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-0121878
Owner: Burgers’ Ozark Country Cured Hams, Inc.
Address: 32819 Highway 87, California, MO 65018
Continuing Authority: Same as above
Address: Same as above
Facility Name: Burgers’ Ozark Country Cured Hams, Inc.
Address: 32819 Highway 87, California, MO 65018
Legal Description: See Pages 2 & 3
UTM Coordinates: See Pages 2 & 3
Receiving Stream: See Pages 2 & 3
First Classified Stream and ID: See Pages 2 & 3
USGS Basin & Sub-watershed No.: See Pages 2 & 3

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

**FACILITY DESCRIPTION**

See Pages 2 & 3

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

October 1, 2019
Effective Date

Edward B. Galbraith, Director, Division of Environmental Quality

September 30, 2024
Expiration Date

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

No-discharge Storage and Irrigation System for year round flows into lagoon. Dissolved Air Floatation (DAF) / DAF sludge disposal is by contract hauler.

Permitted Feature #001 – Industrial and Domestic Wastewater SIC #2013/4952
There are three pH equalization tanks for industrial wastewater and a septic tank for domestic wastewater, all of which flow to a two cell aerated lagoon and is land applied. Sludge is retained in lagoon.

Legal Description: SW ¼, NE, ¼, Sec. 9, T44N, R15W, Moniteau County
UTM Coordinates: X = 537841, Y = 4271050
Receiving Stream: Tributary to Tributary to North Moreau Creek
First Classified Stream and ID: Tributary to North Moreau Creek (C) (00950)
USGS Basin & Sub-watershed No.: (10300102-1107)

Design flow is 30,000 gallons per day. (1-in-10 year design including net rainfall minus evaporation.)
Actual flow is 18,500 gallons per day.
Design sludge production is 228 dry tons/year.
Design Storage for Dry weather flows: 182 days
Design Storage with 1-in 10 year flows: 155 days
Upper operating level (ft. below spillway) 1
1-in-10 year Annual Storm water flows into lagoon (R-E): 161,602 cu. ft. (1,208,944 gal)

Land Application:
Irrigation Volume /year: 10,568,944 gallons (including 1-in-10 year flows)
Irrigation areas: 36 acres at design loading (219 acres total available)
Application rates/acre: 0.5 inch/hour; 1.5 inch/day; 4.5 inches/week; 11.0 inches/year
Field slopes: less than 20 percent
Equipment type: traveling gun
Vegetation: grass land
Application rate is based on: hydraulic loading rate

Permitted Feature #002 – Stormwater Runoff from Land Application Tract T931 Fields 9 & 23
Legal Description: NW ¼, NE ¼, Sec. 9, T44N, R15W, Moniteau County
UTM Coordinates: X = 537419, Y = 4271281
Receiving Stream: Tributary to Tributary to North Moreau Creek
First Classified Stream and ID: Tributary to North Moreau Creek (C) (00950)
USGS Basin & Sub-watershed No.: (10300102-1107)

Permitted Feature #003 – Stormwater Runoff from Land Application Tract T931 Fields 9 & 23
Legal Description: SW ¼, NW ¼, Sec. 10, T44N, R15W, Moniteau County
UTM Coordinates: X = 538053, Y = 4270865
Receiving Stream: Tributary to Tributary to North Moreau Creek
First Classified Stream and ID: Tributary to North Moreau Creek (C) (00950)
USGS Basin & Sub-watershed No.: (10300102-1107)

Permitted Feature #004 – Stormwater Runoff from Land Application Tract T931 Fields 9 & 23, 103 acres
Legal Description: SW ¼, NW ¼, Sec. 10, T44N, R15W, Moniteau County
UTM Coordinates: X = 538126, Y = 4270677
Receiving Stream: Tributary to North Moreau Creek (C)
First Classified Stream and ID: Tributary to North Moreau Creek (C) (00950)
USGS Basin & Sub-watershed No.: (10300102-200004)

Permitted Feature #005 – Stormwater Runoff from Land Application Tract T931 Fields 2 & 3, 22 acres
Legal Description: NE ¼, NE ¼, Sec. 9, T44N, R15W, Moniteau County
UTM Coordinates: X = 537794, Y = 4271143
Receiving Stream: Tributary to Tributary to North Moreau Creek
First Classified Stream and ID: Tributary to North Moreau Creek (C) (0950)
USGS Basin & Sub-watershed No.: (10300102-1107)
Permitted Feature #006 – Stormwater Runoff from Land Application Tract T931 Fields 4 & 5, 21 acres
Legal Description: NE ¼, NE ¼, Sec. 9, T44N, R15W, Moniteau County
UTM Coordinates: X = 538911, Y = 4271121
Receiving Stream: Tributary to North Moreau Creek (C)
First Classified Stream and ID: Tributary to North Moreau Creek (C) (00950)
USGS Basin & Sub-watershed No.: (10300102-1107)

Permitted Feature #007 – Stormwater Runoff from Land Application Tract T931 Fields 6 & 7, 28 acres
Legal Description: SW ¼, NW ¼, Sec. 10, T44N, R15W, Moniteau County
UTM Coordinates: X = 538126, Y = 4270767
Receiving Stream: Tributary to North Moreau Creek (C)
First Classified Stream and ID: Tributary to North Moreau Creek (C) (0950)
USGS Basin & Sub-watershed No.: (10300102-200004)

Permitted Feature #008 – Stormwater Runoff from Land Application Tract T931 Field 8, 17 acres
Legal Description: NW ¼, NW ¼, Sec. 10, T44N, R15W, Moniteau County
UTM Coordinates: X = 538202, Y = 4271227
Receiving Stream: Tributary to Tributary to North Moreau Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (10300102-1107)

Permitted Feature #009 – Stormwater Runoff from Land Application Tract T928 Field 1, 28 acres
Legal Description: SE ¼, SW ¼, Sec. 3, T44N, R15W, Moniteau County
UTM Coordinates: X = 538583, Y = 4271491
Receiving Stream: Tributary to North Moreau Creek
First Classified Stream and ID: North Moreau Creek (P) (0942)
USGS Basin & Sub-watershed No.: (10300102-1107)
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

### TABLE A-1

<table>
<thead>
<tr>
<th>STORAGE BASIN LIMITATIONS AND MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permitted Feature #001</td>
</tr>
</tbody>
</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 upon issuance 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>FINAL EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DAILY MAXIMUM</td>
<td>MONTHLY AVERAGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Limit Set: OM**

<table>
<thead>
<tr>
<th>STORAGE BASINS MONITORING</th>
<th>FEET</th>
<th>INCHES</th>
<th>TOW/PA/MON</th>
<th>DAILY MAXIMUM</th>
<th>MONTHLY AVERAGE</th>
<th>MEASUREMENT FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeboard Φ</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td>twice/month</td>
<td>measured</td>
</tr>
<tr>
<td>Precipitation</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td>daily</td>
<td></td>
</tr>
</tbody>
</table>

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

**THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

**Limit Set: IW**

<table>
<thead>
<tr>
<th>LAND APPLIED WASTEWATER (Υ, Ψ)</th>
<th>mg/L</th>
<th>*</th>
<th>once/quarter</th>
<th>grab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloride</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia Nitrogen as N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrate Nitrogen as N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Kjeldahl Nitrogen as N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus as P</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium, Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JANUARY 28, 2020.**

**THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

### TABLE A-2

<table>
<thead>
<tr>
<th>FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permitted Feature #002 - #009 Stormwater Only</td>
</tr>
</tbody>
</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 **October 1, 2019** and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

<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>DAILY MAXIMUM</td>
<td>MONTHLY AVERAGE</td>
<td>MEASUREMENT FREQUENCY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LIMIT SET: M**

<table>
<thead>
<tr>
<th>NUTRIENTS</th>
<th>mg/L</th>
<th>*</th>
<th>once/month</th>
<th>grab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia as N</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitrate plus Nitrite Nitrogen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphorus, Total (TP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OTHER**

<table>
<thead>
<tr>
<th>Chloride</th>
<th>mg/L</th>
<th>377</th>
<th>once/month</th>
<th>grab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium</td>
<td>mg/L</td>
<td>*</td>
<td>once/month</td>
<td>grab</td>
</tr>
</tbody>
</table>

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

**THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**
PERMITTED FEATURE #004 - #009

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (CONTINUED)

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

### TABLE A-3

**LAND APPLICATION FIELD LIMITATIONS AND MONITORING REQUIREMENTS**

<table>
<thead>
<tr>
<th>Limit Set: LA</th>
<th>WASTEWATER APPLICATION ⌂</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Area</td>
<td>Acres ⌂</td>
</tr>
<tr>
<td>Application Rate</td>
<td>Inches/Acre ⌂</td>
</tr>
<tr>
<td>Irrigation Period</td>
<td>Hours ⌂</td>
</tr>
<tr>
<td>Volume Irrigated</td>
<td>Gallons ⌂</td>
</tr>
</tbody>
</table>

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

### TABLE A-4

**FINAL MONITORING REQUIREMENTS**

<table>
<thead>
<tr>
<th>Limit Set: SO</th>
<th>SOIL MONITORING ▼</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (salt) ⌂</td>
<td>SU ⌂</td>
</tr>
<tr>
<td>Cation Exchange Capacity</td>
<td>mEq/100g ⌂</td>
</tr>
<tr>
<td>Chloride</td>
<td>ppm ⌂</td>
</tr>
<tr>
<td>Phosphorus, Bray P1 method</td>
<td>ppm ⌂</td>
</tr>
<tr>
<td>Sodium Absorption Rate</td>
<td>% ⌂</td>
</tr>
<tr>
<td>Total Sodium</td>
<td>ppm ⌂</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED ONCE PER PERMIT CYCLE; THE FIRST REPORT IS DUE JANUARY 28, 2024. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

### PERMITTED FEATURE #001

**Emergency Discharge**

The permittee is authorized to discharge from these specified features, but only when a wet weather event causes an overflow of and the lagoons have been properly designed, constructed, operated and maintained. Such discharges shall be controlled, limited, and monitored by the permittee as specified below:

### TABLE A-5

**FINAL MONITORING REQUIREMENTS**

<table>
<thead>
<tr>
<th>Limit Set: U</th>
<th>PHYSICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>MGD ⌂</td>
</tr>
<tr>
<td>Biological Oxygen Demand, 5 Day</td>
<td>mg/L ⌂</td>
</tr>
<tr>
<td>pH †</td>
<td>SU ⌂</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L ⌂</td>
</tr>
<tr>
<td>E. coli</td>
<td>#/100mL ⌂</td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L ⌂</td>
</tr>
<tr>
<td>NUTRIENTS</td>
<td>Ammonia as N</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED BY THE 28TH DAY OF THE MONTH FOLLOWING DISCHARGE CESSATION.**

- Monitoring requirement only
- Storage Basin freeboard shall be reported as Storage Basin water level in feet below the overflow level.
- Report as “No Discharge” when land application does not occur during the report period.
Wastewater that is land applied shall be sampled at the irrigation pump, wet well, or application equipment prior to land application.

Reporting is only required for permitted features where land application occurred during the month. If no land application occurs at a permitted feature, no reporting is required. These are unscheduled parameters.

Sample the upper 6 to 8 inches of soil. Composite samples shall be collected from each permitted land application site. See Section E. Land Application System Condition #3(j) Soil Monitoring for additional guidance.

Soil pH shall be maintained in a range that is optimal for plant growth.

Some soils test results may be in lbs./acre. To convert to ppm multiply lbs./acre by 0.5 to get ppm.

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

See table below for quarterly sampling

<table>
<thead>
<tr>
<th>QUARTER</th>
<th>MONTHS</th>
<th>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 standard conditions dated August 1, 2014 and hereby incorporated as though fully set forth herein.

C. SPECIAL CONDITIONS

1. This permit does not authorize the discharge of wastewater or sludge, except during emergency discharge conditions. Other materials, chemicals and substances not considered wastewater or sludge being treated and disposed of by the land application system are not authorized to be discharged regardless of weather conditions.

2. Unauthorized Discharges.

(a) Monitoring. Any emergency or unauthorized discharge shall be monitored for the parameters in the table below at least once during the discharge event. Additional monitoring may be required by the Department on a case-by-case basis. The facility shall submit test results, along with the number of days the storage basin(s) has discharged during the month, to the via the Electronic Discharge Monitoring Report (eDMR) Submission System by the 28th day of the month after the discharge ceases. Permittee shall monitor for the following constituents:

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effluent Flow</td>
<td>MGD</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand5</td>
<td>mg/L</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
</tr>
<tr>
<td>Ammonia as N</td>
<td>mg/L</td>
</tr>
<tr>
<td>pH – Units</td>
<td>SU</td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L</td>
</tr>
<tr>
<td>E. coli*</td>
<td>#/100mL</td>
</tr>
</tbody>
</table>

*Sampling for E. coli is only required during the recreational months of April – October.

(b) Unauthorized Discharges. Any unauthorized discharge shall constitute a permit violation and shall be reported in accordance with Standard Conditions Part I Section B.2. Unauthorized discharges are to be reported to the Central Field Operations during normal business hours or the Environmental Emergency Response spill-line at 573-634-2436 outside of normal business hours within 24 hours of becoming aware of the discharge.
C. SPECIAL CONDITIONS (CONTINUED)

   Once the permittee is activated in the eDMR 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) Programmatic Reporting Requirements. The following reports (if required by this permit) must be electronically submitted as an attachment to the eDMR system until such a time when the current or a new system is available to allow direct input of the data:
      (1) Collection System Maintenance Annual Reports;
      (2) Wastewater Irrigation Annual Reports;
      (3) Any additional report required by the permit excluding bypass reporting.
   After such a system has been made available by the department, required data shall be directly input into the system by the next report due date.
   (c) Other actions. The following shall be submitted electronically after such a system has been made available by the department:
      (1) General Permit Applications/Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs);
      (3) No Exposure Certifications (NOEs);
      (4) Low Erosivity Waivers and Other Waivers from Stormwater Controls (LEWs); and
      (5) Bypass reporting, See Special Condition #2 for 24-hr. bypass reporting requirements.
   (d) 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.
   (e) 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.

4. 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).

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

6. Hazardous waste regulated under the Missouri Hazardous Waste Law and regulations shall not be land applied under this permit.

7. 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 permit and made available to the department upon request.

8. 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)

9. The facility’s SIC code(s) or description is found in 40 CFR 122.26(b)(14) and/or 10 CSR 20-6.200(2) hence shall implement a SWPPP which must be prepared and implemented within ninety (90) days of 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 years or as site conditions change (see Part III: Antidegradation Analysis and SWPPP sections in the fact sheet). The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in: Developing Your Stormwater Pollution Prevention Plan, A Guide for Industrial Operators, (EPA 833-B-09-002) published by the EPA in February 2009 (www.epa.gov/npdes/pubs/industrial_swppp_guide.pdf). The SWPPP must include:

(a) A listing of specific contaminants and their control measures (or BMPs) and a narrative explaining how BMPs are implemented to control and minimize the amount of contaminants potentially entering stormwater.

(b) The SWPPP must include a schedule for once per month site inspections and brief written reports. The inspection report must include precipitation information for the entire period since last inspection, as well as observations and evaluations of BMP effectiveness. Throughout coverage under this permit, the facility must perform ongoing SWPPP review and revision to incorporate any site condition changes.

(1) Operational deficiencies must be corrected within seven (7) calendar days.

(2) Minor structural deficiencies must be corrected within fourteen (14) calendar days.

(3) Major structural deficiencies 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.

(4) All actions taken to correct the deficiencies shall be included with the written report, including photographs.

(5) 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.

10. The purpose of the Best Management Practices listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective in 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.

11. Site-wide minimum Best Management Practices (BMPs). At a minimum, the permittee shall adhere to the following:

(a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.

(b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.

(c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMPs such as plastic lids and/or portable spill pans to prevent the commingling of storm water 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. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits.

(f) Prevent pesticide spills or discharges from any point source by complying 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.
C. SPECIAL CONDITIONS (CONTINUED)

12. 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).

(c) The level established by the Director in accordance with §122.44(f).

13. 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.

14. All permitted features, including emergency outfalls, must be clearly marked in the field. The permitted features and land application fields shall also be marked on the aerial or topographic site map included with the Operation and Maintenance manual.

15. The permittee shall develop, maintain and implement an Operation and Maintenance (O&M) Manual that includes all necessary items to ensure the operation and integrity of the waste handling and land application systems, including key operating procedures, an aerial or topographic site map with the permitted features, land application fields, and irrigation buffer zones marked, and a brief summary of the operation of the facility. The O & M manual shall be made available to the operator and available to the department upon request. The O&M Manual shall be reviewed and updated at least every five years.

16. An all-weather access road shall be provided to the treatment facility.

E. LAND APPLICATION CONDITIONS

1. Storage Basin.
   (a) The berms of the storage basin(s) shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.
   (b) The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the storage basin(s) and to divert stormwater runoff around the storage basin(s) and protect embankments from erosion.
   (c) The minimum and maximum operating water levels for the storage basin(s) shall be clearly marked. Each storage basin shall be operated so that the maximum water elevation does not exceed upper operating level except due to exceedances of the 1-in-10 year or 25-year, 24-hour storm events. Storage basins shall be lowered to the minimum operating level prior to November 30 each year. Storage basins shall be inspected monthly for structural integrity and leaks.
   (d) A least one gate, constructed of materials comparable to the fence, must be provided to access any storage basin and provide for maintenance and mowing. The gate shall remain locked except when opened by the permittee to perform maintenance or mowing.
   (e) At least one sign shall appear on the fence on each side of each facility. Minimum wording shall be “SEWAGE TREATMENT FACILITY – KEEP OUT”, in letters at least 2 inches high.
   (f) It is a violation of this permit to place material in the emergency spillway or otherwise cause it to cease to function properly, as this may result in a catastrophic failure of the storage basin.
2. Land Application Equipment.
   (a) Spray application equipment shall minimize the formation of aerosols.
   (b) Land application equipment shall be visually inspected daily during land application to check for equipment malfunctions and leaks. The application system shall be operated so as to provide uniform distribution of wastes over the entire land application site and shall be capable of applying the annual design flow during an application period of less than 100 days or 800 hours per year. Land application equipment shall be calibrated at least once annually.

3. Land Application Fields.
   (a) This special condition does not apply to fertilizer products that are exempted under the Missouri Clean Water Law and regulations, 10 CSR 20-6.015(3)(B)8.
   (b) If land application sites listed in this permit are also included as land application sites in another permit, the wastewater and sludge applications from other sources shall be included in the application rates in the facility description. Records of the amount and application rate of wastewater or sludge from other sources must be kept.
   (c) Public Access Restrictions. This permit does not authorize application of wastewater to public use areas.
   (d) Grazing and harvesting deferment. Grazing of animals or harvesting of forage crops should be deferred for up to 30 days following wastewater irrigation depending upon ambient air temperature and sunlight conditions. The following deferments shall be considered:
      (1) During the period from May 1 to October 30 of each year, the minimum deferment from grazing or forage harvesting shall be fourteen (14) days;
      (2) During the period from November 1 to April 30 of each year, the minimum deferment from grazing or forage harvesting shall be thirty (30) days;
      (3) Grazing of sewage irrigated land is generally not recommended for lactating dairy animals unless there has been a much longer deferment period. The recommendations of the State Milk Board shall be followed; and
      (4) Deferment may not be required for irrigation water that has been disinfected so that the water contains less than four hundred (400) fecal coliform organisms per one hundred milliliters (100 ml).
   (e) No land application shall occur when the soil is frozen, snow covered, or saturated. There shall be no application during a precipitation event or if a precipitation event that is likely to create runoff is forecasted to occur within 24 hours of a planned application.
   (f) Land application shall occur only during daylight hours.
   (g) Land application fields shall be checked daily during land application for runoff. Sites that utilize spray irrigation shall monitor for the drifting of spray across property lines.
   (h) Setback distances from sensitive features. There shall be no land application within:
      (1) 300 feet of any well, sinkhole, losing stream, wetland, or cave entrance, water supply impoundment or stream intake;
      (2) 150 feet of an occupied residence, public building, or public use area;
      (3) 50 feet of gaining perennial or intermittent stream, public or privately owned pond or lake;
      (4) 50 feet of property line or public road.
   (i) Wastewater application on slopes exceeding 10%, the hourly application rate shall not exceed one-half (1/2) the design sustained permeability and in no case shall exceed one-half (1/2) inch per hour.
   (j) Soil Monitoring.
      (1) Composite soil samples shall be collected during the next to last year of the permit from each field listed in this permit where land application has occurred in the last 12 months. No land application shall occur on fields listed in this permit if soil sample results are more the five (5) years old.
      (2) Soil sampling shall be in accordance with University of Missouri (MU) Guides G9215, Soil Sampling Pastures or G9217, Soil Sampling Hayfields and Row Crops or other methods approved by the department. The recommendation of one composite sample per 20 acres in G9215 and G9217 is not required by this permit, however, this is a useful method to identify soil fertility fluctuations in large fields due to past management practices, soil type, and variability of crop yields. There shall be at least one composite sample per 80 acres.
      (3) Testing shall conform to Recommended Chemical Soil Testing Procedures for North Central Region (North Central Regional Research Publication 221 Revised), or Soil Testing in Missouri (MU Extension Guide EC923), or other methods approved by the department.
   (k) Wastewater land applications shall not exceed agronomic rates to ensure agricultural use of nutrients and prevent contamination of surface and groundwater. The agronomic rate is the amount of wastewater applied to a field to meet the fertilizer recommendation.

4. Hydraulic Loading Rate. The application rate shall not exceed the design hydraulic loading rate listed in the facility description.
   (a) If hydraulic application rates exceed 60 inches per acre per year, the permittee shall calculate nitrogen loading rates and include results in the annual report. The calculation procedures are as follows: \( \text{Total N} = \left( \text{Total Kjeldahl Nitrogen (TKN) as N} \right) + \left( \text{Nitrate Nitrogen as N} \right) \).
E. LAND APPLICATION CONDITIONS (CONTINUED)

5. Record Keeping
   (a) A daily land application log shall be prepared and kept on file at the permittee office location for each application site showing dates of application, weather condition (sunny, overcast, raining, below freezing etc…), soil moisture condition, application method.
   (b) A record of monthly visual storage structure inspections shall be maintained.
   (c) A record of land application equipment inspections and calibrations as well as land application field inspections shall be maintained.
   (d) A record of all PAN calculations.
   (e) All records and monitoring results shall be maintained for at least five years and shall be made available to the department upon request.

6. Annual Report on Land Application. An annual report is required in addition to other reporting requirements under Section A of this permit. The annual report shall be submitted by January 28 of each year. The report shall include, but is not limited to, a summary of the following:
   (a) Record of maintenance and repairs during the year, average number of times per month the facility is checked to see if it is operating properly, and description of any unusual operating conditions encountered during the year.
   (b) The number of days the storage structure discharged during the year, the discharge flow, reason the discharge occurred and effluent analysis performed.
   (c) A summary for each field used for land application showing number of acres used number of days application occurred, crop grown and yield, and total amount of wastewater and/or sludge applied (gal. or tons/acre).
   (d) For fields where the total nitrogen application exceeds 150 lbs./acre, submit PAN calculations to document that the applied nitrogen will be utilized.
   (e) Narrative summary of any problems or deficiencies identified, corrective action taken and improvements planned.
   (f) Result of soil testing conducted during the year.
The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States, and the release of stormwater from certain point sources. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Missouri State Operating Permits (MSOPs) are issued by the Director of the Missouri Department of Natural Resources (Department) under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified for less.

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

**PART I. FACILITY INFORMATION**

- **Facility Type:** Industrial – Categorical; <1 MGD
- **SIC Code(s):** # 2012/#4952
- **Application Date:** 02/22/2019
- **Expiration Date:** 09/30/2019
- **Last Inspection:** 12/29/2017

**FACILITY DESCRIPTION:**
There are three pH equalization tanks for industrial wastewater and a septic tank for domestic wastewater, all of which flow to a two cell aerated lagoon and is land applied. Sludge is retained in lagoon.

The charter number for the continuing authority for this facility is 00090227; this number was verified by the permit writer to be associated with the facility and precisely matches the continuing authority reported by the facility.

In accordance with 40 CFR 122.21(f)(6), the facility holds no other permits.

**PERMITTED FEATURES TABLE:**

<table>
<thead>
<tr>
<th>OUTFALL</th>
<th>AVERAGE FLOW</th>
<th>DESIGN FLOW</th>
<th>TREATMENT LEVEL</th>
<th>EFFLUENT TYPE</th>
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<td>0.0295 MGD</td>
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<td>0.0 MGD</td>
<td>BMP</td>
<td>Stormwater</td>
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**FACILITY PERFORMANCE HISTORY & COMMENTS:**
The electronic discharge monitoring reports were reviewed for the last five years. There were exceedances of chloride.

**PART II. RECEIVING WATERBODY INFORMATION**

**RECEIVING WATERBODY’S WATER QUALITY:**
The receiving waterbody has no concurrent water quality data available.
303(d) List:
Section 303(d) of the federal Clean Water Act requires each state identify waters not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock, and wildlife. The 303(d) list helps state and federal agencies keep track of impaired waters not addressed by normal water pollution control programs. http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm

✓ Not applicable; this stream was listed on the 1998 Missouri 303(d) List for Suspended Algae, Carbonaceous Biological Oxygen Demand and Ammonia (NH3). It was removed from the 303(d) List when a TMDL was approved.

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

✓ Applicable; North Moreau Creek is associated with the 1999 EPA Approved TMDL for Suspended Algae, Carbonaceous Biological Oxygen Demand and Ammonia (NH3).

- This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of North Moreau Creek.

Upstream or Downstream Impairments:
The permit writer has reviewed upstream and downstream stream segments of this facility for impairments.

✓ The permit writer has noted upstream and downstream of the facility the stream has a TMDL for Suspended Algae, Carbonaceous Biological Oxygen Demand and Ammonia (NH3).

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

- Missouri or Mississippi River
- Lake or Reservoir
- Losing
- Metropolitan No-Discharge
- Special Stream
- Subsurface Water

✓ All Other Waters

Receiving Waterbody Table:

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<tr>
<th>OUTFALL</th>
<th>WATERBODY NAME</th>
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</table>

n/a not applicable

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

WBID = Waterbody Identification: Missouri Use Designation Dataset per 10 CSR 20-7.031(1)(Q) and (S) as 8-20-13 MUDD V1.0 or newer; data can be found as an ArcGIS shapefile on MSDIS at ftp://msdis.missouri.edu/pub/Inland_Water_Resources/MO_2014_WQS_Stream_Classifications_and_Use_shp.zip; New C streams described on the dataset per 10 CSR 20-7.031(2)(A)3. as 100K Extent Remaining Streams.
Per 10 CSR 20-7.031, the Department defines the Clean Water Commission’s water quality objectives in terms of “water uses to be maintained and the criteria to protect those uses.” The receiving stream and 1st classified receiving stream’s beneficial water uses are to be maintained in the receiving streams in accordance with [10 CSR 20-7.031(1)(C)]. Uses which may be found in the receiving streams table, above:

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

10 CSR 20-7.031(1)(C)2.: Recreation in and on the water
WBC = Whole Body Contact recreation where the entire body is capable of being submerged;
WBC-A = whole body contact recreation supporting swimming uses and has public access;
WBC-B = whole body contact recreation not supported in WBC-A;
SCR = Secondary Contact Recreation (like fishing, wading, and boating)

10 CSR 20-7.031(1)(C)3. to 7.:
HHP (formerly HHF) = Human Health Protection as it relates to the consumption of fish and drinking of water;
IRR = irrigation for use on crops utilized for human or livestock consumption
LWW = Livestock and Wildlife Watering (current narrative use is defined as LWP = Livestock and Wildlife Protection);
DWS = Drinking Water Supply
IND = industrial water supply

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

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

RECEIVING WATERBODY MONITORING REQUIREMENTS:
No receiving water monitoring requirements are recommended at this time.

PART III. RATIONALE AND DERIVATION OF PERMIT CONDITIONS

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

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

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

✓ The Department determined technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
• The previous permit special conditions contained a specific set of prohibitions related to general criteria (GC) 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 criteria in the previous permit. This permit assesses each general criteria as listed in the previous permit’s special conditions. Federal regulations 40 CFR 122.44(d)(1)(iii) requires instances where 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, 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)(A) through (I) 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 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 while maintaining permit conditions applicable to permittee disclosures and in accordance with 10 CSR 20-7.031(4) where no water contaminant by itself or in combination with other substances shall prevent the water of the state from meeting the following conditions:

(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 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 nothing disclosed by the permittee indicates unsightly or harmful bottom deposits would be discharged from the facility.

(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 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 indicates scum and floating debris will be present in sufficient amounts to impair beneficial uses.

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
   - For all outfalls, there is no RP for unsightly color or turbidity in sufficient amounts preventing full maintenance of beneficial uses because nothing disclosed by the permittee 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 indicates offensive odor will be present in sufficient amounts to impair beneficial uses.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.
   - The permit writer considered specific toxic pollutants when writing this permit. Numeric effluent limitations are included for those pollutants could be discharged in toxic amounts. These effluent limitations are protective of human health, animals, and aquatic life.

(E) There shall be no significant human health hazard from incidental contact with the water.
   - This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(F) There shall be no acute toxicity to livestock or wildlife watering.
   - This criterion is very similar to (D) above. See Part IV, Effluent Limits Derivation below.

(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 impairing the natural biological community because nothing disclosed by the permittee indicates this is occurring.
   - It has been established any chemical changes are covered by the specific numeric effluent limitations established in the permit.
   - For all outfalls, there is no RP for hydrologic changes impairing the natural biological community because nothing disclosed by the permittee indicates this is occurring.

(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 which has reasonable potential to cause or contribute to the materials listed above being discharged through any outfall.

**ANTIDEGRADATION REVIEW:**

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

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

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

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

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

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

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

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

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

Applicable; this permit authorized land application of domestic wastewater.

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


Sludge/biosolids are removed by contract hauler, or stored in the lagoon.

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 does not have an associated ELG.

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

Per 40 CFR 127.15 and 127.24, permitted facilities may request a temporary waiver for up to 5 years or a permanent waiver from electronic reporting from the Department. To obtain an electronic reporting waiver, a permittee must first submit an eDMR Waiver Request Form: http://dnr.mo.gov/forms/780-2692-f.pdf. A request must be made for each facility. If more than one facility is owned or operated by a single entity, then the entity must submit a separate request for each facility based on its specific circumstances. An approved waiver is not transferable.
The Department must review and notify the facility within 120 calendar days of receipt if the waiver request has been approved or rejected [40 CFR 124.27(a)]. During the Department review period as well as after a waiver is granted, the facility must continue submitting a hard-copy of any reports required by their permit. The Department will enter data submitted in hard-copy from those facilities allowed to do so and electronically submit the data to the EPA on behalf of the facility.

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

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

**GENERAL CRITERIA CONSIDERATIONS:**

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

- Applicable; this permit contains effluent limitations to protect for toxicity in accordance with 10 CSR 20-7.031(4)(D) and (G); see Part IV for specific pollutant discussion.

**GROUNDWATER MONITORING:**

Groundwater is a water of the state according to 10 CSR 20-2.010(82), and is subject to regulations at 10 CSR 20-7.015(7) and 10 CSR 20-7.031(6) and must be protected accordingly.

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

**NO-DISCHARGE LAND APPLICATION:**

Land application of wastewater or sludge shall comply with the all applicable no-discharge requirements listed in 10 CSR 20-6.015 and all facility operations and maintenance requirements listed in 10 CSR 20-8.020(15). These requirements ensure appropriate operation of the no-discharge land application systems and prevent unauthorized and illicit discharges to waters of the state. Land applications by a contract hauler on fields that the permittee has a spreading agreement on are not required to be in this permit. A spreading agreement does not constitute the field being rented or leased by the permittee as they do not have any control over management of the field.

- Applicable; This permit authorizes operation of a no-discharge land application system to treat wastewater or sludge.

**LAND APPLICATION RATES:**

In accordance with 10 CSR 20-8.020(15), wastewater and sludge must be land applied at either hydraulic loading rates, nitrogen loading rates, or trace elements loading rates.

Conversion Factors for laboratory testing results: \([\text{mg/L or mg/kg or ppm}] \times \text{Conversion Factor} = \text{[pounds per Unit Volume]}\]

<table>
<thead>
<tr>
<th>Unit Volume</th>
<th>Conversion Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>lbs./acre inch</td>
<td>0.226</td>
</tr>
<tr>
<td>lbs./1,000 gallons</td>
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<tr>
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<td>0.0062</td>
</tr>
<tr>
<td>lbs/ton (wet weight)</td>
<td>0.002</td>
</tr>
</tbody>
</table>

- Applicable; **Hydraulic Loading Rates** – wastewater shall be land applied at rates to allow for proper soil absorption and plant uptake. In no case, shall the hydraulic loading rate exceed the soil permeability rate, resulting in a discharge. Hydraulic loading rates must also consider nitrogen loading to the soils and crop. In accordance with 10 CSR 20-8.020(15)(F)7., wastewater application rates should not exceed a nitrogen application rate of 150 pounds total nitrogen per acre per year, and the applied wastewater should not exceed ten (10) mg/l of nitrate nitrogen as N.

**MAJOR WATER USER:**

Any surface or groundwater user with a water source and the equipment necessary to withdraw or divert 100,000 gallons (or 70 gallons per minute) or more per day combined from all sources from any stream, river, lake, well, spring, or other water source is considered a major water user in Missouri. All major water users are required by law to register water use annually (Missouri Revised Statues Chapter 256.400 Geology, Water Resources and Geodetic Survey Section). [https://dnr.mo.gov/pubs/pub2337.htm](https://dnr.mo.gov/pubs/pub2337.htm)

- Not applicable; this permittee cannot withdraw water from the state in excess of 70 gpm/0.1 MGD.
**OIL/WATER SEPARATORS:**

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

- Not applicable; the permittee has not disclosed the use of any oil water separators at this permitted facility and therefore oil water separator tanks are not authorized by this permit.

**REASONABLE POTENTIAL (RP):**

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

- Not applicable; a mathematical RPA was not conducted for this facility.

**SAMPLING FREQUENCY JUSTIFICATION:**

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

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

**SAMPLING TYPE JUSTIFICATION:**

Sampling type was continued from the previous permit. The sampling types are representative of the discharges, and are protective of water quality. Discharges with altering effluent should have composite sampling; discharges with uniform effluent can have grab samples. Grab samples are usually appropriate for stormwater. Parameters which must have grab sampling are: pH, ammonia, E. coli, total residual chlorine, free available chlorine, hexavalent chromium, dissolved oxygen, total phosphorus, volatile organic compounds, and others.

**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. A SOC is not allowed:

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

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

- Not applicable; this permit does not contain a SOC.
**Spills, Overflows, and Other Unauthorized Discharge Reporting:**

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

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

**Sludge – Industrial:**

Industrial sludge is solid, semi-solid, or liquid residue generated during the treatment of industrial process 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; industrial sludge is not generated at this facility.

**Standard Conditions:**

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

**Stormwater Permitting: Limitations and Benchmarks:**

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

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

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

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

Numeric benchmark values are based on site specific requirements taking in to account a number of factors but cannot be applied to any process water discharges. First, the technology in place at the site to control pollutant discharges in stormwater is evaluated. The permit writer also evaluates other similar permits for similar activities. A review of the guidance forming the basis of Environmental Protection Agency’s (EPA’s) *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP) may also occur. Because precipitation events are sudden and momentary, benchmarks based on state or federal standards or recommendations use the Criteria Maximum Concentration (CMC) value, or acute standard may also be used. The CMC is the estimate of the highest concentration of a material in surface water to which an aquatic community can be exposed briefly without resulting in an unacceptable effect. The CMC for aquatic life is intended to be protective of the vast majority of the aquatic communities in the United States. If a facility has not disclosed BMPs applicable to the pollutants for the site, the permittee may not be eligible for benchmarks.
40 CFR 122.44(b)(1) requires the permit implement the most stringent limitations for each discharge, including industrially exposed stormwater; and 40 CFR 122.44(d)(1)(i) and (iii) requires the permit to include water-quality based effluent limitations where reasonable potential has been found. However, because of the non-continuous nature of stormwater discharges, staff are unable to perform statistical Reasonable Potential Analysis (RPA) under most stormwater discharge scenarios. Reasonable potential determinations (RPDs; see REASONABLE POTENTIAL above) using best professional judgment are performed.

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

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

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

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

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

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

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

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

For new, altered, or expanded stormwater discharges, the SWPPP shall identify reasonable and effective BMPs while accounting for environmental impacts of varying control methods. The antidegradation analysis must document why no discharge or no exposure options are not feasible. The selection and documentation of appropriate control measures shall serve as an alternative analysis of technology and fulfill the requirements of antidegradation [10 CSR 20-7.031(3)]. For further guidance, consult the antidegradation implementation procedure (http://dnr.mo.gov/env/wpp/docs/AIP050212.pdf).
Alternative Analysis (AA) evaluation of the BMPs is a structured evaluation of BMPs which are reasonable and cost effective. The AA evaluation should include practices designed to be: 1) non-degrading; 2) less degrading; or 3) degrading water quality. The glossary of AIP defines these three terms. The chosen BMP will be the most reasonable and effective management strategy while ensuring the highest statutory and regulatory requirements are achieved and the highest quality water attainable for the facility is discharged. The AA evaluation must demonstrate why “no discharge” or “no exposure” is not a feasible alternative at the facility. This structured analysis of BMPs serves as the antidegradation review, fulfilling the requirements of 10 CSR 20-7.031(3) Water Quality Standards and Antidegradation Implementation Procedure (AIP), Section II.B.

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

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

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

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 not provide adequate protection for the receiving water, then the other must be used per 10 CSR 20-7.015(9)(A).

- Not applicable; wasteload allocations were not calculated.

### Wasteload Allocation (WLA) Modeling:
Permittees may submit site specific studies to better determine the site specific wasteload allocations applied in permits.

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

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

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

### PART IV. Permit Limits & Monitoring Determination
Effluent limitations derived and established for this permit 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.

### Unauthorized Discharge Parameters
- BOD₅, TSS, Ammonia, pH, Oil & Grease, E. coli, are conventional pollutants found in wastewater. These parameters shall be monitored at least once per day during the discharge event. Additional monitoring may be required by the Department on a case-by-case basis. All samples shall be collected as grab samples. pH samples cannot be preserved and must be sampled in the field.

### Permitted Feature #001 – Lagoon
Limitations derived and established in the below Storage Basin Limitations Table are based on current operations of the facility. 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.

### Storage Basin Limitations Table:

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<tr>
<th>Parameters</th>
<th>Unit</th>
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<th>Previous Permit Limits</th>
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<td>grab</td>
</tr>
<tr>
<td>Total Kjeldahl Nitrogen</td>
<td>mg/L</td>
<td>*</td>
<td>same</td>
<td>once/quarter</td>
<td>once/year</td>
<td>grab</td>
</tr>
<tr>
<td>Ammonia Nitrogen as an</td>
<td>mg/L</td>
<td>*</td>
<td>same</td>
<td>once/quarter</td>
<td>once/year</td>
<td>grab</td>
</tr>
<tr>
<td>Nitrate Nitrogen as N</td>
<td>mg/L</td>
<td>*</td>
<td>same</td>
<td>once/quarter</td>
<td>once/year</td>
<td>grab</td>
</tr>
<tr>
<td>Chloride</td>
<td>mg/L</td>
<td>*</td>
<td>same</td>
<td>once/quarter</td>
<td>once/year</td>
<td>grab</td>
</tr>
<tr>
<td>Total Sodium</td>
<td>mg/L</td>
<td>*</td>
<td>same</td>
<td>once/quarter</td>
<td>once/year</td>
<td>grab</td>
</tr>
</tbody>
</table>

* - Monitoring requirement only
PERMITTED FEATURE #001 – DERIVATION AND DISCUSSION OF LIMITS:

STORAGE BASIN:

**Freeboard**
Monitoring requirement to verify adequate freeboard is maintained, so as to avoid an overflow of the storage basin.

**Precipitation**
Monitoring requirement to verify adequate freeboard is maintained, so as to avoid an overflow of the storage basin. Additionally, precipitation monitoring allows the permittee to operate the land application activity to prevent over application during saturated conditions that may result in a discharge.

IRRIGATED WASTEWATER:

- **Total Phosphorous.** Monitoring requirement only. Monitoring for Total Phosphorous is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Total Kjeldahl Nitrogen.** Monitoring requirement only. Monitoring for Total Kjeldahl Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Ammonia Nitrogen as N.** Monitoring requirement only. Monitoring for Ammonia Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Nitrate Nitrogen as N.** Monitoring requirement only. Monitoring for Nitrate Nitrogen as N is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Chloride.** Monitoring requirement only. Monitoring for Chloride is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Total Sodium.** Monitoring requirement only. Monitoring for Total Sodium is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

PERMITTED FEATURE #004 - #009 – Land Application Fields
Limitations derived and established in the below Land Application Field Limitations Table are based on current operations of the facility. 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.

STORAGE BASIN LIMITATIONS TABLE:

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>UNIT</th>
<th>DAILY MAX</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>WASTEWATER APPLICATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Area</td>
<td>Acres</td>
<td>*</td>
<td>same</td>
<td>once/day</td>
<td>once/month</td>
<td>measured</td>
</tr>
<tr>
<td>Application Rate</td>
<td>Inches/Acre</td>
<td>*</td>
<td>same</td>
<td>once/day</td>
<td>once/month</td>
<td>measured</td>
</tr>
<tr>
<td>Irrigation Period</td>
<td>Hours</td>
<td>*</td>
<td>same</td>
<td>once/day</td>
<td>once/month</td>
<td>measured</td>
</tr>
<tr>
<td>Volume Irrigated</td>
<td>Gallons</td>
<td>*</td>
<td>same</td>
<td>once/day</td>
<td>once/month</td>
<td>measured</td>
</tr>
<tr>
<td><strong>SOIL MONITORING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Sodium</td>
<td>mg/kg</td>
<td>*</td>
<td>same</td>
<td>once/permit</td>
<td>once/permit</td>
<td>grab</td>
</tr>
<tr>
<td>Chloride</td>
<td>mg/kg</td>
<td>*</td>
<td>same</td>
<td>once/permit</td>
<td>once/permit</td>
<td>grab</td>
</tr>
<tr>
<td>pH (salt)</td>
<td>SU</td>
<td>*</td>
<td>same</td>
<td>once/permit</td>
<td>once/permit</td>
<td>grab</td>
</tr>
<tr>
<td>Available Phosphorus as P (Bray 1-P method)</td>
<td>mg/kg</td>
<td>*</td>
<td>same</td>
<td>once/permit</td>
<td>once/permit</td>
<td>grab</td>
</tr>
<tr>
<td>Cation Exchange Capacity</td>
<td>mEq/100g</td>
<td>*</td>
<td>same</td>
<td>once/permit</td>
<td>once/permit</td>
<td>grab</td>
</tr>
<tr>
<td>Sodium Absorption Ration</td>
<td>%</td>
<td>*</td>
<td>same</td>
<td>once/permit</td>
<td>once/permit</td>
<td>grab</td>
</tr>
</tbody>
</table>

* - Monitoring requirement only
**PERMITTED FEATURE #004 - #009 – DERIVATION AND DISCUSSION OF LIMITS:**

**WASTEWATER APPLICATION:**

**Application Area**
Monitoring requirement only. In order to determine compliance with 10 CSR 20-6.015(4)(A)1 monitoring of application activity is required. Monitoring the area will allow the permittee to ensure compliance with setback distances and are prevents illicit discharges to waterbodies.

**Application Rate**
Monitoring requirement only. In order to determine compliance with 10 CSR 20-6.015 6.015(4)(A)1, monitoring of application activity is required. Monitoring the rate will allow the permittee to ensure appropriate permeability and plant uptake is occurring and will prevent soil saturation that may result in runoff and illicit discharges to waterbodies. This will also prevent sludge buildup that may clog soils, which likewise will cause runoff and illicit discharges of wastewater to waterbodies.

**Irrigation Period**
Monitoring requirement only. In order to determine compliance with 10 CSR 20-6.015 6.015(4)(A)1, monitoring of application activity is required. Monitoring the irrigation period will also ensure that soils to not get saturated and result in runoff and illicit discharges to waterbodies.

**Volume Irrigated**
Monitoring requirement only. In order to determine compliance with 10 CSR 20-6.015 6.015(4)(A)1, monitoring of application activity is required. Monitoring the volume irrigated will allow the permittee to ensure over application does not occur and that hydraulic loading is maintained within design levels. This will also help prevent runoff and illicit discharges due to soil saturation. This will also prevent sludge buildup that may clog soils, which likewise will cause runoff and illicit discharges of wastewater to waterbodies.

**SOIL MONITORING:**

- **Chloride.** Monitoring requirement only. Monitoring for Chloride is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Cation Exchange Capacity.** Monitoring requirement only. Monitoring for Cation Exchange Capacity is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **pH (salt).** Monitoring requirement only. Monitoring for pH is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Available Phosphorus as P.** Monitoring requirement only. Monitoring for Available Phosphorus as P is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Total Sodium.** Monitoring requirement only. Monitoring for Total Sodium is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

- **Sodium Absorption Ration.** Monitoring requirement only. Monitoring for Sodium Absorption Ration is included to determine nutrient loading rates on the land application fields. [10 CSR 20-6.015(4)(A)1.]

**PERMITTED FEATURE #002 - #009 STORMWATER FROM LAND APPLICATION FIELDS**

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>UNIT</th>
<th>DAILY MAXIMUM LIMIT</th>
<th>PREVIOUS PERMIT LIMITS</th>
<th>MINIMUM SAMPLING FREQUENCY</th>
<th>REPORTING FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTRIENTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia Nitrogen as N</td>
<td>mg/L</td>
<td>*</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>ONCE/MONTH</td>
<td>GRAB</td>
</tr>
<tr>
<td>Nitrate Nitrogen as N</td>
<td>mg/L</td>
<td>*</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>ONCE/MONTH</td>
<td>GRAB</td>
</tr>
<tr>
<td>Phosphorous, Total</td>
<td>mg/L</td>
<td>*</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>ONCE/MONTH</td>
<td>GRAB</td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloride</td>
<td>mg/L</td>
<td>377</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>ONCE/MONTH</td>
<td>GRAB</td>
</tr>
<tr>
<td>Total Sodium</td>
<td>mg/L</td>
<td>*</td>
<td>SAME</td>
<td>ONCE/MONTH</td>
<td>ONCE/MONTH</td>
<td>GRAB</td>
</tr>
</tbody>
</table>
PERMITTED FEATURE #002 - #009 – DERIVATION AND DISCUSSION OF LIMITS:

AMMONIA NITROGEN AS N
Monitoring only requirement.

NITRATE NITROGEN AS N
Monitoring only requirement.

PHOSPHOROUS, TOTAL
Monitoring only requirement.

Chloride
Previous permit limits retained.

Total Sodium
Monitoring only requirement.

EFFLUENT LIMITATIONS TABLE – Permitted Features #001, – Emergency Discharge
Discharge from these outfalls is only authorized when a wet weather event causes an overflow of manure, litter, or process wastewater AND the lagoons have been properly designed, constructed, operated and maintained.

<table>
<thead>
<tr>
<th>PHYSICAL</th>
<th>MONITORING REPORTS SHALL BE SUBMITTED BY THE 28th DAY OF THE MONTH FOLLOWING DISCHARGE CESSATION.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>Monitoring requirement only.</td>
</tr>
<tr>
<td>CONVENTIONAL</td>
<td></td>
</tr>
<tr>
<td>Biological Oxygen Demand, 5 Day</td>
<td>Monitoring requirement only.</td>
</tr>
<tr>
<td>pH</td>
<td>Monitoring requirement only.</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>Monitoring requirement only.</td>
</tr>
<tr>
<td>E. coli</td>
<td>Monitoring requirement only.</td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>Monitoring requirement only.</td>
</tr>
<tr>
<td>NUTRIENTS</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N</td>
<td>Monitoring requirement only.</td>
</tr>
</tbody>
</table>

* Monitoring and reporting requirement only.
◊ The facility shall report the minimum value obtained if more than one sample was taken.
† The facility shall report the range (minimum to maximum values) if more than one sample is obtained.
‡ Once per event means the facility must take a sample at least once per discharge event. If there was no discharge, a report is not necessary; if a discharge occurred, the facility must report all results of sampling into the eDMR system by the 28th day of the month following the completion of the discharge.

DERIVATION AND DISCUSSION OF LIMITS:

Flow
Monitoring requirement only.

Biochemical Oxygen Demand - 5 Day (BOD5)
Monitoring requirement only.

Total Suspended Solids
Monitoring requirement only.

pH
Monitoring requirement only.

E. coli
Monitoring requirement only.

Oil & Grease
Monitoring requirement only.
Ammonia as N
Monitoring requirement only.

UNAUTHORIZED DISCHARGES TABLE - All Permitted Features and Land Application Areas
The following is required for an unauthorized discharge. Monitoring requirement only based on best professional judgment.

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>UNIT</th>
<th>DAILY MAXIMUM</th>
<th>MINIMUM SAMPLING FREQUENCY</th>
<th>REPORTING FREQUENCY</th>
<th>SAMPLE TYPE</th>
<th>PREVIOUS PERMIT LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>once/day while discharging</td>
<td>28th day of the month after the cessation of the discharge</td>
<td>GRAB</td>
<td>*</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand5</td>
<td>mg/L</td>
<td>*</td>
<td>once/day while discharging</td>
<td>28th day of the month after the cessation of the discharge</td>
<td>GRAB</td>
<td>*</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>*</td>
<td>once/day while discharging</td>
<td>28th day of the month after the cessation of the discharge</td>
<td>GRAB</td>
<td>*</td>
</tr>
<tr>
<td>Ammonia as N</td>
<td>mg/L</td>
<td>*</td>
<td>once/day while discharging</td>
<td>28th day of the month after the cessation of the discharge</td>
<td>GRAB</td>
<td>*</td>
</tr>
<tr>
<td>pH</td>
<td>SU</td>
<td>*</td>
<td>once/day while discharging</td>
<td>28th day of the month after the cessation of the discharge</td>
<td>GRAB</td>
<td>*</td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L</td>
<td>*</td>
<td>once/day while discharging</td>
<td>28th day of the month after the cessation of the discharge</td>
<td>GRAB</td>
<td>*</td>
</tr>
<tr>
<td>E. coli</td>
<td>#/100mL</td>
<td>*</td>
<td>once/day while discharging</td>
<td>28th day of the month after the cessation of the discharge</td>
<td>GRAB</td>
<td>*</td>
</tr>
</tbody>
</table>

* - Monitoring requirement only
** - # of colonies/100mL; the Monthly Average for E. coli is a geometric mean.
*** - Parameter not established in previous state operating permit.

DERIVATION AND DISCUSSION OF LIMITS:

Flow
Monitoring requirement only.

Biochemical Oxygen Demand - 5 Day (BOD5)
Monitoring requirement only.

Total Suspended Solids
Monitoring requirement only.

Ammonia as N
Monitoring requirement only.

pH
Monitoring requirement only.

Oil & Grease
Monitoring requirement only.

E. coli
Monitoring requirement only.
PART V. ADMINISTRATIVE REQUIREMENTS

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

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

This permit will maintain synchronization by expiring the end of the third quarter, 2024.

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

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

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

The Public Notice period for this operating permit was from July 26, 2019 to August 26, 2019. No responses were received.

DATE OF FACT SHEET: SEPTEMBER 3, 2019
COMPLETED BY:

GREG CALDWELL, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - INDUSTRIAL UNIT
(573) 526-1426
greg.caldwell@dnr.mo.gov
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.

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.

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.

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

Page 1 of 4
2. The following shall be included as information which must be reported within 24 hours under this paragraph:
   a. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   b. Any upset which exceeds any effluent limitation in the permit.
   c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
   d. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

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

   c. **Prohibition of bypass.**
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
      ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The 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).
   c. The permittee complied with any remedial measures required under Section D – Administrative Requirements, paragraph 4.

   d. **Burden of proof.** In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
   b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement
imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $5,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(ii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

c. Any person may be assessed an administrative penalty by the EPA Director for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

d. It is unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law, or any standard, rule or regulation promulgated by the commission. In the event the commission or the director determines that any provision of sections 644.006 to 644.141 of the Missouri Clean Water Law or standard, rules, limitations or regulations promulgated pursuant thereto, or permits issued by, or any final abatement order, other order, or determination made by the commission or the director, or any filing requirement pursuant to sections 644.006 to 644.141 of the Missouri Clean Water Law or any other provision which this state is required to enforce pursuant to any federal water pollution control act, is being, was, or is in imminent danger of being violated, the commission or director may cause to have instituted a civil action in any court of competent jurisdiction for the injunctive relief to prevent any such violation or further violation or for the assessment of a penalty not to exceed $10,000 per day for each day, or part thereof, the violation occurred and continues to occur, or both, as the court deems proper. Any person who willfully or negligently commits any violation in this paragraph shall, upon conviction, be punished by a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both. Second and successive convictions for violation of the same provision of this paragraph by any person shall be punished by a fine of not more than $50,000 per day of violation, or by imprisonment for not more than two (2) years, or both.

2. Duty to Reapply.
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

3. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and proper quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

6. Permit Actions.
   a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      i. Violations of any terms or conditions of this permit or the law;
      ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
   b. Any reason set forth in the Law or Regulations.
   c. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. Permit Transfer.
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.

8. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

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

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

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

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

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.
## 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. Number of original construction permit: MO- 121
- [x] Renewal of an operating permit. Permit number: MO 0121878 Expiration date: 9/30/2019
- [ ] Modification of an operating permit. Permit number: MO

#### 1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee.)
- [x] Yes
- [ ] No

### 2. FACILITY

**NAME**

BURGERS’ SMOKEHOUSE

**TELEPHONE NUMBER WITH AREA CODE**

800-203-4424

**EMAIL**

KFLETCHER@SMOKEHOUSE.COM

**PHYSICAL ADDRESS (PHYSICAL)**

32819 HWY 87

**CITY**

CALIFORNIA

**STATE**

MO

**ZIP CODE**

65018

### 3. OWNER

**NAME**

BURGERS’ OZARK COUNTRY CURED HAMS INC

**TELEPHONE NUMBER WITH AREA CODE**

573-796-3134

**EMAIL**

KFLETCHER@SMOKEHOUSE.COM

**MAILING ADDRESS**

32819 HWY 87

**CITY**

CALIFORNIA

**STATE**

MO

**ZIP CODE**

65018

### 4. CONTINUING AUTHORITY

**NAME**

BURGERS’ OZARK COUNTRY CURED HAMS INC

**TELEPHONE NUMBER WITH AREA CODE**

573-796-3134

**EMAIL**

KFLETCHER@SMOKEHOUSE.COM

**MAILING ADDRESS**

32819 HWY 87

**CITY**

CALIFORNIA

**STATE**

MO

**ZIP CODE**

65018

### 5. OPERATOR

**NAME**

BURGERS’ OZARK COUNTRY CURED HAMS INC

**CERTIFICATE NUMBER**

573-796-3134

**TELEPHONE NUMBER WITH AREA CODE**

573-796-3134

**EMAIL**

KFLETCHER@SMOKEHOUSE.COM

**MAILING ADDRESS**

32819 HWY 87

**CITY**

CALIFORNIA

**STATE**

MO

**ZIP CODE**

65018

### 6. FACILITY CONTACT

**NAME**

KEITH FLETCHER

**TITLE**

SR VP OPERATIONS

**TELEPHONE NUMBER WITH AREA CODE**

573-796-3134

**EMAIL**

KFLETCHER@SMOKEHOUSE.COM

### 7. ADDITIONAL FACILITY INFORMATION

#### 7.1 Legal description of outfalls (Attach additional sheets, if necessary.)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Description</th>
<th>UTM Coordinates Easting</th>
<th>Northing</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>NW ¼ NE ¼ Sec 9 T 44N R 15W</td>
<td>X:</td>
<td>Y:</td>
<td>MONI</td>
</tr>
<tr>
<td>004</td>
<td>SW ¾ NW ¼ Sec 10 T 44N R 15W</td>
<td>X:</td>
<td>Y:</td>
<td>MONI</td>
</tr>
</tbody>
</table>

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

#### 7.2 Primary standard industrial classification (SIC) and North American Industrial Classification System (NAICS) codes

<table>
<thead>
<tr>
<th>Unit</th>
<th>SIC</th>
<th>NAICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>2013</td>
<td>311612</td>
</tr>
<tr>
<td>002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>003</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MO 780-1479 (04-18)**
### 8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE APPLICATION (Complete all applicable forms.)

<table>
<thead>
<tr>
<th></th>
<th>Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility?</th>
<th>Yes □ No X</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(If yes, complete Form C or 2F. (2F is EPA's Application for Storm Water Discharges Associated with Industrial Activity.)</td>
<td></td>
</tr>
<tr>
<td>B.</td>
<td>Is application for stormwater discharges only?</td>
<td>Yes □ No X</td>
</tr>
<tr>
<td></td>
<td>(If yes, complete Form C or 2F.</td>
<td></td>
</tr>
<tr>
<td>C.</td>
<td>Is your facility considered a “primary industry” under EPA guidelines:</td>
<td>Yes □ No X</td>
</tr>
<tr>
<td></td>
<td>(If yes, complete Forms C or 2F and D.)</td>
<td></td>
</tr>
<tr>
<td>D.</td>
<td>Is wastewater land-applied?</td>
<td>Yes □ No X</td>
</tr>
<tr>
<td></td>
<td>(If yes, complete Form I.)</td>
<td></td>
</tr>
<tr>
<td>E.</td>
<td>Are biosolids, sludge, ash or residuals generated, treated, stored or land-applied?</td>
<td>Yes □ No X</td>
</tr>
<tr>
<td></td>
<td>(If yes, complete Form R.)</td>
<td></td>
</tr>
<tr>
<td>F.</td>
<td>If you are a Class IA CAFO, disregard Parts D and E, above, but attach any revisions to the nutrient management plan.</td>
<td></td>
</tr>
<tr>
<td>G.</td>
<td>Attach a map showing all outfalls and the receiving stream at 1&quot; = 2,000' scale.</td>
<td></td>
</tr>
</tbody>
</table>

### 9. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

Per 40 CFR Part 127 National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, permittee shall report effluent limits and monitoring via an electronic system to ensure timely, complete, accurate and nationally consistent data.

Check one of the following for this application to be considered complete. (Check only one.)

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

### 9. DOWNSTREAM LANDOWNER(S)

Attach additional sheets as necessary. See Instructions.

**PLEASE SHOW LOCATION ON MAP. SEE 8(D) ABOVE.**

### NAME AS ATTACHED

<table>
<thead>
<tr>
<th>NAME</th>
<th>ADDRESS</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP CODE</th>
</tr>
</thead>
</table>

### 11. I certify that I am familiar with the information contained in this application. To the best of my knowledge and belief, such information is true, complete and accurate. 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 to the Missouri Clean Water Commission available to the applicant under the Missouri Clean Water Law.

<table>
<thead>
<tr>
<th>NAME AND OFFICIAL TITLE (TYPE OR PRINT)</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEITH FLETCHER SR VP OPERATIONS</td>
<td>573-796-3134</td>
</tr>
</tbody>
</table>

**SIGNATURE:**

**DATE SIGNED:** 2/20/19

---

**BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETE.**

**ALSO INCLUDE APPLICABLE ADDITIONAL FORMS.**

Submitting an incomplete application may result in the application being returned.

**HAVE YOU INCLUDED THE FOLLOWING?**

- Appropriate fees
- Map at 1" = 2000' scale
- Signature
- Form C or 2F, if applicable
- Revised nutrient management plan, if applicable

- Form I (Irrigation), if applicable
- Form R (Sludge), if applicable
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
FORM I – PERMIT APPLICATION FOR
OPERATION OF WASTEWATER IRRIGATION SYSTEMS

INSTRUCTIONS: The following forms must be submitted with Form I: FORM B or B2 for domestic wastewater.
FORM A for industrial wastewater.

1. FACILITY INFORMATION

1.1 Facility Name
BURGERS' SMOKEHOUSE

1.2 Permit Number
MO-0121876

1.3 Type of wastewater to be irrigated:
☐ Domestic ☐ Municipal ☐ State/National Park ☐ Seasonal business
☐ Municipal with Pretreatment Program or Significant Industrial Users ☐ Other (explain) _____________________________

SIC Codes (list all that apply, in order of importance) 2013 4152

1.4 Months when the business or enterprise will operate or generate wastewater:
☐ 12 months per year ☐ Part of year (list Months): _____

1.5 This system is designed for:
☐ No-discharge ☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreation season (April – October) and discharge during November – March.
☐ Other (explain) _____________________________

1.6 List the Facility outfalls which will be applicable to the irrigation system.
Outfall Numbers: 01 02 03 04

2. STORAGE BASINS

2.1 Number of storage basins: 2
Type of basin: ☐ Steel ☐ Concrete ☐ Fiberglass ☐ Earthen
☐ Earthen with membrane liner

3. LAND APPLICATION SYSTEM

3.1 Number of irrigation sites 8
Total Acres 219
Location: NE 1/4, 1/4, 1/4, Sec 9 T 44N R 15w MONITEAU County 103 Acres
Location: SW 1/4, NW 1/4, 1/4, Sec 10 T 44N R 152 MONITEAU County 28 Acres

Attach pages as needed.

3.2 Attach a site map showing topography, storage basins, irrigation sites, property boundary, streams, wells, roads, dwellings, and other pertinent features. Maps included

3.3 Type of vegetation:
☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops ☐ Other (describe) _____________________________

3.4 Wastewater flow (dry weather) gallons/day:
Average annual: 30000 Seasonal ________ Off-season ________

Months of seasonal flow: 6

LOCATION NW 1/4 NW 1/4 S10 T44N R15W MONITEAU CY 17 AC SITE 3
LOCATION NE 1/4 NE 1/4 S9 T44N R15W MONITEAU CY 12 AC SITE 5
LOCATION SW 1/4 SW 1/4 S3 T44N R15W MONITEAU CY 11 AC SITE 7
LOCATION NW 1/4 NW 1/4 S10 T44N R15W MONITEAU CY 10 AC SITE 4
LOCATION SE 1/4 SE 1/4 S4 T44N R15W MONITEAU CY 11 AC SITE 6
LOCATION SE 1/4 SW 1/4 S3 T44N R15W MONITEAU CY 28 AC SITE 8
3. LAND APPLICATION SYSTEM (continued)

3.5 Land Application rate per acre (design flow including 1 in 10 year stormwater flows):

<table>
<thead>
<tr>
<th>Design: 11 inches/year</th>
<th>.5 inches/hour</th>
<th>1.5 inches/day</th>
<th>4.5 inches/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual: ______ inches/year</td>
<td>______ inches/hour</td>
<td>______ inches/day</td>
<td>______ inches/week</td>
</tr>
</tbody>
</table>

Total Irrigation per year (gallons):

- Design: 30000
- Actual: 18500

Actual months used for Irrigation (check all that apply):

- Jan  □  Feb  □  Mar  □  Apr  □  May  □  Jun  □  Jul  □  Aug  □  Sep  □  Oct  □  Nov  □  Dec

3.6 Land Application Rate is based on:

- □ Nutrient Management Plan (N&P)
- □ Hydraulic Loading
- □ Other (describe) ____________________________

3.7 Equipment type:

- □ Sprinklers
- □ Gated pipe
- □ Center pivot
- □ Traveling gun
- □ Other (describe) ____________________________

Equipment Flow Capacity: ______ Gallons per hour ______ Total hours of operation per year

3.8 Public Use Areas. Public access shall not be allowed to public use area irrigation sites when application is occurring. Method of Public Access Restriction:

- □ Site is Fenced
- □ Wastewater disinfection prior to irrigation
- □ Site is not for public use
- □ Other (describe): Private property with no public access points

3.9 Separation distance (in feet) from the outside edge of the wetted irrigation area to nearby down gradient features:

- 1000 Permanent flowing stream
- 0 Losing Stream
- 2100 Intermittent (wet weather) stream
- 100 Lake or pond
- 50 Property boundary
- 150 Dwellings
- 0 Water supply well
- □ Other (describe) ____________________________

3.10 The facility must develop and retain an Operation and Maintenance (O&M) Plan for the irrigation system.

Date of O&M Plan: August 2012

4. 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 this 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 or imprisonment.

OWNER OR AUTHORIZED REPRESENTATIVE
KEITH FLETCHER
VICE PRESIDENT OF OPERATIONS

E-MAIL ADDRESS
K-fletcher@smokehouse.com

TELEPHONE NUMBER WITH AREA CODE
(573) 796-3134

SIGNATURE
Keith Fletcher

DATE SIGNED
2/20/19
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

FORM B: APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW LESS THAN OR EQUAL TO 100,000 GALLONS PER DAY

READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. THIS APPLICATION IS FOR:

☐ An operating permit for a new or unpermitted facility. Construction Permit #_______

☐ A new site-specific operating permit for a formerly general permit #MOG_______

☐ A site-specific operating permit renewal: Permit #MO- 0121878 Expiration Date 9/30/2019

☐ A site-specific operating permit modification: Permit #MO-_______ Reason: ____

☐ General permit (MOGD - Non POTWs discharging < 50,000 GPD or MOG823 - Land Application of Domestic Wastewater):

2. FACILITY

NAME BURGERS' SMOKEHOUSE

ADDRESS (PHYSICAL) 32819 HWY N

CITY CALIFORNIA

STATE MO ZIP CODE 65018

2.1 Legal description: NE ¼, ¼, ¼ Sec 9, T 44n R 15w County Moniteau

2.2 UTM Coordinates Easting (X): 38,590077 Northing (Y): 92,568535

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

2.3 Name of receiving stream: unname tributary to Moreau Creek

2.4 Number of outfalls: 4 Wastewater outfalls: 0 Stormwater outfalls: 4 Instream monitoring sites: 0

3. OWNER

NAME Burgers' Ozark Country Cured Hams

ADDRESS 32819 HWY 87

CITY CALIFORNIA

STATE MO ZIP CODE 65018

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

3.2 Are you a publicly owned treatment works? ☐ YES ☐ NO

If yes, is the Financial Questionnaire attached? ☐ YES ☐ NO

3.3 Are you a privately owned treatment works? ☐ YES ☐ NO

3.4 Are you a privately owned treatment facility regulated by the Public Service Commission? ☐ YES ☐ NO

4. CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the facility.

NAME same

ADDRESS same

CITY same

STATE same ZIP CODE same

If the continuing authority is different than the owner, include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

5. OPERATOR

NAME KEITH FLETCHER

EMAIL ADDRESS kfletcher@smokehouse.com

ADDRESS 32819 HWY 87

CITY CALIFORNIA

STATE MO ZIP CODE 65018

6. FACILITY CONTACT

NAME KEITH FLETCHER

EMAIL ADDRESS kfletcher@smokehouse.com

ADDRESS 32819 HWY 87

CITY CALIFORNIA

STATE MO ZIP CODE 65018
7. DESCRIPTION OF FACILITY

7.1 Process Flow Diagram or Schematic: Provide a diagram showing the processes of the treatment plant. Show all of the treatment units, including disinfection (e.g. – chlorination and dechlorination), influents, and outfalls. Specify where samples are taken. Indicate any treatment process changes in the routing of wastewater during dry weather and peak wet weather. Include a brief narrative description of the diagram. Attach sheets as necessary.

SAME AS PREVIOUS PERMITS

Maps Included

7.2 Attach an aerial photograph or USGS topographic map showing the location of the facility and outfall.
8. ADDITIONAL FACILITY INFORMATION

8.1 Facility SIC code: 2013  Discharge SIC code: 

8.2 Number of people presently connected or population equivalent (P.E.)  Design P.E.

8.3 Connections to the facility:
Number of units presently connected:
Homes _____  Trailers _____  Apartments _____  Other (including industrial) _____
Number of commercial establishments: _____

8.4 Design flow: 30,000  Actual flow: 18,500

8.5 Will discharge be continuous through the year? ☑ Yes  ☐ No
Discharge will occur during the following months: JANUARY-DECEMBER

How many days of the week will discharge occur? 7

8.6 Is industrial wastewater discharged to the facility? ☑ Yes  ☐ No
If yes, attach a list of the industries that discharge to your facility

8.7 Does the facility accept or process leachate from landfills? ☑ Yes  ☐ No

8.8 Is wastewater land applied? ☑ Yes  ☐ No
If yes, is Form I attached? ☑ Yes  ☐ No

8.9 Does the facility discharge to a losing stream or sinkhole? ☑ Yes  ☐ No

8.10 Has a wasteload allocation study been completed for this facility? ☑ Yes  ☐ No

9. LABORATORY CONTROL INFORMATION

LABORATORY WORK CONDUCTED BY PLANT PERSONNEL

Lab work conducted outside of plant. ☑ Yes  ☐ No

Push-button or visual methods for simple test such as pH, settleable solids. ☑ Yes  ☐ No

Additional procedures such as dissolved oxygen, chemical oxygen demand, biological oxygen demand, titrations, solids, volatile content. ☑ Yes  ☐ No

More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc. ☑ Yes  ☐ No

Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph. ☑ Yes  ☐ No

10. COLLECTION SYSTEM

10.1 Length of pipe in the sewer collection system? 600 _____ Feet, or _____ Miles (either unit is appropriate)

10.2 Does significant infiltration occur in the collection system? ☑ Yes  ☐ No
If yes, briefly explain any steps underway or planned to minimize inflow and infiltration:

11. BYPASSING

Does any bypassing occur in the collection system or at the treatment facility? ☑ Yes  ☐ No
If yes, explain:
### 12. SLUDGE HANDLING, USE AND DISPOSAL

<table>
<thead>
<tr>
<th>12.1</th>
<th>Is the sludge a hazardous waste as defined by 10 CSR 25?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>12.2</th>
<th>Sludge production, including sludge received from others:</th>
<th>Design dry tons/year</th>
<th>Actual dry tons/year</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>12.3</th>
<th>Capacity of sludge holding structures:</th>
<th>Sludge storage provided: cubic feet; days of storage; average percent solids of sludge;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No sludge storage is provided.</td>
<td>Sludge is stored in lagoon.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.4</th>
<th>Type of Storage:</th>
<th>Holding tank</th>
<th>Basin</th>
<th>Lagoon</th>
<th>Concrete Pad</th>
<th>Other (Describe)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>12.5</th>
<th>Sludge Treatment:</th>
<th>Lagoon</th>
<th>Composting</th>
<th>Other (Attach description)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anaerobic Digester</td>
<td></td>
<td></td>
<td>Aero or Heat Drying</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.6</th>
<th>Sludge Use or Disposal:</th>
<th>Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)</th>
<th>Hauled to Another treatment facility</th>
<th>Sludge Retained in Wastewater treatment lagoon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Land Application</td>
<td>Contract Hauler</td>
<td>Incineration</td>
<td>Solid waste landfill</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12.7</th>
<th>Person responsible for hauling sludge to disposal facility:</th>
<th>By applicant</th>
<th>By others (complete below)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>12.9</th>
<th>Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?</th>
<th>Yes</th>
<th>No (Explain)</th>
</tr>
</thead>
</table>

### 13. ELECTRONIC DISCHARGE MONITORING REPORT (eDMR) SUBMISSION SYSTEM

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

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

### 14. CERTIFICATION

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.

<table>
<thead>
<tr>
<th>NAME (TYPE OR PRINT)</th>
<th>OFFICIAL TITLE</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEITH FLETCHER</td>
<td>SR VP OPERATIONS</td>
<td>(800) 203-4424</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIGNATURE</th>
<th>DATE SIGNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Signature]</td>
<td>2/20/19</td>
</tr>
</tbody>
</table>
Complete this form to register a permit holder for electronic reporting. This form should also be used to identify or change authorized representatives assigned an electronic signature for the department’s eDMR system.

**PART A. PERMIT HOLDER INFORMATION**

<table>
<thead>
<tr>
<th>PERMIT NUMBER</th>
<th>ADDRESS</th>
<th>FACILITY NAME</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MO-121878</td>
<td>32819 HWY 87</td>
<td>Burgers' Smokehouse</td>
<td>California</td>
<td>MO</td>
<td>65018</td>
</tr>
</tbody>
</table>

**PERMIT HOLDER ACCOUNT ACTION**

- [x] New Application
- [ ] Revised Permit Holder or Account Information
- [ ] Request for Reactivation

**PART B. USER ACCOUNT INFORMATION**

<table>
<thead>
<tr>
<th>USER ACCOUNT ACTION</th>
<th>ACCOUNT TYPE</th>
<th>LAST NAME</th>
<th>FIRST NAME</th>
<th>MIDDLE INITIAL</th>
<th>JOB TITLE</th>
<th>EMPLOYER'S NAME</th>
<th>EMAIL ADDRESS</th>
<th>CITY</th>
<th>STATE</th>
<th>ZIP CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>[x] Add</td>
<td>[ ] Viewer</td>
<td>Fletcher</td>
<td>Keith</td>
<td>A</td>
<td>SR VP Operations</td>
<td>Burgers' Smokehouse</td>
<td><a href="mailto:k.fletcher@smokehouse.com">k.fletcher@smokehouse.com</a></td>
<td>California</td>
<td>MO</td>
<td>65018</td>
</tr>
<tr>
<td>[x] Add</td>
<td>[ ] Preparer</td>
<td>Hickman</td>
<td>Mike</td>
<td>D</td>
<td>Waste Water Operator</td>
<td>Burgers' Smokehouse</td>
<td><a href="mailto:mh.hickman@smokehouse.com">mh.hickman@smokehouse.com</a></td>
<td>California</td>
<td>MO</td>
<td>65018</td>
</tr>
<tr>
<td>[ ] Add</td>
<td>[x] Certifier</td>
<td>Wirts</td>
<td>Allie</td>
<td>F</td>
<td>Maint Tech /Waste water</td>
<td>Burgers' Smokehouse</td>
<td>huzy092.qo1.com</td>
<td>California</td>
<td>MO</td>
<td>65018</td>
</tr>
<tr>
<td>[ ] Add</td>
<td>[ ] Preparer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TELEPHONE NUMBER WITH AREA CODE**

- 573-304-3115
- 573-796-3134
- 573-796-3134
PART C. PERMIT HOLDER REGISTRATION

I request the above identified permit holder be registered for electronic reporting and request any department initiated minor permit revisions (where no fee is required) that may be necessary to allow use of the department's eDMR system. As the permit holder, I agree the authorized representatives will follow permit requirements and the procedures for the electronic submission of DMR forms, as described in the permit holder participation package.

Please establish or revise the above user accounts in accordance with the information provided for each identified account. The person(s) identified as certifier(s) are hereby designated as the authorized representatives for all reporting purposes. I understand each person to receive a certifier account on the eDMR system must complete Part D and must sign in the presence of a Notary Public.

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

<table>
<thead>
<tr>
<th>PERMIT HOLDER NAME (TYPE OR PRINT)</th>
<th>PERMIT HOLDER SIGNATURE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keith Fletcher</td>
<td></td>
<td>2/20/19</td>
</tr>
</tbody>
</table>

OFFICIAL TITLE (TYPE OR PRINT)  
SR VP Operations

PART D. CERTIFIER REGISTRATION

The permit holder and certifier intend to have the submission of eDMRs be the functional equivalent of the paper submissions required by a permit issued in accordance with the Missouri Clean Water Law, Chapter 644, RSMo and/or the Clean Water Act, 33 U.S.C § 1251, et seq. The certifier will use a validly issued PIN as a signature when submitting eDMRs. The permit holder and certifier agree not to contest the validity of eDMRs submitted under an authorized PIN based on the fact such submissions were completed electronically. The permit holder and certifier further agree the provisions of the Uniform Electronic Transactions Act, Sections 432.200 through 432.295, RSMo, shall apply, except as otherwise stated herein or within the permit holder participation package.

The permit holder and certifier agree:

1. Any eDMR submitted under the PIN specific to the certifier shall be considered a "writing" or "in writing," and any such records shall be deemed for all purposes:
   a. To have been "signed" by the certifier.
   b. To constitute an "original" when printed from electronic files or records.

2. Electronic DMRs constitute admissible evidence in any judicial or administrative proceeding.

An electronically submitted DMR will not satisfy a reporting requirement until it has been received and accepted by the department. If an electronically submitted DMR is rejected, the permit holder shall take the necessary steps to properly resubmit such DMR within 24 hours of the notice of rejection.
By signing below, the permit holder and certifier agree with the terms and conditions of Part D.

Certifier (must sign in the presence of Notary)

Permit Holder (must sign in presence of Notary)

Notary Public 1*

Notary Public 2*

* Notary public 1 is for use if both the permit holder and the certifier both sign in the presence of the same notary; however, if the notary so desires they may sign and stamp both locations.
If the certifier and the permit holder do not sign at the same time, then notary 1 is specific to the certifier and notary 2 is specific to the permit holder.
In cases when the certifier and the permit holder are not in the same location, the certifier must complete the application to the best of their ability (including signature and notary public 1) and send the document to the permit holder to be completed (including signature and notary public 2).
By signing below, the permit holder and certifier agree with the terms and conditions of Part D.

Certifier (must sign in the presence of Notary)

Janet Meyer

Notary Public 1*

2-20-19

Date

Permit Holder (must sign in presence of Notary)

Keith et al.

2/20/19

Date

Notary Public 2*

Janet Meyer

2-20-19

Date

* Notary public 1 is for use if both the permit holder and the certifier both sign in the presence of the same notary; however, if the notary so desires they may sign and stamp both locations.
If the certifier and the permit holder do not sign at the same time, then notary 1 is specific to the certifier and notary 2 is specific to the permit holder.
In cases when the certifier and the permit holder are not in the same location, the certifier must complete the application to the best of their ability (including signature and notary public 1) and send the document to the permit holder to be completed (including signature and notary public 2).
**Figure 2: Basin Dimensions**

**LAGOON Cell 1 PROFILE**

- **Top of Berm**
- **Emergency Overflow**
- **1 ft Freeboard**
- **Safety Volume**: 25-year-24-hour storm
- **Storage Volume**: Wastewater Flows and 1-in-10 year Rainfall minus Evaporation
- **Bottom Seal Protection**: Treatment and Sludge Storage
- **Water Surface Area**

**LAGOON Cell 2 PROFILE**

- **Top of Berm**
- **Emergency Overflow**
- **1 ft Freeboard**
- **Safety Volume**: 25-year-24-hour storm
- **Storage Volume**: Wastewater Flows and 1-in-10 year Rainfall minus Evaporation
- **Bottom Seal Protection**: Treatment and Sludge Storage
- **Water Surface Area**

**Additional comments:**

- **Emergency Overflow**
- **Top at Berm**
- **2 ft Freeboard**
- **Safety Volume**: 25-year-24-hour storm
- **Storage Volume**: Wastewater Flows and 1-in-10 year Rainfall minus Evaporation
- **Bottom Seal Protection**: Treatment and Sludge Storage
- **Top Surface Area at inside top of berm**

**Total depth:**

- **15 ft**
NOTES: Tract 928 Field 1 (28 Acres ML)
NOTES: Tract 931 Fields 9 and 23 (103 Acres M/L)
**Facility Description (continued)**

**Outfall #001 - Irrigation System Design**

**Receiving Stream Watershed:** a gaining stream setting that flows to a 303(d) listed stream.

**Facility Type:** No-discharge Storage and Irrigation System for year round flows into lagoon.

<table>
<thead>
<tr>
<th>Design Basis</th>
<th>Avg Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design dry weather flows</td>
<td>30,000 gpd</td>
</tr>
<tr>
<td>Design with 1-in-10 year flows</td>
<td>28,956 gpd</td>
</tr>
<tr>
<td>Design PF</td>
<td>6,250</td>
</tr>
</tbody>
</table>

*312 days of production per year

**Storm Water Flows:** (Moniteau County)

<table>
<thead>
<tr>
<th>Average Annual Rainfall</th>
<th>38.0 inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-in-10 Year Annual Rainfall</td>
<td>30.0 inches</td>
</tr>
</tbody>
</table>

25-year-24-hour storm: 5.2 inches

<table>
<thead>
<tr>
<th>1-in-10 year Flows:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Runoff concrete and roof areas</td>
<td>0 ft.</td>
</tr>
<tr>
<td>Runoff earth areas (lagoon berms, losses, etc)</td>
<td>0 ft.</td>
</tr>
<tr>
<td>Rainfall minus Evaporation (R-E) on lagoon water surface</td>
<td>1.4 ft.</td>
</tr>
</tbody>
</table>

**Lagoon Dimensions:**

<table>
<thead>
<tr>
<th>Lagoon Cell 1</th>
<th>Lagoon Cell 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Line Top Berm:</td>
<td>74,470 sq.ft. 15 feet depth</td>
</tr>
<tr>
<td>Storage volume (minimum to maximum water levels):</td>
<td>3,634,828 gallons</td>
</tr>
<tr>
<td>1-in-10 year Annual Storm water flows into lagoon (R-E):</td>
<td>104,258 cu. ft (779,954 gal)</td>
</tr>
</tbody>
</table>

**Storage Capacity:**

<table>
<thead>
<tr>
<th>Days of Storage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Design for Dry weather Flows:</td>
<td>182 days</td>
</tr>
<tr>
<td>Design with 1-in-10 year flows:</td>
<td>155 days</td>
</tr>
</tbody>
</table>

**Land Application:**

<table>
<thead>
<tr>
<th>Irrigation Volume /year:</th>
<th>10,568,944 gallons (including 1-in-10 year flows)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigation areas:</td>
<td>36 acres at design loading (85 acres total available)</td>
</tr>
<tr>
<td>Application rates acre:</td>
<td>0.5 inch/hour: 1.5 inch/day; 4.5 inches/week; 11.0 inches/year</td>
</tr>
<tr>
<td>Field slopes:</td>
<td>less than 12.0 percent</td>
</tr>
<tr>
<td>Equipment type:</td>
<td>traveling gun</td>
</tr>
<tr>
<td>Vegetation:</td>
<td>grass land</td>
</tr>
<tr>
<td>Application rate is based on:</td>
<td>hydraulic loading rate</td>
</tr>
</tbody>
</table>
Soil Map—Moniteau County, Missouri
(Tract 228 Field 1 (28 Acres MIL))

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot

Water Features
- Streams and Canals

Transportation
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography
- Special Line Features

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)
Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Moniteau County, Missouri
Survey Area Data: Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
# Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>73952</td>
<td>Wrengart silt loam, 3 to 8 percent slopes</td>
<td>22.3</td>
<td>77.4%</td>
</tr>
<tr>
<td>73977</td>
<td>Wrengart silt loam, 8 to 15 percent slopes, eroded</td>
<td>6.5</td>
<td>22.6%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>28.8</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Irrigation, General—Monteau County, Missouri
(Tract 928 Field 1 (28 Acres MA))
### MAP LEGEND

<table>
<thead>
<tr>
<th>Soll Rating Polygons</th>
<th>Soll Rating Lines</th>
<th>Soll Rating Points</th>
<th>Water Features</th>
<th>Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very limited</td>
<td>Very limited</td>
<td>Very limited</td>
<td>Streams and Canals</td>
<td>Rails</td>
</tr>
<tr>
<td>Somewhat limited</td>
<td>Somewhat limited</td>
<td>Somewhat limited</td>
<td></td>
<td>Interstate Highways</td>
</tr>
<tr>
<td>Not limited</td>
<td>Not limited</td>
<td>Not limited</td>
<td></td>
<td>US Routes</td>
</tr>
<tr>
<td>Not rated or not available</td>
<td>Not rated or not available</td>
<td>Not rated or not available</td>
<td></td>
<td>Major Roads</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Local Roads</td>
</tr>
</tbody>
</table>

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

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**Source of Map:** Natural Resources Conservation Service  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

**Soil Survey Area:** Moniteau County, Missouri  
**Survey Area Data:** Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

**Date(s) aerial images were photographed:** Apr 5, 2011—Aug 26, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
# Irrigation, General

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Component name (percent)</th>
<th>Rating reasons (numeric values)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>73592</td>
<td>Wrengart silt loam, 3 to 8 percent slopes</td>
<td>Somewhat limited</td>
<td>Wrengart (95%)</td>
<td>Slope (0.26)</td>
<td>22.3</td>
<td>77.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73977</td>
<td>Wrengart silt loam, 8 to 15 percent slopes, eroded</td>
<td>Somewhat limited</td>
<td>Wrengart (80%)</td>
<td>Slope (0.81)</td>
<td>6.5</td>
<td>22.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>23.8</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

## Irrigation, General—Summary by Rating Value

<table>
<thead>
<tr>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat limited</td>
<td>23.8</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td><strong>23.8</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Description

This interpretation evaluates a soil's limitation(s) for installation and use of irrigation systems. This interpretation is for non-specific irrigation methods and is intended to provide initial planning information. If the type of irrigation system has been determined, additional interpretations provide more specific information. This interpretation does not apply if the crop planned for irrigation is rice or other crops (such as cranberries) with unique plant physiological characteristics. The ratings are for soils in their natural condition and do not consider present land use.

Irrigation systems are used to provide supplemental water to crops, orchards, vineyards, and vegetables in areas where natural precipitation will not support desired production of crops being grown.

The soil properties and qualities important in design and management of irrigation systems are sodium adsorption ratio, depth to high water table, available water holding capacity, saturated hydraulic conductivity (Ksat), slope, calcium carbonate content, ponding, and flooding. Soil properties and qualities that influence installation are stones, depth to bedrock or cemented pan, and depth to a high water table. The properties and qualities that affect performance of the irrigation system are depth to bedrock or to a cemented pan, the sodium adsorption ratio, salinity, and soil reaction.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the interpretation. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms indicate the extent to which the soils are limited by the soil features that affect the soil interpretation. Verbal soil rating classes are based on the highest numerical rating for the most limiting soil feature(s) considered in the rating process. "Not limited" (numerical value for the most restrictive feature = 0.00) indicates that the soil has no limiting features for the specified use. "Somewhat limited" (numerical value for the most restrictive feature = .01 to .99) indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

"Very limited" (numerical value for the most restrictive feature = 1.00) indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

"Not limited" (numerical value for the most restrictive feature = 0.00) indicates that the soil has no limiting features for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" (numerical value for the most restrictive feature = .01 to .99) indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.
very limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

The results of this interpretation are not designed or intended to be used in a regulatory manner.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher
The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Moniteau County, Missouri
Survey Area Data: Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
## Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name Description</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>96130</td>
<td>Moniteau silt loam, 1 to 3 percent slopes, rarely flooded</td>
<td>0.0</td>
<td>0.1%</td>
</tr>
<tr>
<td>73692</td>
<td>Wrensnart silt loam, 3 to 8 percent slopes</td>
<td>6.2</td>
<td>43.0%</td>
</tr>
<tr>
<td>73977</td>
<td>Wrensnart silt loam, 8 to 15 percent slopes, eroded</td>
<td>8.2</td>
<td>56.9%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>14.4</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Irrigation, General—Monteau County, Missouri
(Tract 031 Field 8 (17 Acres ML))
Irrigation, General—Moniteau County, Missouri
(Tract 531 Field 8 (17 Acres M/L))

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)
- Aerial Photography

Soils

- Soil Rating Polygons
  - Very limited
  - Somewhat limited
  - Not limited
  - Not rated or not available

- Soil Rating Lines
  - Very limited
  - Somewhat limited
  - Not limited
  - Not rated or not available

- Soil Rating Points
  - Very limited
  - Somewhat limited
  - Not limited
  - Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Moniteau County, Missouri
Survey Area Data: Version 12, Dec 13, 2013

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Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

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## Irrigation, General

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Component name (percent)</th>
<th>Rating reason (numeric values)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>66130</td>
<td>Montiteau silt loam, 1 to 3 percent slopes, rarely flooded</td>
<td>Somewhat limited</td>
<td>Montiteau (90%)</td>
<td>Too acid (0.22)</td>
<td>0.0</td>
<td>0.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Arbela (2%)</td>
<td>Rapid water movement (0.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Slope (0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Occasional flooding (0.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too acid (0.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73592</td>
<td>Wrengart silt loam, 3 to 8 percent slopes</td>
<td>Somewhat limited</td>
<td>Wrengart (65%)</td>
<td>Slope (0.26)</td>
<td>6.2</td>
<td>43.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73677</td>
<td>Wrengart silt loam, 8 to 15 percent slopes, eroded</td>
<td>Somewhat limited</td>
<td>Wrengart (80%)</td>
<td>Slope (0.91)</td>
<td>8.2</td>
<td>56.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>14.4</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Irrigation, General—Summary by Rating Value

<table>
<thead>
<tr>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat limited</td>
<td>14.4</td>
<td>100.0%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td>14.4</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Description

This interpretation evaluates a soil's limitation(s) for installation and use of irrigation systems. This interpretation is for non-specific irrigation methods and is intended to provide initial planning information. If the type of irrigation system has been determined, additional interpretations provide more specific information. This interpretation does not apply if the crop planned for irrigation is rice or other crops (such as cranberries) with unique plant physiological characteristics. The ratings are for soils in their natural condition and do not consider present land use.

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The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the interpretation. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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very limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

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Rating Options

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher
Soil Map—Moniteau County, Missouri
(Tract 931 Fields 2 and 3 (22 Acres M/L))

### MAP LEGEND
- **Area of Interest (AOI)**
- **Soils**
  - Soil Map Unit Polygons
  - Soil Map Unit Lines
  - Soil Map Unit Points
- **Special Point Features**
  - Blowout
  - Borrow Pit
  - Clay Spot
  - Closed Depression
  - Gravel Pit
  - Gravely Spot
  - Landfill
  - Lava Flow
  - Marsh or swamp
  - Mine or Quarry
  - Miscellaneous Water
  - Perennial Water
  - Rock Outcrop
  - Saline Spot
  - Sandy Spot
  - Severely Eroded Spot
  - Sinkhole
  - Slide or Slip
  - Sodic Spot
- **Water Features**
  - Streams and Canals
- **Transportation**
  - Interstate Highways
  - US Routes
  - Major Roads
  - Local Roads
- **Background**
  - Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

**Source of Map:** Natural Resources Conservation Service


**Coordinate System:** Web Mercator (EPSG:3857)

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**Soil Survey Area:** Moniteau County, Missouri

**Survey Area Data:** Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

**Date(s) aerial images were photographed:** Apr 5, 2011—Aug 25, 2011

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# Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>73255</td>
<td>Ocle very gravelly silt loam, 15 to 35 percent slopes, extremely stony</td>
<td>0.4</td>
<td>1.7%</td>
</tr>
<tr>
<td>73592</td>
<td>Wrangart silt loam, 3 to 8 percent slopes</td>
<td>9.6</td>
<td>45.2%</td>
</tr>
<tr>
<td>73977</td>
<td>Wrangart silt loam, 8 to 15 percent slopes, eroded</td>
<td>11.2</td>
<td>53.1%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>21.2</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**Tract 931 Fields 2 and 3 (22 Acres M/L)**
Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Moniteau County, Missouri
Survey Area Data: Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
## Irrigation, General

### Irrigation, General—Summary by Map Unit—Moniteau County, Missouri (MO135)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Component name (percent)</th>
<th>Rating reasons (numeric values)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>73255</td>
<td>Oole very gravelly silt loam, 15 to 35 percent slopes, extremely stony</td>
<td>Very limited</td>
<td>Oole (85%)</td>
<td>Slope (1.00)</td>
<td>0.4</td>
<td>1.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Large surface stones (1.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low water holding capacity (0.15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Depth to hard bedrock (0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73592</td>
<td>Wrangar silt loam, 3 to 8 percent slopes</td>
<td>Somewhat limited</td>
<td>Wrangar (85%)</td>
<td>Slope (0.26)</td>
<td>9.8</td>
<td>45.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73977</td>
<td>Wrangar silt loam, 8 to 15 percent slopes, eroded</td>
<td>Somewhat limited</td>
<td>Wrangar (80%)</td>
<td>Slope (0.91)</td>
<td>11.2</td>
<td>53.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21.2</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Irrigation, General—Summary by Rating Value

<table>
<thead>
<tr>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat limited</td>
<td>20.8</td>
<td>98.3%</td>
</tr>
<tr>
<td>Very limited</td>
<td>0.4</td>
<td>1.7%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td>21.2</td>
<td>100.0%</td>
</tr>
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</table>
Description

This interpretation evaluates a soil's limitation(s) for installation and use of irrigation systems. This interpretation is for non-specific irrigation methods and is intended to provide initial planning information. If the type of irrigation system has been determined, additional interpretations provide more specific information. This interpretation does not apply if the crop planned for irrigation is rice or other crops (such as cranberries) with unique plant physiological characteristics. The ratings are for soils in their natural condition and do not consider present land use.

Irrigation systems are used to provide supplemental water to crops, orchards, vineyards, and vegetables in areas where natural precipitation will not support desired production of crops being grown.

The soil properties and qualities important in design and management of irrigation systems are sodium adsorption ratio, depth to high water table, available water holding capacity, saturated hydraulic conductivity (Ksat), slope, calcium carbonate content, ponding, and flooding. Soil properties and qualities that influence installation are stones, depth to bedrock or cemented pan, and depth to a high water table. The properties and qualities that affect performance of the irrigation system are depth to bedrock or to a cemented pan, the sodium adsorption ratio, salinity, and soil reaction.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the interpretation. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms indicate the extent to which the soils are limited by the soil features that affect the soil interpretation. Verbal soil rating classes are based on the highest numerical rating for the most limiting soil feature(s) considered in the rating process. "Not limited" (numerical value for the most restrictive feature = 0.00) indicates that the soil has no limiting features for the specified use. "Somewhat limited" (numerical value for the most restrictive feature = 0.01 to .99) indicates that the soil has limiting features for the specified use that can be overcome with proper planning, design, installation, and management. The effort required to overcome a soil limitation increases as the numerical rating increases. "Very limited" (numerical value for the most restrictive feature = 1.00) indicates that the soil has one or more
very limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

The results of this interpretation are not designed or intended to be used in a regulatory manner.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

**Rating Options**

*Aggregation Method:* Dominant Condition  
*Component Percent Cutoff:* None Specified  
*Tie-break Rule:* Higher
Soil Map—Moniteau County, Missouri
(Tract 931 Fields 4 and 5 (21 Acres Mil))

MAP LEGEND

Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot

Water Features

- Special Line Features

Transportation

- Streams and Canals
- Rail(s)
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Moniteau County, Missouri
Survey Area Date: Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
### Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres In AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>66130</td>
<td>Moniteau silt loam, 1 to 3 percent slopes, rarely flooded</td>
<td>0.1</td>
<td>0.3%</td>
</tr>
<tr>
<td>73592</td>
<td>Wrangert silt loam, 3 to 8 percent slopes</td>
<td>4.4</td>
<td>22.0%</td>
</tr>
<tr>
<td>73977</td>
<td>Wrangert silt loam, 8 to 15 percent slopes, eroded</td>
<td>13.2</td>
<td>65.6%</td>
</tr>
<tr>
<td>75378</td>
<td>Sturkie silt loam, 0 to 2 percent slopes, frequently flooded</td>
<td>2.4</td>
<td>12.1%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>20.2</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)
- Aerial Photography

Soils

Soil Rating Polygons
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Somewhat limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 12, Dec 13, 2013

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Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

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## Irrigation, General

### Irrigation, General—Summary by Map Unit — Moniteau County, Missouri (MO136)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Component name (percent)</th>
<th>Rating reasons (numeric values)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>66130</td>
<td>Moniteau silt loam, 1 to 3 percent slopes, rarely flooded</td>
<td>Somewhat limited</td>
<td>Moniteau (90%)</td>
<td>Too acid (0.22)</td>
<td>0.1</td>
<td>0.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Slope (0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Arbela (2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Occasional flooding (0.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too acid (0.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73592</td>
<td>Wrengart silt loam, 3 to 8 percent slopes</td>
<td>Somewhat limited</td>
<td>Wrengart (95%)</td>
<td>Slope (0.26)</td>
<td>4.4</td>
<td>22.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73977</td>
<td>Wrengart silt loam, 8 to 15 percent slopes, eroded</td>
<td>Somewhat limited</td>
<td>Wrengart (80%)</td>
<td>Slope (0.91)</td>
<td>13.2</td>
<td>66.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75378</td>
<td>Sturkie silt loam, 0 to 2 percent slopes, frequently flooded</td>
<td>Somewhat limited</td>
<td>Sturkie (90%)</td>
<td>Frequent or very frequent flooding (0.70)</td>
<td>2.4</td>
<td>12.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Racoon (5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Occasional flooding (0.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too acid (0.08)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Totals for Area of Interest: 20.2  100.0%

### Irrigation, General—Summary by Rating Value

<table>
<thead>
<tr>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat limited</td>
<td>20.2</td>
<td>100.0%</td>
</tr>
<tr>
<td>Totals for Area of Interest</td>
<td>20.2</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Description

This interpretation evaluates a soil's limitation(s) for installation and use of irrigation systems. This interpretation is for non-specific irrigation methods and is intended to provide initial planning information. If the type of irrigation system has been determined, additional interpretations provide more specific information. This interpretation does not apply if the crop planned for irrigation is rice or other crops (such as cranberries) with unique plant physiological characteristics. The ratings are for soils in their natural condition and do not consider present land use.

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The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the interpretation. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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The results of this interpretation are not designed or intended to be used in a regulatory manner.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition
Component Percent Cutoff: None Specified
Tie-break Rule: Higher
Soil Map—Moniteau County, Missouri
(Tract 932 Fields 6 and 7 (28 Acres ML))

MAP LEGEND

Area of Interest (AOI)

\[\begin{array}{c}
\square \\
\text{Area of Interest (AOI)}
\end{array}\]

Soils

\[\begin{array}{c}
\square \\
\text{Soil Map Unit Polygons}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Soil Map Unit Lines}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Soil Map Unit Points}
\end{array}\]

Special Point Features

\[\begin{array}{c}
\square \\
\text{Blowout}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Borrow Pit}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Clay Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Closed Depression}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Gravel Pit}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Gravely Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Landfill}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Lava Flow}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Marsh or swamp}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Mine or Quarry}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Miscellaneous Water}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Perennial Water}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Rock Outcrop}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Saline Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Sandy Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Severely Eroded Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Sinkhole}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Slide or Slip}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Sodic Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Spill Area}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Stony Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Very Stony Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Wet Spot}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Other}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Special Line Features}
\end{array}\]

Water Features

\[\begin{array}{c}
\square \\
\text{Streams and Canals}
\end{array}\]

Transportation

\[\begin{array}{c}
\square \\
\text{Interstate Highways}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{US Routes}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Major Roads}
\end{array}\]

\[\begin{array}{c}
\square \\
\text{Local Roads}
\end{array}\]

Background

\[\begin{array}{c}
\square \\
\text{Aerial Photography}
\end{array}\]

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Moniteau County, Missouri
Survey Area Date: Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

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### Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>66000</td>
<td>Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded</td>
<td>8.5</td>
<td>32.0%</td>
</tr>
<tr>
<td>73591</td>
<td>Pomme silt loam, 3 to 8 percent slopes, eroded</td>
<td>3.9</td>
<td>14.5%</td>
</tr>
<tr>
<td>73977</td>
<td>Wrengart silt loam, 8 to 15 percent slopes, eroded</td>
<td>1.5</td>
<td>5.5%</td>
</tr>
<tr>
<td>75378</td>
<td>Sturkie silt loam, 0 to 2 percent slopes, frequently flooded</td>
<td>12.7</td>
<td>48.0%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>26.5</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Irrigation, General—Monteau County, Missouri (Tract 932 Fields 6 and 7 (28 Acres ML))

MAP LEGEND

Area of Interest (AOI)

Soils

Soil Rating Polygons

Very limited

Somewhat limited

Not limited

Not rated or not available

Soil Rating Lines

Very limited

Somewhat limited

Not limited

Not rated or not available

Soil Rating Points

Very limited

Somewhat limited

Not limited

Not rated or not available

Water Features

Streams and Canals

Transportation

Rail

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Monteau County, Missouri
Survey Area Data: Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

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## Irrigation, General

### Irrigation, General—Summary by Map Unit—Moniteau County, Missouri (NO138)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Component name (percent)</th>
<th>Rating reasons (numeric values)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>66000</td>
<td>Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded</td>
<td>Somewhat limited</td>
<td>Moniteau (90%)</td>
<td>Occasional flooding (0.40)</td>
<td>8.5</td>
<td>32.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too acid (0.22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73591</td>
<td>Pomme silt loam, 3 to 8 percent slopes, eroded</td>
<td>Somewhat limited</td>
<td>Pomme (90%)</td>
<td>Slope (0.26)</td>
<td>3.9</td>
<td>14.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73977</td>
<td>Wrengart silt loam, 8 to 15 percent slopes, eroded</td>
<td>Somewhat limited</td>
<td>Wrengart (80%)</td>
<td>Slope (0.91)</td>
<td>1.5</td>
<td>5.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75378</td>
<td>Sturkie silt loam, 0 to 2 percent slopes, frequently flooded</td>
<td>Somewhat limited</td>
<td>Sturkie (90%)</td>
<td>Frequent or very frequent flooding (0.70)</td>
<td>12.7</td>
<td>48.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Racoon (5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Occasional flooding (0.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too acid (0.08)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Totals for Area of Interest

- Acres in AOI: 26.5
- Percent of AOI: 100.0%

### Irrigation, General—Summary by Rating Value

<table>
<thead>
<tr>
<th>Rating</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somewhat limited</td>
<td>26.5</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Totals for Area of Interest

- Acres in AOI: 26.5
- Percent of AOI: 100.0%
Description

This interpretation evaluates a soil's limitation(s) for installation and use of irrigation systems. This interpretation is for non-specific irrigation methods and is intended to provide initial planning information. If the type of irrigation system has been determined, additional interpretations provide more specific information. This interpretation does not apply if the crop planned for irrigation is rice or other crops (such as cranberries) with unique plant physiological characteristics. The ratings are for soils in their natural condition and do not consider present land use.

Irrigation systems are used to provide supplemental water to crops, orchards, vineyards, and vegetables in areas where natural precipitation will not support desired production of crops being grown.

The soil properties and qualities important in design and management of irrigation systems are sodium adsorption ratio, depth to high water table, available water holding capacity, saturated hydraulic conductivity (Ksat), slope, calcium carbonate content, ponding, and flooding. Soil properties and qualities that influence installation are stones, depth to bedrock or cemented pan, and depth to a high water table. The properties and qualities that affect performance of the irrigation system are depth to bedrock or to a cemented pan, the sodium adsorption ratio, salinity, and soil reaction.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the interpretation. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms indicate the extent to which the soils are limited by the soil features that affect the soil interpretation. Verbal soil rating classes are based on the highest numerical rating for the most limiting soil feature(s) considered in the rating process. "Not limited" (numerical value for the most restrictive feature = 0.00) indicates that the soil has no limiting features for the specified use. "Somewhat limited" (numerical value for the most restrictive feature = 0.01 to .99) indicates that the soil has limiting features for the specified use that can be overcome with proper planning, design, installation, and management. The effort required to overcome a soil limitation increases as the numerical rating increases. "Very limited" (numerical value for the most restrictive feature = 1.00) indicates that the soil has one or more
very limiting features that can only be overcome with special planning, major soil modification, special design, or significant management practices.

Lesser soil restrictive features have a lower numerical value than the maximum used to rate the soil, and they are identified to provide the user with additional information about soil limitations for the specific use. Lesser soil restrictive features also need to be considered in planning, design, installation, and management.

The results of this interpretation are not designed or intended to be used in a regulatory manner.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

**Rating Options**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher
Soil Map—Moniteau County, Missouri
(Tract 931 Fields 9 and 23 (103 Acres ML))

**MAP LEGEND**

<table>
<thead>
<tr>
<th>Feature Type</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area of Interest (AOI)</td>
<td>□</td>
</tr>
<tr>
<td>Soil Map Unit Polygons</td>
<td>○</td>
</tr>
<tr>
<td>Soil Map Unit Lines</td>
<td>—</td>
</tr>
<tr>
<td>Soil Map Unit Points</td>
<td>•</td>
</tr>
<tr>
<td>Special Point Features</td>
<td>○</td>
</tr>
<tr>
<td>Blowout</td>
<td>☀</td>
</tr>
<tr>
<td>Borrow Pit</td>
<td>☑</td>
</tr>
<tr>
<td>Clay Spot</td>
<td>◦</td>
</tr>
<tr>
<td>Closed Depression</td>
<td>☎</td>
</tr>
<tr>
<td>Gravel Pit</td>
<td>☎</td>
</tr>
<tr>
<td>Gravelly Spot</td>
<td>◆</td>
</tr>
<tr>
<td>Landfill</td>
<td>●</td>
</tr>
<tr>
<td>Lava Flow</td>
<td>☜</td>
</tr>
<tr>
<td>Marsh or swamp</td>
<td>☞</td>
</tr>
<tr>
<td>Mine or Quarry</td>
<td>☠</td>
</tr>
<tr>
<td>Miscellaneous Water</td>
<td>☯</td>
</tr>
<tr>
<td>Perennial Water</td>
<td>☯</td>
</tr>
<tr>
<td>Rock Outcrop</td>
<td>☯</td>
</tr>
<tr>
<td>Saline Spot</td>
<td>☯</td>
</tr>
<tr>
<td>Sandy Spot</td>
<td>☯</td>
</tr>
<tr>
<td>Severely Eroded Spot</td>
<td>☯</td>
</tr>
<tr>
<td>Sinkhole</td>
<td>☯</td>
</tr>
<tr>
<td>Slide or Slip</td>
<td>☯</td>
</tr>
<tr>
<td>Sodic Spot</td>
<td>☯</td>
</tr>
<tr>
<td>Spoil Area</td>
<td>□</td>
</tr>
<tr>
<td>Stony Spot</td>
<td>○</td>
</tr>
<tr>
<td>Very Stony Spot</td>
<td>◎</td>
</tr>
<tr>
<td>Wet Spot</td>
<td>△</td>
</tr>
<tr>
<td>Other</td>
<td>＜</td>
</tr>
<tr>
<td>Special Line Features</td>
<td>・</td>
</tr>
<tr>
<td>Streams and Canals</td>
<td>—</td>
</tr>
<tr>
<td>Rails</td>
<td>++</td>
</tr>
<tr>
<td>Interstate Highways</td>
<td>—</td>
</tr>
<tr>
<td>US Routes</td>
<td>—</td>
</tr>
<tr>
<td>Major Roads</td>
<td>—</td>
</tr>
<tr>
<td>Local Roads</td>
<td>—</td>
</tr>
<tr>
<td>Aerial Photography</td>
<td>■</td>
</tr>
</tbody>
</table>

**MAP INFORMATION**

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale. Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Moniteau County, Missouri
Survey Area Data: Version 12, Dec 13, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 5, 2011—Aug 25, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
# Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>56000</td>
<td>Moniteau silt loam, 0 to 2 percent slopes, frequently flooded</td>
<td>17.9</td>
<td>18.1%</td>
</tr>
<tr>
<td>60162</td>
<td>McGirk silt loam, 2 to 5 percent slopes, eroded</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>66000</td>
<td>Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded</td>
<td>28.1</td>
<td>28.6%</td>
</tr>
<tr>
<td>73255</td>
<td>Osce very gravely silt loam, 15 to 35 percent slopes, extremely stony</td>
<td>0.1</td>
<td>0.1%</td>
</tr>
<tr>
<td>73592</td>
<td>Wrengart silt loam, 3 to 8 percent slopes</td>
<td>0.9</td>
<td>0.9%</td>
</tr>
<tr>
<td>75378</td>
<td>Sturkie silt loam, 0 to 2 percent slopes, frequently flooded</td>
<td>51.4</td>
<td>52.2%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>98.4</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>
Irrigation, General—Moniteau County, Missouri
(Tract 931 Fields 9 and 23 (103 Acres M/L))

MAP LEGEND

<table>
<thead>
<tr>
<th>Area of Interest (AOI)</th>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aerial Photography</td>
</tr>
</tbody>
</table>

Soils

| Soils Rating Polygons | | |
|-----------------------|---|
| Very limited          | |
| Somewhat limited      | |
| Not limited           | |
| Not rated or not available | |

Soils Rating Lines

| Soil Rating Points | | |
|--------------------|---|
| Very limited       | |
| Somewhat limited   | |
| Not limited        | |
| Not rated or not available | |

Water Features

| Water Features | | |
|----------------|---|
| Streams and Canals | |

Transportation

<table>
<thead>
<tr>
<th>Transportation</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Rails</td>
<td></td>
</tr>
<tr>
<td>Interstate Highways</td>
<td></td>
</tr>
<tr>
<td>US Routes</td>
<td></td>
</tr>
<tr>
<td>Major Roads</td>
<td></td>
</tr>
<tr>
<td>Local Roads</td>
<td></td>
</tr>
</tbody>
</table>

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Coordinate System: Web Mercator (EPSG:3857)

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## Irrigation, General

### Table: Irrigation, General - Summary by Map Unit — Moniteau County, Missouri (MO135)

<table>
<thead>
<tr>
<th>Map unit symbol</th>
<th>Map unit name</th>
<th>Rating</th>
<th>Component name (percent)</th>
<th>Rating reasons (numeric values)</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>56000</td>
<td>Moniteau silt loam, 0 to 2 percent slopes, frequently flooded</td>
<td>Somewhat limited</td>
<td>Moniteau (90%)</td>
<td>Frequent or very frequent flooding (0.70)</td>
<td>17.2</td>
<td>18.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Arbeta (2%)</td>
<td>Occasional flooding (0.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too acid (0.22)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80182</td>
<td>McGirk silt loam, 2 to 5 percent slopes, eroded</td>
<td>Somewhat limited</td>
<td>McGirk (90%)</td>
<td>Slope (0.09)</td>
<td>0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>88000</td>
<td>Moniteau silt loam, 0 to 2 percent slopes, occasionally flooded</td>
<td>Somewhat limited</td>
<td>Moniteau (90%)</td>
<td>Occasional flooding (0.40)</td>
<td>28.1</td>
<td>28.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Too acid (0.22)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rapid water movement (0.03)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73255</td>
<td>Ocie very gravelly silt loam, 15 to 35 percent slopes, extremely stony</td>
<td>Very limited</td>
<td>Ocie (85%)</td>
<td>Slope (1.00)</td>
<td>0.1</td>
<td>0.1%</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Large surface stones (1.00)</td>
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<td></td>
<td>Rapid water movement (0.89)</td>
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<td>Low water holding capacity (0.15)</td>
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<td></td>
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<td></td>
<td></td>
<td>Depth to hard bedrock (0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73592</td>
<td>Wrengart silt loam, 3 to 8 percent slopes</td>
<td>Somewhat limited</td>
<td>Wrengart (95%)</td>
<td>Slope (0.26)</td>
<td>0.9</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

*Note: AOI stands for Area of Interest.*