and immediate access roads are paved with asphalt. The only discharge from Plant #2, Tank Farm #2, the Boiler House and the Maintenance Shop areas is the precipitation that falls upon the roofs of these buildings and that is subsequently discharged through various gutters and downspouts.

There is no discharge to Outfall #002 from the inside of the Boiler House, the Maintenance Shop, Plant #2, Plant #3, Tank Farm #1, Tank Farm #2, Tank Farm #3 or the Rail Spot. In addition there is no chemical storage or processing that occurs in this area.

Outfall #005  N37° 59' 5", W90° 41' 23"

The Cadet Plant Fire Pond is located at the northwest corner of the plant site. This structure provides approximately five million gallons of fresh water/stormwater runoff in the event of a fire emergency at the Cadet Plant. The fire pond was constructed in 1988. The structure of the fire pond consists of a clay compaction layer of approximately two feet at a 4 to 1 slope value. A concrete building is located on the south side of the fire
pond to house two large diesel engine driven pumps that supply water to several potential extinguishing points throughout the manufacturing and storage areas of the plant.

The fire pond overflows into a discrete ditch and then leaves Buckman property and empties into a discrete ditch. This ditch runs for about 50 feet before draining into conduit that passes underneath Union Pacific railroad and empties into an unclassified portion of Cadet Creek. The stormwater discharge from Outfall #005 consists of precipitation that is collected from the areas immediately surrounding the fire pond. These areas consist of landscaped and vegetated areas. There is no chemical storage or processing that occurs in this area.

**Analytical Testing Methods for Cadet Plant Parameters**

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<tr>
<th>Parameter</th>
<th>Analytical Method</th>
<th>Detection Limit</th>
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<tr>
<td>Bis(2-Chloroethyl) ether (DCEE)</td>
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<td>1,2-Dichloroethane</td>
<td>EPA 5030B/8260</td>
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<tr>
<td>1,4-Dioxane</td>
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<td>Total Organic Carbon</td>
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