MISSOURI STATE OPERATING PERMIT

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

Permit No. MO-0028789
Owner: City of Centralia
Address: 114 South Rollins St, Centralia, MO 65240
Continuing Authority: Same as above
Address: Same as above
Facility Name: Centralia Wastewater Treatment Facility
Facility Address: 0.25 miles east of March Road and Fountain Street intersection, Centralia, MO 65240
Legal Description: See Page 2
UTM Coordinates: See Page 2
Receiving Stream: See Page 2
First Classified Stream and ID: See Page 2
USGS Basin & Sub-watershed No.: See Page 2

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

FACILITY DESCRIPTION

See Page 2

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

March 1, 2018
Effective Date
Edward B. Galbraith, Director, Division of Environmental Quality

December 31, 2021
Expiration Date
Chris Wieberg, Director, Water Protection Program
FACILITY DESCRIPTION (continued):

Outfall #001 – POTW – SIC #4952 – Northwest System

The use or operation of this facility shall be by or under the supervision of a Certified “D” Operator.

Two cell lagoon / partial irrigation / can be pumped to the lagoon system at Outfall #002 / sludge is retained in lagoon or land applied.

Design population equivalent is 1,460.

Design flow is 146,000 gallons per day.

Actual flow is 97,000 gallons per day.

Design sludge production is 22 dry tons/year.

Legal Description: Sec. 9, T51N, R11W, Boone County

UTM Coordinates: X=572996, Y=4342150

Receiving Stream: Tributary to Goodwater Creek

First Classified Stream and ID: 8-20-13 MUD V1.0 (C) (3960)

USGS Basin & Sub-watershed No.: (07110006-0102)

Outfall #002 – Northeast System

Two-cell lagoon / partial irrigation / can be pumped to the lagoon at Outfall #001 or can flow to outfall #6 / sludge is retained in lagoon or land applied.

Design population equivalent is 6,600.

Design flow is 660,000 gallons per day.

Actual flow is 463,000 gallons per day.

Design sludge production is 99 dry tons/year.

Legal Description: Sec. 12, T51N, R11W, Audrain County

UTM Coordinates: X=577864, Y=4341338

Receiving Stream: Tributary to Youngs Creek

First Classified Stream and ID: 8-20-13 MUD V1.0 (C) (3960)

USGS Basin & Sub-watershed No.: (07110006-0103)

Outfall #001 & #002

**Design Basis:**

<table>
<thead>
<tr>
<th>Design Basis</th>
<th>Avg. Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design dry weather flows:</td>
<td>806,000 gpd</td>
</tr>
<tr>
<td>Design with 1-in-10 year flows:</td>
<td>1,000,000 gpd</td>
</tr>
<tr>
<td>Design PE:</td>
<td>8.060</td>
</tr>
</tbody>
</table>

**Storage Basins (also includes remote storage at 003, 004 & 005):**

| Freeboard for basins:            | 2 foot               |
| Storage volume (minimum to maximum water levels): | 200,613,600 Gallons |

**Storage Capacity (in Days; also includes remote storage at 003, 004 & 005):**

| Design for Dry Weather Flows      | 249 days (total storage volume / design dry weather flow) |
| Design with 1-in 10 year flows:  | 200 days (total storage volume / design dry weather flow + 1-in-10 year flows) |
FACILITY DESCRIPTION (continued):

Permitted Feature #003 – Sims Storage Cell
Single-cell storage basin for wastewater irrigation / stores effluent pumped from Outfalls #001 & #002
46,376,000 gallons total volume / 21.9 acres / minimum water level is 12 feet (below overflow level)

Legal Description: Sec. 25, T52N, R12W, Audrain County
UTM Coordinates: X= 569041, Y=4346252
Receiving Stream: Tributary to Long Branch
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #004 – Bowne Storage Cell
Single-cell storage basin for wastewater irrigation / stores effluent pumped from Outfalls #001 & #002
11,968,000 gallons total volume / 5.32 acres / minimum water level is 10 feet (below overflow level)

Legal Description: Sec. 1, T51N, R12W, Boone County
UTM Coordinates: X= 568981, Y= 4343921
Receiving Stream: Tributary to Long Branch
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #005 – Benoit Storage Cell
Single-cell storage basin for wastewater irrigation / stores effluent pumped from Outfalls #001 & #002
20,944,000 gallons total volume / 4.99 acres / minimum water level is 14 feet (below overflow level)

Legal Description: Sec. 2, T51N, R11W, Boone County
UTM Coordinates: X= 575684, Y= 4343761
Receiving Stream: Tributary to Goodwater Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0102)

Outfall #006 – Northeast Lagoon Overland Flow System
Three – 3.73 acre (11.19 total acres) overland flow fields / flow is received from the Northeast Lagoon System (Outfall #002)

Legal Description: Sec. 12, T51N, R11W, Audrain County
UTM Coordinates: X= 577463, Y= 4341374
Receiving Stream: Tributary to Youngs Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0103)

Permitted Feature #007 – Center Pivot Wastewater Irrigation Field (~267 acres)

Legal Description: Sec. 26, T52N, R12W, Audrain County
UTM Coordinates: X=567004, Y=4346663
Receiving Stream: Tributary to Long Branch
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #008 – Center Pivot Wastewater Irrigation Field (~114 acres)

Legal Description: Sec. 25, T52N, R12W, Audrain County
UTM Coordinates: X=568015, Y=4346774
Receiving Stream: Tributary to Long Branch
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0101)
FACILITY DESCRIPTION (continued):

Permitted Feature #009 – Center Pivot Wastewater Irrigation Field (~110 acres)

- Legal Description: Sec. 36, T52N, R12W, Audrain County
- UTM Coordinates: X= 568791, Y=4345585
- Receiving Stream: Tributary to Long Branch
- First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
- USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #010 – Center Pivot Wastewater Irrigation Field (~114 acres)

- Legal Description: Sec. 30, T52N, R11W, Audrain County
- UTM Coordinates: X=569607, Y=4345975
- Receiving Stream: Tributary to Long Branch
- First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
- USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #011 – Center Pivot Wastewater Irrigation Field (~115 acres)

- Legal Description: Sec. 36, T52N, R12W, Audrain County
- UTM Coordinates: X=569151, Y=4344607
- Receiving Stream: Tributary to Long Branch
- First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
- USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #012 – Center Pivot Wastewater Irrigation Field (~116 acres)

- Legal Description: Sec. 31, T52N, R11W, Audrain County
- UTM Coordinates: X=569590, Y=4345175
- Receiving Stream: Tributary to Long Branch
- First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
- USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #013 – Center Pivot Wastewater Irrigation Field (~114 acres)

- Legal Description: Sec. 31, T52N, R11W, Audrain County
- UTM Coordinates: X=569569, Y=4344378
- Receiving Stream: Tributary to Long Branch
- First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
- USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #014 – Center Pivot Wastewater Irrigation Field (~108 acres)

- Legal Description: Sec. 1, T51N, R12W, Boone County
- UTM Coordinates: X=569133, Y=4343539
- Receiving Stream: Tributary to Long Branch
- First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
- USGS Basin & Sub-watershed No.: (07110006-0101)

Permitted Feature #015 – Center Pivot Wastewater Irrigation Field (~70 acres)

- Legal Description: Sec. 3, T51N, R11W, Boone County
- UTM Coordinates: X=574439, Y=4343739
- Receiving Stream: Tributary to Goodwater Creek
- First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
- USGS Basin & Sub-watershed No.: (07110006-0102)
FACILITY DESCRIPTION (continued):

Permitted Feature #016 – Center Pivot Wastewater Irrigation Field (~114 acres)

Legal Description: Sec. 3, T51N, R11W, Boone County
UTM Coordinates: X=575257, Y=4343415
Receiving Stream: Tributary to Goodwater Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0102)

Permitted Feature #017 – Center Pivot Wastewater Irrigation Field (~120 acres)

Legal Description: Sec. 2, T51N, R11W, Boone County
UTM Coordinates: X=576471, Y=4343390
Receiving Stream: Tributary to Goodwater Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0102)

Permitted Feature #018 – Center Pivot Wastewater Irrigation Field (~115 acres)

Legal Description: Sec. 2, T51N, R11W, Boone County
UTM Coordinates: X=576857, Y=4342587
Receiving Stream: Tributary to Youngs Creek
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110006-0103)

Wastewater Irrigation Design Parameters:

Irrigation Volume per year: 294,190,000 gallons (based on annual irrigation rate)
Irrigation areas: 382 acres at design loading (~1,460 acres total available)
Application rates: 0.5 inch/hour; 1.0 inch/day; 3.0 inches/week; 24 inches/year
Field slopes: Less than 5 percent
Equipment type: Center Pivot
Vegetation: Grass Hay / Row Crops
Application Rate is based on: Hydraulic Loading
### Table A-1. Interim Effluent Limitations and Monitoring Requirements

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on **March 1, 2018** and remain in effect through **February 28, 2022**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>INTERIM EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td>Flow (Note 2, Page 11)</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand (Note 2, Page 11)</td>
<td>mg/L</td>
<td>45 30</td>
<td>once/month grab</td>
</tr>
<tr>
<td>Total Suspended Solids (Note 2, Page 11)</td>
<td>mg/L</td>
<td>45 30</td>
<td>once/month grab</td>
</tr>
<tr>
<td>Ammonia as N (Note 2, Page 11) (Apr 1 – Sep 30) (Oct 1 – Mar 31)</td>
<td>mg/L</td>
<td>6.2 8.4</td>
<td>once/month grab</td>
</tr>
<tr>
<td>Total Phosphorus (Note 2, Page 11)</td>
<td>mg/L</td>
<td>* *</td>
<td>once/quarter****</td>
</tr>
<tr>
<td>Total Nitrogen (Note 2, Page 11)</td>
<td>mg/L</td>
<td>* *</td>
<td>once/quarter****</td>
</tr>
<tr>
<td>Oil &amp; Grease (Note 2, Page 11)</td>
<td>mg/L</td>
<td>15 10</td>
<td>once/quarter****</td>
</tr>
<tr>
<td>Cyanide, Amenable to Chlorination (Note 2, Page 11)</td>
<td>µg/L</td>
<td>* *</td>
<td>once/quarter****</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2018.** THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
<th>MEASUREMENT FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH – Units *** (Note 2, Page 11)</td>
<td>SU</td>
<td>6.5</td>
<td>9.0</td>
<td>once/month</td>
<td>grab</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2018.**

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>MONTHLY AVERAGE MINIMUM</th>
<th>MEASUREMENT FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical Oxygen Demand – Percent Removal (Note 4, Page 11)</td>
<td>%</td>
<td>65</td>
<td>once/month</td>
<td>calculated</td>
</tr>
<tr>
<td>Total Suspended Solids – Percent Removal (Note 4, Page 11)</td>
<td>%</td>
<td>65</td>
<td>once/month</td>
<td>calculated</td>
</tr>
</tbody>
</table>

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

* Monitoring requirement only.
** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
*** pH is measured in pH units and is not to be averaged.
**** See table below for quarterly sampling requirements.

<table>
<thead>
<tr>
<th><strong>Minimum Sampling Requirements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quarter</strong></td>
</tr>
<tr>
<td>First</td>
</tr>
<tr>
<td>Second</td>
</tr>
<tr>
<td>Third</td>
</tr>
<tr>
<td>Fourth</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 **March 1, 2022** 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 PARAMETER(S)</th>
<th>UNITS</th>
<th>FINAL EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow (Note 2, Page 11)</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand$_3$ (Note 2, Page 11)</td>
<td>mg/L</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>Total Suspended Solids (Note 2, Page 11)</td>
<td>mg/L</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>E. coli (Notes 1 &amp; 2, Page 11)</td>
<td>/100mL</td>
<td>1,030</td>
<td>206</td>
</tr>
<tr>
<td>Ammonia as N (Note 2, Page 11)</td>
<td>mg/L</td>
<td>3.6</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.5</td>
<td>2.9</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2022.** THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
<th>MEASUREMENT FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH – Units *** (Note 2, Page 11)</td>
<td>SU</td>
<td>6.5</td>
<td>9.0</td>
<td>once/month</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2022.**

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>MONTHLY AVERAGE</th>
<th>MEASUREMENT FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemical Oxygen Demand$_3$ – Percent Removal (Note 4, Page 11)</td>
<td>%</td>
<td>65</td>
<td>once/month</td>
</tr>
<tr>
<td>Total Suspended Solids – Percent Removal (Note 4, Page 11)</td>
<td>%</td>
<td>65</td>
<td>once/month</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2022.**

**Monitoring requirement only.**

**Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.**

**pH is measured in pH units and is not to be averaged.**

**See table below for quarterly sampling requirements.**

### Minimum Sampling Requirements

<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>
The permittee is authorized to conduct irrigation of wastewater as specified in the application for this permit. The final limitations shall become effective on **March 1, 2018** and remain in effect until expiration of the permit. The irrigation of wastewater shall be controlled, limited and monitored by the permittee as specified below:

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>FINAL LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td>Storage Basin Operational Monitoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Basin Freeboard $\Omega$</td>
<td>feet</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Precipitation</td>
<td>inches</td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>

* Monitoring requirement only.

$\Omega$ Storage Basin Freeboard shall be reported as storage basin water level in feet below the overflow level. Monitoring for each Permitted Feature shall be reported separately.

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2018.**
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective on **March 1, 2018** and remain in effect through **February 28, 2022**. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

**TABLE A-4. INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>INTERIM EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand$\text{$_{3}$}$</td>
<td>mg/L</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>Ammonia as N</td>
<td>mg/L</td>
<td>6.2</td>
<td>2.4</td>
</tr>
</tbody>
</table>

**AMMONIA AS N (APR 1 – SEP 30)**

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>INTERIM EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL PHOSPHORUS**

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>INTERIM EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

**TOTAL NITROGEN**

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>INTERIM EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**OIL & GREASE**

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>INTERIM EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PH – UNITS***

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
<th>MEASUREMENT FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SU</td>
<td>6.5</td>
<td>9.0</td>
<td>once/month</td>
<td>grab</td>
</tr>
</tbody>
</table>

**PH – UNITS***

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>MINIMUM</th>
<th>MAXIMUM</th>
<th>MEASUREMENT FREQUENCY</th>
<th>SAMPLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SU</td>
<td>6.5</td>
<td>9.0</td>
<td>once/month</td>
<td>grab</td>
</tr>
</tbody>
</table>

**MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2018. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.**

**MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2018.**

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

* Monitoring requirement only.
** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
*** pH is measured in pH units and is not to be averaged.
**** See table below for quarterly sampling requirements.

**Minimum Sampling Requirements**

<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>
TABLE A-5. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective on **March 1, 2022** 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 PARAMETER(S)</th>
<th>UNITS</th>
<th>FINAL EFFLUENT LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY MAXIMUM</td>
<td>WEEKLY AVERAGE</td>
</tr>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Biochemical Oxygen Demand$_3$</td>
<td>mg/L</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>Total Suspended Solids</td>
<td>mg/L</td>
<td>45</td>
<td>30</td>
</tr>
<tr>
<td>$E. coli$ (Note 1, Page 11)</td>
<td>#/100mL</td>
<td>1,030</td>
<td>206</td>
</tr>
<tr>
<td>Ammonia as N (Apr 1 – Sep 30)</td>
<td>mg/L</td>
<td>3.9</td>
<td>1.4</td>
</tr>
<tr>
<td>(Oct 1 – Mar 31)</td>
<td></td>
<td>7.2</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2022.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>mg/L</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>mg/L</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td><strong>MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE JULY 28, 2022.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH – Units ***</td>
<td>SU</td>
<td>6.5</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE APRIL 28, 2022.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biochemical Oxygen Demand$_3$ – Percent Removal (Note 4, Page 11)</td>
<td>%</td>
<td>85</td>
<td>once/month</td>
</tr>
<tr>
<td>Total Suspended Solids – Percent Removal (Note 4, Page 11)</td>
<td>%</td>
<td>85</td>
<td>once/month</td>
</tr>
</tbody>
</table>

* Monitoring requirement only.
** Once each weekday means: Monday, Tuesday, Wednesday, Thursday, and Friday.
*** pH is measured in pH units and is not to be averaged.
**** See table below for quarterly sampling requirements.

<table>
<thead>
<tr>
<th>Minimum Sampling Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>First</td>
</tr>
<tr>
<td>Second</td>
</tr>
<tr>
<td>Third</td>
</tr>
<tr>
<td>Fourth</td>
</tr>
</tbody>
</table>
PERMITTED FEATURES #007, #008, #009, #010, #011, #012, #013, #014, #015, #016, #017, & #018

<table>
<thead>
<tr>
<th>EFFLUENT PARAMETER(S)</th>
<th>UNITS</th>
<th>FINAL LIMITATIONS</th>
<th>MONITORING REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DAILY TOTAL</td>
<td>MONTHLY TOTAL</td>
</tr>
<tr>
<td>Wastewater Irrigation Operational Monitoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irrigation Period</td>
<td>hours</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Volume Irrigated</td>
<td>gallons</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Application Area</td>
<td>acres</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Application Rate</td>
<td>inches</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

* Monitoring requirement only.

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

Note 2 - Controlled discharges from Outfalls #001 and #002 shall be conducted according to the requirements of Special Condition #25.

Note 3 – The Acute WET test shall be conducted once per permit cycle for each outfall. See Special Condition #24 for additional requirements.

Note 4 – Influent sampling is not required during periods of wastewater irrigation when the facility does not discharge effluent, or when the facility does not discharge effluent during the reporting period (Report as No “Discharge”). Samples are to be collected prior to any treatment process. Percent removal is calculated by the following formula: \[ \text{Percent Removal} = \frac{\text{Influent} - \text{Effluent}}{\text{Influent}} \times 100\% \]

Note 5 – The Water Quality Based Effluent Limit for Cyanide amenable to chlorination was calculated to be 8.2 µg/L (daily maximum limit) and 4.1 µg/L (monthly average limit). These limits are below the minimum quantification level (ML) of the most common and practical EPA approved Cyanide amenable to chlorination methods. The Department has determined the current acceptable ML of Cyanide Amenable to Chlorination (CATC) to be 10 µg/L when using SM 4500-CN G, Cyanides Amenable to Chlorination after Distillation in Standard Methods for the Examination of Water and Wastewater, 22nd. The permittee will conduct analyses in accordance with this method, or equivalent, and report actual analytical values. Measured values greater than or equal to the minimum quantification level of 10 µg/L will be considered violations of the permit and values less than the minimum quantification level of 10 µg/L will be considered to be in compliance with the permit limitation. The minimum quantification level does not authorize the discharge of cyanide in excess of the effluent limits stated in the permit.
B. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations as soon as reasonably achievable or no later than 4 years of the effective date of this permit.

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.

2. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from effective date.

3. Within 4 years of the effective date of this permit, the permittee shall attain compliance with the final effluent limits.

Please submit progress reports to the Missouri Department of Natural Resources via the Electronic Discharge Monitoring Report (eDMR) Submission System.

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated August 1, 2014, May 1, 2013, and March 1, 2015, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS


   The permittee shall submit an eDMR Permit Holder and Certifier Registration form within 90 days of the effective date of this permit. 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 a timely, complete, accurate, and nationally-consistent set of data. Visit http://dnr.mo.gov/pubs/pub2474.pdf to access the Facility Participation Package which contains the eDMR Permit Holder and Certifier Registration form.

   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 a new system is available to allow direct input of the data:
      (1) Collection System Maintenance Annual Reports;
      (2) Schedule of Compliance Progress Reports;
      (3) Wastewater Irrigation Annual Reports;
      (4) 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) Notices of Intent to discharge (NOIs);
      (2) Notices of Termination (NOTs); and
      (3) Bypass reporting, See Special Condition #14 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.
D. SPECIAL CONDITIONS (continued)

2. Emergency Discharges.
   (a) Monitoring. Any emergency 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, 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 Demand_5</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>
<tr>
<td>Total Nitrogen</td>
<td>mg/L</td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>mg/L</td>
</tr>
</tbody>
</table>

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

(b) Authorized Discharges. An emergency discharge from wastewater storage structures may only occur if rainfall exceeds the 10-year 365-day rainfall event (chronic) or the 25-year 24-hour rainfall event (catastrophic). The facility shall make all reasonable attempts to return the water level in the lagoon to below the maximum operating level. Design Storm Maps and Tables can be found at [http://ag3.agebb.missouri.edu/design_storm/](http://ag3.agebb.missouri.edu/design_storm/). For this facility:

<table>
<thead>
<tr>
<th>Audrain County</th>
<th>Data Collected: October 30, 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-year 365-day rainfall event</td>
<td>49.2 inches</td>
</tr>
<tr>
<td>25-year 24-hour rainfall event</td>
<td>5.8 inches</td>
</tr>
</tbody>
</table>

(c) Unauthorized Discharges. Discharge for any other reason than what is stated in 2(b) of this Special Condition shall constitute a permit violation and shall be reported in accordance with Standard Conditions Part 1 Section B. Unauthorized discharges are to be reported to the Northeast Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: [http://dnr.mo.gov/modnrcag/](http://dnr.mo.gov/modnrcag/) the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours.

3. Wastewater Irrigation System.
   (a) No-discharge facility requirements. Wastewater shall be stored and irrigated during suitable conditions so that there are no unauthorized discharges from the storage basins or irrigation sites.

   (b) Storage Basin Operating Levels - No-discharge Systems. The minimum and maximum operating water levels for the storage basins shall be clearly marked in each of the storage basins where the water levels can be manipulated by valves. Each storage basin shall be operated so that the maximum water elevation does not exceed one foot below the Emergency Spillway except due to exceedances of the 1-in-10 year, 365-day or 25-year, 24-hour storm events as detailed in Special Condition 3. Wastewater shall be land applied whenever feasible based on soil and weather conditions and permit requirements. To ensure maximum storage capacity for the winter months, the storage basins shall be lowered to the minimum operating level (two feet from bottom of the basins) during the months of September to November unless the Department approves a specific deviation from this requirement. Permitted Feature #003 (Sims Storage Cell) minimum operating level is 12 ft., Permitted Feature #004 (Bowne Storage Cell) minimum operating level is 10 ft., Permitted Feature #005 (Benoit Storage Cell) minimum operating level is 14 ft.

   (c) Emergency Spillway. Earthen storage basins should have an emergency spillway to protect the structural integrity of earthen structures during operation at near full water levels and in the event of overflow conditions. The spillway shall be at least one foot below top of berm.
D. SPECIAL CONDITIONS (continued)

(d) **General Irrigation Requirements.** The wastewater irrigation system shall be operated so as to provide uniform distribution of irrigated wastewater over the entire irrigation site. A complete ground cover of vegetation shall be maintained on the irrigation site unless the system is approved for row crop irrigation. The wastewater irrigation system shall be capable of irrigating the annual design flow during an application period of 100 days or less per year. If the facility determines that night time irrigation is needed, the facility shall submit a night time wastewater irrigation plan to the Department’s Water Protection Program for review and approval. Night time irrigation shall only occur when the Department has approved the night time wastewater irrigation plan.

(e) **Saturated/Frozen Conditions.** There shall be no irrigation during ground frost, frozen, snow covered, or saturated soil conditions, or when precipitation is imminent or occurring.

(f) **Slope Restrictions.** 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.

(g) **Set Backs.** There shall be no irrigation within:

1. 300 feet of any sinkhole, losing stream, or any other feature that may provide a connection to the ground water table and the surface;
2. 300 feet from any existing potable water supply well not located on the property
3. 150 feet of dwelling or public use areas
4. 100 feet of any gaining perennial or intermittent streams or tributaries, public or privately owned pond or lake. As a compliance alternative a 35-foot vegetative buffer that is permanently covered with perennial vegetation maybe substituted for the 100 foot set-back requirement.
5. 50 feet of the property line or public road,

(h) **Public Access Restrictions.** Public access shall not be allowed to public use area irrigation sites when application is occurring.

(i) **Grazing and Harvesting of Forage Crops Restrictions.** Grazing of animals shall be deferred as per the following:

1. From May 1 to October 30, the minimum deferment from grazing or forage harvesting shall be 14 days.
2. From November 1 to April 30, the minimum deferment from grazing or forage harvesting shall be 30 days.

(j) **Irrigated Wastewater Disinfection.** Wastewater shall be disinfected prior to wastewater irrigation (not storage) to public use areas.

(k) **Agronomic Application Rates.** Wastewater irrigation 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.

(l) **Equipment Checks during Irrigation.** The irrigation system and irrigation site shall be visually inspected at least once/day during wastewater irrigation to check for equipment malfunctions and runoff from the irrigation site.

4. Wastewater irrigation records shall be maintained and summarized into an annual operating report, which shall be submitted by January 28th of each year for the previous calendar year period. The summarized annual report is in addition to the reporting requirements listed in Table A. The summarized annual report shall include the following:

   (a) Record of maintenance and repairs performed 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 basin(s) has discharged during the year, the discharge flow, and the reasons discharge occurred; and

   (c) A summary of the irrigation operations for the year including: the number of days of irrigation, the total gallons irrigated, the total acres used, the irrigation rate in inches for the year, and the annual precipitation received at the facility.

5. 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 Clean Water Act (CWA) section 402(k); however, this permit may be reopened and modified, or alternatively revoked and reissued:

   (a) 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 CWA, if the effluent standard or limitation so issued or approved:

      1. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      2. controls any pollutant not limited in the permit.

   (b) To incorporate an approved pretreatment program pursuant to 40 CFR 403.8(a).

6. All outfalls must be clearly marked in the field. Permitted features, including storage basins and irrigation sites, shall be marked on an aerial or topographic site map included with the Operation and Maintenance manual.

7. Permittee will cease discharge by connection to a facility with an area-wide management plan per 10 CSR 20-6.010(3)(B) within 90 days of notice of its availability.
D. SPECIAL CONDITIONS (continued)

8. Report as no-discharge when a discharge or wastewater irrigation does not occur during the report period.

9. Changes in existing pollutants or the addition of new pollutants to the treatment facility

The permittee must provide adequate notice to the Director of the following:
(a) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging those pollutants; and
(b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
(c) For purposes of this paragraph, adequate notice shall include information on;
   (1) the quality and quantity of effluent introduced to the POTW, and
   (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

10. Reporting of Non-Detects:
(a) An analysis conducted by the permittee or their contracted laboratory shall be conducted in such a way that the precision and accuracy of the analyzed result can be enumerated.
(b) The permittee shall not report a sample result as “Non-Detect” without also reporting the detection limit of the test. Reporting as “Non Detect” without also including the detection limit will be considered failure to report, which is a violation of this permit.
(c) The permittee shall provide the “Non-Detect” sample result using the less than sign and the minimum detection limit (e.g. <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).

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

12. The permittee shall comply with any applicable requirements listed in 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the Department for review and, if deemed necessary, approval.


The permittee shall also submit a report via the Electronic Discharge Monitoring Report (eDMR) Submission System annually, by January 28th, for the previous calendar year. The report shall contain the following information:
(a) A summary of the efforts to locate and eliminate sources of excessive infiltration and inflow into the collection system serving the facility for the previous year.
(b) A summary of the general maintenance and repairs to the collection system serving the facility for the previous year.
(c) A summary of any planned maintenance and repairs to the collection system serving the facility for the upcoming calendar year. This list shall include locations (GPS, 911 address, manhole number, etc.) and actions to be taken.

14. Bypasses are not authorized at this facility unless they meet the criteria in 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3), and with Standard Condition Part I, Section B, subsection 2. Bypasses are to be reported to the Northeast Regional Office during normal business hours or by using the online Sanitary Sewer Overflow/Facility Bypass Application located at: http://dnr.mo.gov/modnrcag/ or the Environmental Emergency Response hotline at 573-634-2436 outside of normal business hours. Once an electronic reporting system compliant with 40 CFR Part 127, the National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule, is available all bypasses must be reported electronically via the new system. Blending, which is the practice of combining a partially-treated wastewater process stream with a fully-treated wastewater process stream prior to discharge, is not considered a form of bypass. If the permittee wishes to utilize blending, the permittee shall file an application to modify this permit to facilitate the inclusion of appropriate monitoring conditions.
D. SPECIAL CONDITIONS (continued)

15. The facility and access to the storage basin(s) and any associated wastewater irrigation equipment must be sufficiently restricted or secured to prevent entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

16. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain closed except when temporarily opened by; the permittee to access the facility, perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department. The gate shall be closed and locked when the facility is not staffed.

17. At least one (1) warning sign shall be placed on each side of the facility enclosure (does not pertain to storage basins and irrigation fields) in such positions as to be clearly visible from all directions of approach. There shall also be one (1) sign placed for every five hundred feet (500') (150 m) of the perimeter fence. A sign shall also be placed on each gate. Minimum wording shall be SEWAGE TREATMENT FACILITY—KEEP OUT. Signs shall be made of durable materials with characters at least two inches (2") high and shall be securely fastened to the fence, equipment or other suitable locations.

18. 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 wastewater irrigation systems, including key operating procedures, an aerial or topographic site map with the permitted features, wastewater irrigation 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. The O&M Manual shall be reviewed and updated at least every five years.

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

20. The discharge from the wastewater treatment facility shall be conveyed to the receiving stream via a closed pipe or a paved or rip-rapped open channel. Sheet or meandering drainage is not acceptable. The outfall sewer shall be protected against the effects of floodwater, ice or other hazards as to reasonably insure its structural stability and freedom from stoppage. The outfall shall be maintained so that a sample of the effluent can be obtained at a point after the final treatment process and before the discharge mixes with the receiving waters.

21. A minimum of two (2) feet of freeboard must be maintained in each lagoon cell and storage basin. A water level gauge, which clearly marks the minimum freeboard level, shall be provided in each lagoon cell and storage basin.

22. The berms of the lagoons and storage basins shall be mowed and kept free of any deep-rooted vegetation, animal dens, or other potential sources of damage to the berms.

23. The facility shall ensure that adequate provisions are provided to prevent surface water intrusion into the lagoons and storage basins and to divert stormwater runoff around the lagoon and storage basins and protect embankments from erosion.

24. Acute Whole Effluent Toxicity (WET) tests shall be conducted as follows:
   (a) Freshwater Species and Test Methods: Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the most recent edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/821/R-02/012; Table IA, 40 CFR Part 136). The permittee shall concurrently conduct 48-hour, static, non-renewal toxicity tests with the following species:
   (b) Chemical and physical analysis of the upstream control sample and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping. Where upstream receiving water is not available or known to be toxic, other approved control water may be used.
   (c) Test conditions must meet all test acceptability criteria required by the EPA Method used in the analysis.
   (d) The Allowable Effluent Concentration (AEC) for this facility is 100% with the dilution series being: 100%, 50%, 25%, 12.5%, and 6.25%.
   (e) All chemical and physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% effluent concentration.
   (f) All chemical analyses shall be performed and results shall be recorded in the appropriate field of the report form. The parameters for chemical analysis include Temperature (°F), pH (SU), Conductivity (µmhos/cm), Dissolved Oxygen (mg/L), Total Residual Chlorine (mg/L), In-ionized Ammonia (mg/L), Total Alkalinity (mg/L), and Total Hardness (mg/L).
   (g) The facility must submit a full laboratory report for all toxicity testing. The report must include a quantification of acute toxic units (TUₙ = 100/LC₅₀) reported according to the test methods manual chapter on report preparation and test review. The Lethal Concentration 50 Percent (LC₅₀) is the effluent concentration that would cause death in 50 percent of the test organisms at a specific time.
D. SPECIAL CONDITIONS (continued)

25. Controlled Discharges.
   (a) The term “controlled discharge” used herein shall mean a discharge event to allow water to flow from the facility through the permitted outfall(s) into the receiving stream that is initiated by the operator by means of opening a single or multiple valves, gates, or other operational control and then stopped by the operator by closing the same valves, gates, or other operational control.
   (b) Controlled discharges through Outfall #001 shall be limited to 146,000 gallons per day. Discharges above 146,000 gallons per are allowed to occur through the effluent overflow pipe structure when storage capacity is exceeded during periods of heavy precipitation.
   (c) Controlled discharges through Outfall #002 shall be limited to 660,000 gallons per day. Discharges above 660,000 gallons per are allowed to occur through the effluent overflow pipe structure when storage capacity is exceeded during periods of heavy precipitation.
   (d) Sampling for the effluent limitations in Table A during a batch release shall be conducted weekly, with at least two sampling events during the release. One sampling event shall be conducted near the beginning of the batch release and another sampling event conducted near the end of the batch release. Batch release sampling results can be considered as the monthly and Quarterly sampling requirement as required by Table A.
   (e) To avoid adversely affecting the hydrology of the receiving stream, means to dissipate the energy of the controlled discharge flow shall be provided. Energy dissipation may be provided by rip-rap, diffuser, or other Department approved method.
   (f) Effluent limitations and Water Quality Standards shall not be violated at any time during a controlled discharge.

26. The City’s industrial pretreatment program is currently on “inactive” status due to an absence of categorical industries. The City shall provide the Department with at least a sixty (60) day advance notice of the acceptance of any new or changed industrial process wastewaters into the publicly owned treatment works. If an industry is determined by the Department to be a “significant industrial user” as defined in 40 CFR 403.3(t), this permit shall be reopened and modified to require either the reactivation of the pretreatment program or the development of a new pretreatment program in accordance with the current requirements of 40 CFR 403.8.

27. Wastewater Irrigation Sites. To add additional irrigation sites or to convert any of the land to public-use-areas, a construction permit, geohydrological evaluation, soils report, and permit modification may be required. The facility shall contact the Department for a written determination.
MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0028789
CENTRALIA WASTEWATER TREATMENT FACILITY

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.

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 (operating permit) listed below.

A Factsheet is not an enforceable part of an operating permit.

This Factsheet is for a Minor Municipal.

Part I – Facility Information

Facility Type: POTW - SIC #4952

Facility Description: Two – Two-cell lagoon systems with partial irrigation, Three overland flow fields, Three irrigation storage basins, 13 – center pivot wastewater irrigation fields

Outfall #001 – Northwest System – Two-cell lagoon / partial irrigation / can be pumped to the lagoon system at Outfall #002 / sludge is retained in lagoon or land applied.

Outfall #002 – Northeast System - Two-cell lagoon / partial irrigation / can be pumped to the lagoon at Outfall #001 or can flow to outfall #006 / sludge is retained in lagoon or land applied.

Outfall #006 – Northeast Lagoon Overland Flow System
Three – 3.73 acre (11.19 total acres) overland flow fields / flow is received from the Northeast Lagoon System (Outfall #002)

Permitted Feature #003 – Sims Storage Cell – single-cell storage basin for wastewater irrigation / stores effluent pumped from Outfalls #001 & #002 / 46,376,000 gallons total volume / 21.9 acres / minimum water level is 12 feet (below overflow level)

Permitted Feature #004 – Bowne Storage Cell - single-cell storage basin for wastewater irrigation / stores effluent pumped from Outfalls #001 & #002 / 11,968,000 gallons total volume / 5.32 acres / minimum water level is 10 feet (below overflow level)

Permitted Feature #005 – Benoit Storage Cell - single-cell storage basin for wastewater irrigation / stores effluent pumped from Outfalls #001 & #002 / 20,944,000 gallons total volume / 4.99 acres / minimum water level is 14 feet (below overflow level)

Permitted Feature #007 – Center Pivot Wastewater Irrigation Field (~267 acres)

Permitted Feature #008 – Center Pivot Wastewater Irrigation Field (~114 acres)

Permitted Feature #009 – Center Pivot Wastewater Irrigation Field (~110 acres)

Permitted Feature #010 – Center Pivot Wastewater Irrigation Field (~114 acres)

Permitted Feature #011 – Center Pivot Wastewater Irrigation Field (~115 acres)

Permitted Feature #012 – Center Pivot Wastewater Irrigation Field (~116 acres)

Permitted Feature #013 – Center Pivot Wastewater Irrigation Field (~114 acres)
Permitted Feature #014 – Center Pivot Wastewater Irrigation Field (~108 acres)

Permitted Feature #015 – Center Pivot Wastewater Irrigation Field (~70 acres)

Permitted Feature #016 – Center Pivot Wastewater Irrigation Field (~114 acres)

Permitted Feature #017 – Center Pivot Wastewater Irrigation Field (~120 acres)

Permitted Feature #018 – Center Pivot Wastewater Irrigation Field (~115 acres)

Wastewater Irrigation Design Parameters:

- **Irrigation Volume per year:** 294,190,000 gallons (based on annual irrigation rate)
- **Irrigation areas:** 382 acres at design loading (~1,460 acres total available)
- **Application rates:** 0.5 inch/hour; 1.0 inch/day; 3.0 inches/week; 24 inches/year
- **Field slopes:** Less than 5 percent
- **Equipment type:** Center Pivot
- **Vegetation:** Grass Hay / Row Crops
- **Application Rate is based on:** Hydraulic Loading

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?

- **Yes:** Tributary to Youngs Creek, Tributary to Goodwater Creek, and Tributary to Long Branch are now classified as EPA has approved the Department’s new stream classifications. A schedule of compliance has been included in the permit to meet final effluent limitations for E. coli which are protective of the WBC - B use designation of the stream.

- **No.**

**Application Date:** 06/04/2013

**Expiration Date:** 12/18/2013

**OUTFALL(S) TABLE:**

<table>
<thead>
<tr>
<th>OUTFALL</th>
<th>DESIGN FLOW (CFS)</th>
<th>TREATMENT LEVEL</th>
<th>EFFLUENT TYPE</th>
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<tr>
<td>#001</td>
<td>0.23</td>
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<td>Domestic</td>
</tr>
<tr>
<td>#002</td>
<td>1.02</td>
<td>Equivalent to Secondary/Irrigation</td>
<td>Domestic</td>
</tr>
<tr>
<td>#003</td>
<td>Receives flows from #002</td>
<td>Equivalent to Secondary</td>
<td>Domestic</td>
</tr>
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</table>

**Facility Performance History:**

The facility failed to report the volume irrigated for Permitted Features #003, #004, and #005 on the May 2009 Discharge Monitoring Reports (DMR). The facility failed to meet final effluent limitations for Cyanide on the December 2009 and March 2010 DMRs. The facility exceeded final effluent limitation for Ammonia on the January, February, March, April, May, and June 2010 DMRs for Outfall #001. The facility exceeded final effluent limitation for Ammonia on the June 2009, January, February, March, and June 2010 DMRs for Outfall #002. The facility failed to report Application Area, Application Rate, Irrigation Period, Volume Irrigated, and TKN on the December 2009 DMR for Permitted Feature #005. The facility failed the 2012 Acute Whole Effluent Toxicity test on Outfall #001.

This facility was last inspected on July 19 and August 15, 2016. The inspection showed the following unsatisfactory features; failing to operating the irrigation system in accordance with Special Condition 5 of the permit by conducting wastewater irrigation during non-daylight hours, and failure to remove deep-rooted vegetation from the lagoon berms. The Department sent the facility a letter dated October 28, 2016 returning the facility to compliance.

**Comments:**

Changes in this permit include the addition of E. coli, Total Phosphorus, Total Nitrogen, Storage Basin Freeboard and the removal of Total Recoverable Aluminum, Total Recoverable Copper, Total Recoverable Iron, Total Recoverable Zinc, and Total Kjeldahl Nitrogen. Effluent limits for Ammonia and Cyanide were revised. See Part VI of the Fact Sheet for further information regarding the addition and removal of effluent parameters. Special conditions were updated to include the addition of inflow and infiltration reporting requirements, reporting of Non-detects, bypass reporting requirements, pretreatment requirements, addition of controlled discharge requirements, and updates to the Wastewater Irrigation special condition. The City requested that the permit writer change the facility description for Outfall #002 by removing the aeration and baffle curtain from the description. The City has had trouble
with the baffle and aeration equipment and a City hired engineer determined that those were not needed to meet final limits. As per the City’s request, the language was modified to remove the aeration equipment and baffle curtain from the facility description. With the removal of the baffle curtain, Outfall #002 is listed as a two cell lagoon.

This facility conducts controlled discharges from the lagoon systems as stated on the application for renewal and as evidenced on the discharge monitoring reports that show several months of no-discharge. During a controlled discharge, the facility may begin drawing from areas in the lagoon that have not received full treatment as the water level is lowered in the lagoon cell. This becomes more of a problem if the lagoon is drawn down in a few days. Although the discharge might meet effluent limitations at the beginning, it may not at the end. Additional sampling requirements are included as Note 2 and Special Conditions #24 in the permit. Special Condition #24 also limits the amount of water that can be released during a controlled discharge to 146,000 gallons per day for Outfall #001 and 660,000 gallons per day for Outfall #002.

**Part II – Operator Certification Requirements**

☒ - This facility is required to have a certified operator.

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], the permittee shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.020(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

- box checked for: Municipalities  
- box unchecked for: State agency  
- box checked for: Federal agency  
- box checked for: Public Sewer District  
- box unchecked for: County  
- box checked for: Public Water Supply Districts  
- box unchecked for: Private Sewer Company regulated by the Public Service Commission  
- box unchecked for: State agency  
- box unchecked for: Federal agency

Each of the above entities are only applicable if they have a Population Equivalent greater than two hundred (200) or fifty (50) or more service connections.

This facility currently requires an operator with a D Certification Level. Please see Appendix - Classification Worksheet. Modifications made to the wastewater treatment facility may cause the classification to be modified.

Operator’s Name: Michael R. Forsee  
Certification Number: 4640  
Certification Level: B

The listing of the operator above only signifies that staff drafting this operating permit have reviewed appropriate Department records and determined that the name listed on the operating permit application has the correct and applicable Certification Level.

**Part III– Operational Monitoring**

☒ - As per [10 CSR 20-9.010(4)], the facility is required to conduct operational monitoring.
Part IV – Receiving Stream Information

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(4)].

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<th>RECEIVING STREAM(S) TABLE: OUTFALL #001</th>
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<th>DISTANCE TO CLASSIFIED SEGMENT (MI)</th>
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<tbody>
<tr>
<td>Tributary to Goodwater Creek</td>
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<td>NA</td>
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<td>General Criteria</td>
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<tr>
<td>8-20-13 MUDD V1.0</td>
<td>C</td>
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</table>

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

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<tr>
<th>RECEIVING STREAM(S) TABLE: OUTFALL #002</th>
<th>WATER-BODY NAME</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Tributary to Younsg Creek</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>General Criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-20-13 MUDD V1.0</td>
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* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life (AQL), Human Health Protection (HHP), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation – Category A (WBC-A), Whole Body Contact Recreation – Category B (WBC-B), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

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<tbody>
<tr>
<td>Tributary to Younsg Creek</td>
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<td>NA</td>
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<td>General Criteria</td>
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<tr>
<td>8-20-13 MUDD V1.0</td>
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* - Irrigation (IRR), Livestock & Wildlife Watering (LWW), Protection of Warm Water Aquatic Life (AQL), Human Health Protection (HHP), Cool Water Fishery (CLF), Cold Water Fishery (CDF), Whole Body Contact Recreation – Category A (WBC-A), Whole Body Contact Recreation – Category B (WBC-B), Secondary Contact Recreation (SCR), Drinking Water Supply (DWS), Industrial (IND), Groundwater (GRW).

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<th>RECEIVING STREAM(S) LOW-FLOW VALUES:</th>
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<td>Tributary to Younsg Creek</td>
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<td>--</td>
</tr>
<tr>
<td>Tributary to Long Branch</td>
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</tbody>
</table>

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

Receiving Water Body’s Water Quality
No stream surveys have been conducted on the receiving streams.
Part V – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including wastewater irrigation, 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.

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

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

- Limitations in this operating permit for the reissuance of this permit conform to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, and 40 CFR Part 122.44.

- Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.
  - Effluent limitations were re-calculated for Ammonia and Cyanide based new information derived from discharge monitoring reports and on the current Missouri Water Quality Standards for Ammonia.
  - Total Recoverable Aluminum, Total Recoverable Copper, Total Recoverable Iron, and Total Recoverable Zinc were removed from the permit as the permit writer did not observe a reasonable potential to violate Water Quality Standards. Total Kjeldahl Nitrogen was removed from the wastewater irrigation requirements.

- The Department determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under section 402(a)(1)(b).
  - This permit changes WET test requirements for the facility from a pass/fail requirement to monitoring only for toxic units. This change reflects modifications to Missouri’s Effluent Regulation found at 10 CSR 20-7.015. 40 CFR 122.44(d)(1)(ii) requires the Department to establish effluent limitations that control all parameters which have the reasonable potential to cause or contribute to an excursion above any state water quality standard, including state narrative criteria. The previous permit imposed a pass/fail limitation without collecting sufficient data to make a reasonable potential determination. Furthermore, the method of reporting associated with the pass/fail limitation prevented the Department from gathering the data necessary to make a finding of reasonable potential. Implementation of the toxic unit monitoring requirement will allow the Department to implement numeric acute criteria in accordance with water quality standards established under §303 of the CWA.
  - General Criteria. The previous permit contained a special condition which described a specific set of prohibitions related to general criteria found in 10 CSR 20-7.031(4). In order to comply with 40 CFR 122.44(d)(1), the permit writer has conducted reasonable potential determinations for each general criterion and established numeric effluent limitations where reasonable potential exists. While the removal of the previous permit special condition creates the appearance of backsliding, since this permit establishes numeric limitations where reasonable potential to cause or contribute to an excursion of the general criteria exists the permit maintains sufficient effluent limitations and monitoring requirements in order to protect water quality, this permit is equally protective as compared to the previous permit. Therefore, given this new information, and the fact that the previous permit special condition was not consistent with 40 CFR 122.44(d)(1), an error occurred in the establishment of the general criteria as a special condition of the previous permit. Please see Part VII – Effluent Limits Determination for more information regarding the reasonable potential determinations for each general criterion related to this facility.

ANTIDEGRADATION:
In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(3)], the Department is to document by means of Antidegradation Review that the use of a water body’s available assimilative capacity is justified. Degradation is justified by documenting the socio-economic importance of a discharging activity after determining the necessity of the discharge.

- No degradation proposed and no further review necessary. Facility did not apply for authorization to increase pollutant loading or to add additional pollutants to their discharge.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(3)(B)], …An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.
BIOSOLIDS & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, 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 a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: http://extension.missouri.edu/main/DisplayCategory.aspx?C=74, items WQ422 through WQ449.

- Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by contract hauler, incinerated, stored in the lagoon, etc. The permittee must submit a sludge management plan for approval that details removal and disposal plans when sludge is to be removed from lagoons.

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.

- The facility is not currently under Water Protection Program enforcement action.

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

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

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

- The permittee/facility is not currently using the eDMR data reporting system. The permittee has been given 90 days of the effective date of this permit to submit an eDMR Permit Holder and Certifier Registration form in accordance with the Department’s eDMR implementation policy.

PRETREATMENT PROGRAM:
The reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a Publicly Owned Treatment Works [40 CFR Part 403.3(q)].

Pretreatment programs are required at any POTW (or combination of POTW operated by the same authority) and/or municipality with a total design flow greater than 5.0 MGD and receiving industrial wastes that interfere with or pass through the treatment works or are otherwise subject to the pretreatment standards. Pretreatment programs can also be required at POTWs/municipals with a design flow less than 5.0 MGD if needed to prevent interference with operations or pass through.

- At this time the permittee’s pretreatment program is inactive.
**REASONABLE POTENTIAL ANALYSIS (RPA):**
Federal regulation [40 CFR Part 122.44(d)(1)(i)] requires effluent limitations for all pollutants that are or may be discharged at a level that will cause, or have the reasonable potential to cause or contribute to an in-stream excursion above narrative or numeric water quality standard.

In accordance with [40 CFR Part 122.44(d)(1)(iii)] if the permit writer determines that 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 that pollutant.

- A RPA was conducted on appropriate parameters. Please see APPENDIX – RPA RESULTS.

- A RPA was not conducted for this facility.

  **Conservative assumption:**
  The following conservative assumptions have been made regarding the facility:
  - Ammonia is a constituent of domestic wastewater. A reasonable potential to violate water quality standards is assumed.
  - Default multipliers from EPA guidance were utilized to calculate effluent limits.
  - No degradation of ammonia has been calculated.

**REMOVAL EFFICIENCY:**
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

- Equivalent to Secondary Treatment is 65% removal [40 CFR Part 133.105(a)(3) & (b)(3)].

**SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):**
Sanitary Sewer Overflows (SSOs) are defined as untreated sewage releases and are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSOs result from a variety of causes including blockages, line breaks, and sewer defects that can either allow wastewater to backup within the collection system during dry weather conditions or allow excess stormwater and groundwater to enter and overload the collection system during wet weather conditions. SSOs can also result from lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs include overflows out of manholes, cleanouts, broken pipes, and other into waters of the state and onto city streets, sidewalks, and other terrestrial locations.

Inflow and Infiltration (I&I) is defined as unwanted intrusion of stormwater or groundwater into a collection system. This can occur from points of direct connection such as sump pumps, roof drain downspouts, foundation drains, and storm drain cross-connections or through cracks, holes, joint failures, faulty line connections, damaged manholes, and other openings in the collection system itself. I&I results from a variety of causes including line breaks, improperly sealed connections, cracks caused by soil erosion/settling, penetration of vegetative roots, and other sewer defects. In addition, excess stormwater and groundwater entering the collection system from line breaks and sewer defects have the potential to negatively impact the treatment facility.

Missouri RSMo §644.026.1.(13) mandates that the Department issue permits for discharges of water contaminants into the waters of this state, and also for the operation of sewer systems. Such permit conditions shall ensure compliance with all requirements as established by sections 644.006 to 644.141. Standard Conditions Part I, referenced in the permit, contains provisions requiring proper operation and maintenance of all facilities and systems of treatment and control. Missouri RSMo §644.026.1.(15) instructs the Department to require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities. To ensure that public health and the environment are protected, any noncompliance which may endanger public health or the environment must be reported to the Department within 24 hours of the time the permittee becomes aware of the noncompliance. Standard Conditions Part I, referenced in the permit, contains the reporting requirements for the permittee when bypasses and upsets occur. The permit also contains requirements for permittees to develop and implement a program for maintenance and repair of the collection system. The permit requires that the permittee submit an annual report to the Department for the previous calendar year that contains a summary of efforts taken by the permittee to locate and eliminate sources of excess I & I, a summary of general maintenance and repairs to the collection system, and a summary of any planned maintenance and repairs to the collection system for the upcoming calendar year.

- At this time, the Department recommends the US EPA’s Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs At Sanitary Sewer Collection Systems (Document # EPA 305-B-05-002) or the Departments’ CMOM Model located at [http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc](http://dnr.mo.gov/env/wpp/permits/docs/cmom-template.doc). For additional information regarding the Departments’ CMOM Model, see the CMOM Plan Model Guidance document at [http://dnr.mo.gov/pubs/pub2574.htm](http://dnr.mo.gov/pubs/pub2574.htm). The CMOM identifies some of the criteria used to evaluate a collection system’s management, operation, and maintenance and was intended for use by the EPA, state, regulated community, and/or third party entities. The CMOM is applicable to small, medium, and large systems; both public and privately owned; and both regional and satellite collection systems. The CMOM does not substitute for the Clean Water Act, the Missouri Clean Water Law, and both federal and state regulations, as it is not a regulation.
**SCHEDULE OF COMPLIANCE (SOC):**

Per 644.051.4 RSMo, a permit may be issued with a Schedule of Compliance (SOC) to provide time for a facility to come into compliance with new state or federal effluent regulations, water quality standards, or other requirements. Such a schedule is not allowed if the facility is already in compliance with the new requirement, or if prohibited by other statute or regulation. A SOC includes an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit. See also Section 502(17) of the Clean Water Act, and 40 CFR §122.2. For new effluent limitations, the permit includes interim monitoring for the specific parameter to demonstrate the facility is not already in compliance with the new requirement. Per 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. If the permit provides a schedule for meeting new water quality based effluent limits, a SOC must include an enforceable, final effluent limitation in the permit even if the SOC extends beyond the life of the permit.

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 that was 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 to Permit Writers in developing SOCs, and attain a greater level of consistency, on April 9, 2015 the Department issued an updated policy on development of SOCs. This policy provides guidance to Permit Writers on the standard time frames for schedules for common activities, and guidance on factors that may modify the length of the schedule such as a Cost Analysis for Compliance.

- The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(11)]. The facility has been given a schedule of compliance to meet final effluent limits for Ammonia and *E. coli*. The one (1) year schedule of compliance allowed for this facility to meet the final effluent limitations for Ammonia should provide adequate time to evaluate operations and make any necessary adjustments to meet the final limits. The four (4) year schedule of compliance allowed for this facility to meet the final effluent limits for *E. coli* should provide adequate time to evaluate operations, obtain an engineering report, determine and obtain funding, acquire a construction permit, and implement upgrades required to meet effluent limits. Due to the economic burden on this community of the cost of compliance and associated difficulty in raising the necessary funding, the schedule has been established at 4 years in accordance with the Department’s “Schedule of Compliance, Policy for Staff Drafting Operating Permits”. Please see the Cost Analysis for Compliance attached as an appendix to the permit for further detail on how the socio-economic status of the community has impacted this SOC.

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

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

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

Additionally in accordance with the 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 stormwater discharges.

- At this time, the permittee is not required to develop and implement a SWPPP.

**VARIANCE:**

As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by its 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.

- This operating permit is not drafted under premises of a petition for variance.
**WasteLoad Allocations (WLA) for Limits:**
As per [10 CSR 20-2.010(78)], the amount of pollutant each discharger is allowed by the Department to release into a given stream after the Department has determined total amount of pollutant that may be discharged into that stream without endangering its water quality.

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

\[
Ce = \left(\frac{(Qe + Qs)C - (Qs \times Cs)}{Qe}\right)
\]

(EPA/505/2-90-001, Section 4.5.5)

Where  
- \( C = \) downstream concentration  
- \( Ce = \) effluent concentration  
- \( Cs = \) upstream concentration  
- \( Qe = \) effluent flow  
- \( Qs = \) upstream flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

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

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

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

- A WLA study was either not submitted or determined not applicable by Department staff.

**Water Quality Standards:**
Per [10 CSR 20-7.031(4)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.
**WHOLE EFFLUENT TOXICITY (WET) TEST:**

- The permittee is required to conduct WET test for this facility.

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

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

- Facility is a designated Major.
- Facility continuously or routinely exceeds its design flow.
- Facility that exceeds its design population equivalent (PE) for BOD₅ whether or not its design flow is being exceeded.
- Facility (whether primarily domestic or industrial) that alters its production process throughout the year.
- Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH₃)
- Facility is a municipality with a Design Flow ≥ 22,500 gpd.
- Other – please justify.

**40 CFR 122.41(M) - BYPASSES:**
The federal Clean Water Act (CWA), Section 402 prohibits wastewater dischargers from “bypassing” untreated or partially treated sewage (wastewater) beyond the headworks. A bypass is defined as an intentional diversion of waste streams from any portion of a treatment facility, [40 CFR 122.41(m)(1)(i)]. Additionally, Missouri regulation 10 CSR 20-7.015(9)(G) states a bypass means the intentional diversion of waste streams from any portion of a treatment facility, except in the case of blending, to waters of the state. Only under exceptional and specified limitations do the federal regulations allow for a facility to bypass some or all of the flow from its treatment process. Bypasses are prohibited by the CWA unless a permittee can meet all of the criteria listed in 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar devices designed for peak wet weather flows.

- This facility does not anticipate bypassing.

**303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):**
Section 303(d) of the federal Clean Water Act requires that each state identify waters that are not meeting water quality standards and for which adequate water pollution controls have not been required. Water quality standards protect such beneficial uses of water as whole body contact (such as swimming), maintaining fish and other aquatic life, and providing drinking water for people, livestock and wildlife. The 303(d) list helps state and federal agencies keep track of waters that are impaired but not addressed by normal water pollution control programs.

A TMDL is a calculation of the maximum amount of a given pollutant that a body of water can absorb before its water quality is affected. If a water body is determined to be impaired as listed on the 303(d) list, then a watershed management plan will be developed that shall include the TMDL calculation

- This facility does not discharge to a 303(d) listed stream.
Part VI – Effluent Limits Determination

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

- Missouri or Mississippi River [10 CSR 20-7.015(2)]
- Lakes or Reservoirs [10 CSR 20-7.015(3)]
- Losing Streams [10 CSR 20-7.015(4)]
- Metropolitan No-Discharge Streams [10 CSR 20-7.015(5)]
- Special Streams [10 CSR 20-7.015(6)]
- Subsurface Waters [10 CSR 20-7.015(7)]
- All Other Waters [10 CSR 20-7.015(8)]

Outfalls #001 & #002 – Main Facility Outfalls

Effluent limitations derived and established in the below Effluent 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.

Effluent Limitations Table:

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>Unit</th>
<th>Basis for Limits</th>
<th>Daily Maximum</th>
<th>Weekly Average</th>
<th>Monthly Average</th>
<th>Previous Permit Limit</th>
<th>Sampling Frequency</th>
<th>Reporting Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>1</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>/*</td>
<td>1/week-days</td>
<td>monthly</td>
<td>E</td>
</tr>
<tr>
<td>BOD&lt;sub&gt;5&lt;/sub&gt;</td>
<td>mg/L</td>
<td>1</td>
<td>45</td>
<td>30</td>
<td>45/30</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>TSS</td>
<td>mg/L</td>
<td>1</td>
<td>45</td>
<td>30</td>
<td>45/30</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td><em>Escherichia coli</em>* (Interim)*</td>
<td>#/100mL</td>
<td>1, 3</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>1/week</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td><em>Escherichia coli</em>* (Final)*</td>
<td>#/100mL</td>
<td>1, 3</td>
<td>1030</td>
<td>206</td>
<td><em>/</em></td>
<td>1/week</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Apr 1 – Sep 30)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>6.2</td>
<td>2.4</td>
<td>6.2/2.4</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Oct 1 – Mar 31)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>8.4</td>
<td>3.2</td>
<td>8.4/3.2</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Apr 1 – Sep 30)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>3.6</td>
<td>1.4</td>
<td>8.4/3.2</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Oct 1 – Mar 31)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>7.5</td>
<td>2.9</td>
<td>8.4/3.2</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Cyanide, Amenable to Chlorination</td>
<td>µg/L</td>
<td>2, 3</td>
<td>8.2</td>
<td>4.1</td>
<td>8.1/4.0</td>
<td>1/quarter</td>
<td>quarterly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L</td>
<td>1, 3</td>
<td>15</td>
<td>10</td>
<td>15/10</td>
<td>1/quarter</td>
<td>quarterly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>mg/L</td>
<td>1</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>1/quarter</td>
<td>quarterly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>mg/L</td>
<td>1</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>1/quarter</td>
<td>quarterly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Acute Whole Effluent Toxicity</td>
<td>TU/a</td>
<td>1</td>
<td>9</td>
<td>*</td>
<td>Pass/ Fail</td>
<td>1/permit cycle</td>
<td>1/permit cycle</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>SU</td>
<td>1</td>
<td>6.5</td>
<td>9.0</td>
<td>6.5–9.0</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>BOD&lt;sub&gt;5&lt;/sub&gt; Percent Removal</td>
<td>%</td>
<td>1</td>
<td>65</td>
<td>65</td>
<td>1/month</td>
<td>monthly</td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSS Percent Removal</td>
<td>%</td>
<td>1</td>
<td>65</td>
<td>65</td>
<td>1/month</td>
<td>monthly</td>
<td>M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - Monitoring requirement only.
** - The Monthly Average for E. coli is a geometric mean.
*** - Parameter not previously established in previous state operating permit.
**** - C = 24-hour composite
G = Grab
M = Total Measured / Measured
E=24-hour estimate

Basis for Limitations Codes:
1. State or Federal Regulation/Law
2. Water Quality Standard (includes RPA)
3. Water Quality Based Effluent Limits
4. Antidegradation Review
5. Antidegradation Policy
6. Water Quality Model
7. Best Professional Judgment
8. TMDL or Permit in lieu of TMDL
9. WET Test Policy
10. Multiple Discharger Variance
OUTFALLS #001 & #002 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD$_5$).** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination**.

- **Total Suspended Solids (TSS).** Effluent limitations have been retained from previous state operating permit, please see the **APPLICABLE DESIGNATION OF WATERS OF THE STATE** sub-section of the **Effluent Limits Determination**.

- **Escherichia coli (E. coli).** Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking the nth root of this product, where $n = \#$ of samples collected. For example: Five E. coli samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = $5^{th}$ root of $(1)(4)(6)(10)(5) = 5^{th}$ root of $1,200 = 4.1$ #/100mL.

- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

<table>
<thead>
<tr>
<th>Season</th>
<th>Temp (°C)</th>
<th>pH (SU)</th>
<th>Total Ammonia Nitrogen CCC (mg/L)</th>
<th>Total Ammonia Nitrogen CMC (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>26</td>
<td>7.8</td>
<td>1.5</td>
<td>12.1</td>
</tr>
<tr>
<td>Winter</td>
<td>6</td>
<td>7.8</td>
<td>3.1</td>
<td>12.1</td>
</tr>
</tbody>
</table>

**Summer: April 1 – September 30**

Chronic WLA: $C_e = ((1.02 + 0.0)1.5 – (0.0 * 0.01))/1.02$

$C_e = 1.5$ mg/L

Acute WLA: $C_e = ((1.02 + 0.0)12.1 – (0.0 * 0.01))/1.02$

$C_e = 12.1$ mg/L

$LTA_c = 1.5$ mg/L (0.780) = 1.17 mg/L

$LTA_a = 12.1$ mg/L (0.321) = 3.89 mg/L

[CV = 0.6, 99th Percentile, 30 day avg.]

$[CV = 0.6, 99th Percentile]$

Use most protective number of $LTA_c$ or $LTA_a$.

MDL = 1.17 mg/L (3.11) = 3.6 mg/L

AML = 1.17 mg/L (1.19) = 1.4 mg/L

[CV = 0.6, 95th Percentile, n =30]

**Winter: October 1 – March 31**

Chronic WLA: $C_e = ((1.02 + 0.0)3.1 – (0.0 * 0.01))/1.02$

$C_e = 3.1$ mg/L

Acute WLA: $C_e = ((1.02 + 0.0)12.1 – (0.0 * 0.01))/1.02$

$C_e = 12.1$ mg/L

$LTA_c = 3.1$ mg/L (0.780) = 2.42 mg/L

$LTA_a = 12.1$ mg/L (0.321) = 3.89 mg/L

[CV = 0.6, 99th Percentile, 30 day avg.]

$[CV = 0.6, 99th Percentile]$

Use most protective number of $LTA_c$ or $LTA_a$.

MDL = 2.42 mg/L (3.11) = 7.5 mg/L

AML = 2.42 mg/L (1.19) = 2.9 mg/L

[CV = 0.6, 95th Percentile, n =30]

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.
• **Total Phosphorus and Total Nitrogen.** Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Total Nitrogen shall be determined by testing for Total Kjeldahl Nitrogen (TKN) and Nitrate + Nitrite and reporting the sum of the results (reported as N). Nitrate + Nitrite can be analyzed together or separately.

• **pH.** – 6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. 10 CSR 20-7.015 allows pH for lagoons to be maintained above 6.0 SU. With no mixing zone, the water quality standard, ≥ 6.5 SU, must be met at the outfall.

• **Cyanide, Amenable to Chlorination.** Protection of Aquatic Life CCC = 5 μg/L, CMC = 22 μg/L, Background CN = 0 μg/L

\[
\text{Chronic WLA: } C_e = \frac{(1.55 + 0.23)5 - (0.23 \times 0.0)}{1.55} = 5 \text{ μg/L}
\]
\[
\text{Acute WLA: } C_e = \frac{(1.55 + 0.23)22 - (0.23 \times 0.0)}{1.55} = 22 \text{ μg/L}
\]

\[
\text{LTA}_c = 5 \times (0.527) = 2.64 \text{ μg/L} \quad \text{[CV = 0.6, 99th Percentile]}
\]
\[
\text{LTA}_a = 22 \times (0.321) = 7.1 \text{ μg/L} \quad \text{[CV = 0.6, 99th Percentile]}
\]

Use most protective number of LTA\(_c\) or LTA\(_a\).

\[
\text{MDL} = 2.64 (3.11) = 8.2 \text{ μg/L} \quad \text{[CV = 0.6, 99th Percentile]}
\]
\[
\text{AML} = 2.64 (1.55) = 4.1 \text{ μg/L} \quad \text{[CV = 0.6, 95th Percentile, n = 4]}
\]

• **Biochemical Oxygen Demand (BOD\(_5\)) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD\(_5\)) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 65% removal efficiency for BOD\(_5\).

• **Total Suspended Solids (TSS) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD\(_5\)) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 65% removal efficiency for TSS.

• **Whole Effluent Toxicity**

**Acute Whole Effluent Toxicity.** Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility’s discharge to exceed water quality standards

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

• **Parameters Removed:** Total Recoverable Aluminum, Total Recoverable Copper, Total Recoverable Iron, and Total Recoverable Zinc were removed from the permit as the permit writer did not observe a reasonable potential to violate water quality standards.

**Sampling Frequency Justification:**

Sampling and Reporting Frequency for BOD, TSS, pH, and Ammonia was changed to monthly. Weekly sampling is required for *E. coli*, per 10 CSR 20-7.015(9)(D)6.A.

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

**Acute Whole Effluent Toxicity**

- No less than **ONCE/PERMIT CYCLE:**
  - Municipality with a design flow ≥ 22,500 gpd, but less than 1.0 MGD.
- Other, please justify.
Sampling Type Justification

As per 10 CSR 20-7.015, BOD₅, TSS and WET test samples collected for lagoons may be grab samples. Grab samples must be collected for pH, Ammonia as N, E. coli, Oil & Grease, and Total Phosphorus. This is due to the holding time restriction for E. coli, the volatility of Ammonia, and the fact that pH cannot be preserved and must be sampled in the field. As Ammonia, Oil & Grease, and Total Phosphorus samples must be immediately preserved, these samples are to be collected as a grab. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

OUTFALLS #001 & #002 – GENERAL CRITERIA CONSIDERATIONS:
In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into the permit for those pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states that pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. In order to comply with this regulation, the permit writer will complete reasonable potential determinations on whether the discharge will violate any of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit states that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of any other information their permit application which has the potential to cause or contribute to an excursion of this narrative criterion.

(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. This facility utilizes irrigation of domestic wastewater to the land surface and therefore does not discharge. Based upon a review of a recent Report of Compliance Inspection dated September 14, 2016, no evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, there had been no indication to the Department that the stream has had issued maintaining beneficial uses as a result of the wastewater irrigation. Therefore, based on the information reviewed during the drafting of this permit, and the fact that the facility does not discharge, no reasonable potential to cause or contribute to an excursion of this criterion exists.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.

(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. Please see (A) above as justification is the same.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.
OUTFALLS #006 – OVERLAND FLOW SYSTEM OUTFALL

Effluent limitations derived and established in the below Effluent 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.

**Effluent Limitations Table:**

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>Unit</th>
<th>Basis for Limits</th>
<th>Daily Maximum</th>
<th>Weekly Average</th>
<th>Monthly Average</th>
<th>Previous Permit Limit</th>
<th>Sampling Frequency</th>
<th>Reporting Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow</td>
<td>MGD</td>
<td>1</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td><em>/</em></td>
<td>1/week-days</td>
<td>monthly</td>
<td>E</td>
</tr>
<tr>
<td>BOD&lt;sub&gt;5&lt;/sub&gt;</td>
<td>mg/L</td>
<td>1</td>
<td>45</td>
<td>30</td>
<td>45/30</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>TSS</td>
<td>mg/L</td>
<td>1</td>
<td>45</td>
<td>30</td>
<td>45/30</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Escherichia coli ** (Final)</td>
<td>#/100mL</td>
<td>1, 3</td>
<td>1030</td>
<td>206</td>
<td><em>/</em></td>
<td>1/week</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Apr 1 – Sep 30) (Interim)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>6.2</td>
<td>2.4</td>
<td>6.2/2.4</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Oct 1 – Mar 31) (Interim)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>8.4</td>
<td>3.2</td>
<td>8.4/3.2</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Apr 1 – Sep 30) (Final)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>3.9</td>
<td>1.4</td>
<td>6.2/2.4</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Ammonia as N (Oct 1 – Mar 31) (Final)</td>
<td>mg/L</td>
<td>2, 3</td>
<td>7.2</td>
<td>2.9</td>
<td>8.4/3.2</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Oil &amp; Grease</td>
<td>mg/L</td>
<td>1, 3</td>
<td>15</td>
<td>10</td>
<td>15/10</td>
<td>1/quarter</td>
<td>quarterly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Total Nitrogen</td>
<td>mg/L</td>
<td>1</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>1/quarter</td>
<td>quarterly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Total Phosphorus</td>
<td>mg/L</td>
<td>1</td>
<td>*</td>
<td>*</td>
<td>***</td>
<td>1/quarter</td>
<td>quarterly</td>
<td>G</td>
<td></td>
</tr>
<tr>
<td>Acute Whole Effluent Toxicity</td>
<td>TUa</td>
<td>1, 9</td>
<td>*</td>
<td>Pass/ Fail</td>
<td>1/permit cycle</td>
<td>1/permit cycle</td>
<td>G</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>Unit</th>
<th>Basis for Limits</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Previous Permit Limit</th>
<th>Sampling Frequency</th>
<th>Reporting Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>SU</td>
<td>1</td>
<td>6.5</td>
<td>9.0</td>
<td>6.5–9.0</td>
<td>1/month</td>
<td>monthly</td>
<td>G</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>Unit</th>
<th>Basis for Limits</th>
<th>Monthly Avg Min</th>
<th>Previous Permit Limit</th>
<th>Sampling Frequency</th>
<th>Reporting Frequency</th>
<th>Sample Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD&lt;sub&gt;5&lt;/sub&gt; Percent Removal</td>
<td>%</td>
<td>1</td>
<td>65</td>
<td>65</td>
<td>1/month</td>
<td>monthly</td>
<td>M</td>
</tr>
<tr>
<td>TSS Percent Removal</td>
<td>%</td>
<td>1</td>
<td>65</td>
<td>65</td>
<td>1/month</td>
<td>monthly</td>
<td>M</td>
</tr>
</tbody>
</table>

* - Monitoring requirement only.  
** - The Monthly Average for E. coli is a geometric mean.  
*** - Parameter not previously established in previous state operating permit.  
**** - C = 24-hour composite 
G = Grab  
E = Total Measured / Measured  
Basis for Limitations Codes:  
1. State or Federal Regulation/Law  
2. Water Quality Standard (includes RPA)  
3. Water Quality Based Effluent Limits  
4. Antidegradation Review  
5. Antidegradation Policy  
6. Water Quality Model  
7. Best Professional Judgment  
8. TMDL or Permit in lieu of TMDL  
9. WET Test Policy  

**OUTFALLS #006 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.

- **Biochemical Oxygen Demand (BOD<sub>5</sub>).** Effluent limitations have been retained from previous state operating permit, please see the APPLICABLE DESIGNATION OF WATERS OF THE STATE sub-section of the Effluent Limits Determination.

- **Total Suspended Solids (TSS).** Effluent limitations have been retained from previous state operating permit, please see the APPLICABLE DESIGNATION OF WATERS OF THE STATE sub-section of the Effluent Limits Determination.

- **Escherichia coli (E. coli).** Monthly average of 206 per 100 mL as a geometric mean and Weekly Average of 1030 per 100 mL as a geometric mean during the recreational season (April 1 – October 31), to protect Whole Body Contact Recreation (B) designated use of the receiving stream, as per 10 CSR 20-7.031(5)(C). An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d). The Geometric Mean is calculated by multiplying all of the data points and then taking...
the nth root of this product, where \( n = \# \) of samples collected. For example: Five \( E. \ coli \) samples were collected with results of 1, 4, 6, 10, and 5 (#/100mL). Geometric Mean = \( \sqrt[5]{(1)(4)(6)(10)(5)} \) = \( \sqrt[5]{1200} \) = 4.1 #/100mL.

- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(5)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L. No mixing considerations allowed; therefore, WLA = appropriate criterion.

<table>
<thead>
<tr>
<th>Season</th>
<th>Temp (°C)</th>
<th>pH (SU)</th>
<th>Total Ammonia Nitrogen</th>
<th>Total Ammonia Nitrogen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>CCC (mg/L)</td>
<td>CMC (mg/L)</td>
</tr>
<tr>
<td>Summer</td>
<td>26</td>
<td>7.8</td>
<td>1.5</td>
<td>12.1</td>
</tr>
<tr>
<td>Winter</td>
<td>6</td>
<td>7.8</td>
<td>3.1</td>
<td>12.1</td>
</tr>
</tbody>
</table>

**Summer: April 1 – September 30**

Chronic WLA: \( C_e = \frac{((1.02 + 0.0)1.5 – (0.0 * 0.01))/1.02}{1.02} \)

\( C_e = 1.5 \) mg/L

Acute WLA: \( C_e = \frac{((1.02 + 0.0)12.1 – (0.0 * 0.01))/1.02}{1.02} \)

\( C_e = 12.1 \) mg/L

\( LTA_e = 1.5 \) mg/L (0.7545) = 1.132 mg/L

\( LTA_a = 12.1 \) mg/L (0.287) = 3.47 mg/L

[CV = 0.68, 99th Percentile, 30 day avg.]

[CV = 0.68, 99th Percentile]

Use most protective number of \( LTA_e \) or \( LTA_a \).

MDL = 1.132 mg/L (3.489) = 3.9 mg/L

[CV = 0.68, 99th Percentile]

AML = 1.132 mg/L (1.22) = 1.4 mg/L

[CV = 0.68, 95th Percentile, n =30]

**Winter: October 1 – March 31**

Chronic WLA: \( C_e = \frac{((1.02 + 0.0)3.1 – (0.0 * 0.01))/1.02}{1.02} \)

\( C_e = 3.1 \) mg/L

Acute WLA: \( C_e = \frac{((1.02 + 0.0)12.1 – (0.0 * 0.01))/1.02}{1.02} \)

\( C_e = 12.1 \) mg/L

\( LTA_e = 3.1 \) mg/L (0.793) = 2.46 mg/L

\( LTA_a = 12.1 \) mg/L (0.340) = 4.11 mg/L

[CV = 0.56, 99th Percentile, 30 day avg.]

[CV = 0.56, 99th Percentile]

Use most protective number of \( LTA_e \) or \( LTA_a \).

MDL = 2.46 mg/L (2.94) = 7.2 mg/L

[CV = 0.56, 99th Percentile]

AML = 2.46 mg/L (1.18) = 2.9 mg/L

[CV = 0.56, 95th Percentile, n =30]

- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum.

- **Total Phosphorus and Total Nitrogen.** Monitoring required for facilities greater than 100,000 gpd design flow per 10 CSR 20-7.015(9)(D)7. Total Nitrogen shall be determined by testing for Total Kjeldahl Nitrogen (TKN) and Nitrate + Nitrite and reporting the sum of the results (reported as N). Nitrate + Nitrite can be analyzed together or separately.

- **pH.** – 6.5-9.0 SU. Technology based effluent limitations of 6.0-9.0 SU [10 CSR 20-7.015] are not protective of the Water Quality Standard, which states that water contaminants shall not cause pH to be outside the range of 6.5-9.0 SU. 10 CSR 20-7.015 allows pH for lagoons to be maintained above 6.0 SU. With no mixing zone, the water quality standard, ≥ 6.5 SU, must be met at the outfall.

- **Biochemical Oxygen Demand (BOD\textsubscript{5}) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD\textsubscript{5}) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 65% removal efficiency for BOD\textsubscript{5}.

- **Total Suspended Solids (TSS) Percent Removal.** In accordance with 40 CFR Part 133, removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD\textsubscript{5}) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. This facility is required to meet 65% removal efficiency for TSS.
Whole Effluent Toxicity

**Acute Whole Effluent Toxicity** Monitoring requirement only. Monitoring is required to determine if reasonable potential exists for this facility’s discharge to exceed water quality standards.

Acute and/or Chronic Allowable Effluent Concentrations (AECs) for facilities that discharge to Waters of the State lacking designated uses, Class C, Class P (with default Mixing Considerations), or Lakes [10 CSR 20-7.031(5)(A)4.B.(IV)(b)] are 100%, 50%, 25%, 12.5%, & 6.25%.

Sampling Frequency Justification:

Sampling and Reporting Frequency for BOD, TSS, pH, and Ammonia was changed to monthly. Weekly sampling is required for E. coli, per 10 CSR 20-7.015(9)(D)6.A.

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

**Acute Whole Effluent Toxicity**

- No less than ONCE/PERMIT CYCLE:
  - Municipality with a design flow ≥ 22,500 gpd, but less than 1.0 MGD.
  - Other, please justify.

Sampling Type Justification

As per 10 CSR 20-7.015, BOD₅, TSS and WET test samples collected for lagoons may be grab samples. Grab samples must be collected for pH, Ammonia as N, E. coli, Oil & Grease, and Total Phosphorus. This is due to the holding time restriction for E. coli, the volatility of Ammonia, and the fact that pH cannot be preserved and must be sampled in the field. As Ammonia, Oil & Grease, and Total Phosphorus samples must be immediately preserved, these samples are to be collected as a grab. For further information on sampling and testing methods please review 10 CSR 20-7.015(9)(D) 2.

**OUTFALL #006 – GENERAL CRITERIA CONSIDERATIONS:**

In accordance with 40 CFR 122.44(d)(1), effluent limitations shall be placed into the permit for those pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The rule further states that pollutants which have been determined to cause, have the reasonable potential to cause, or contribute to an excursion above a narrative criterion within an applicable State water quality standard, the permit shall contain a numeric effluent limitation to protect that narrative criterion. In order to comply with this regulation, the permit writer will complete reasonable potential determinations on whether the discharge will violate any of the general criteria listed in 10 CSR 20-7.031(4). These specific requirements are listed below followed by derivation and discussion (the lettering matches that of the rule itself, under 10 CSR 20-7.031(4)). It should also be noted that Section 644.076.1, RSMo as well as Section D – Administrative Requirements of Standard Conditions Part I of this permit states that it shall be unlawful for any person to cause or permit any discharge of water contaminants from any water contaminant or point source located in Missouri that is in violation of sections 644.006 to 644.141 of the Missouri Clean Water Law or any standard, rule or regulation promulgated by the commission.

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses. The discharge from this facility is made up of treated domestic wastewater. Based upon a review of a recent Report of Compliance Inspection dated September 14, 2016, no evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, there had been no indication to the Department that the stream has had issued maintaining beneficial uses as a result of the wastewater irrigation. Therefore, based on the information reviewed during the drafting of this permit, and the fact that the facility does not discharge, no reasonable potential to cause or contribute to an excursion of this criterion exists.

(B) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. Please see (A) above as justification is the same.

(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. Please see (A) above as justification is the same.

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life. This permit contains final effluent limitations which are protective of both acute and chronic toxicity for various pollutants that are either expected to be discharged by domestic wastewater facilities or that were disclosed by this facility on the application for permit coverage. Based on the information reviewed during the drafting of this permit, it has been determined if the facility meets...
final effluent limitations established in this permit, there is no reasonable potential for the discharge to cause an excursion of this criterion.

(E) There shall be no significant human health hazard from incidental contact with the water. Please see (D) above as justification is the same.

(F) There shall be no acute toxicity to livestock or wildlife watering. Please see (D) above as justification is the same.

(G) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community. Please see (A) above as justification is the same.

(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. The discharge from this facility is made up of treated domestic wastewater. No evidence of an excursion of this criterion has been observed by the Department in the past and the facility has not disclosed any other information related to the characteristics of the discharge on their permit application which has the potential to cause or contribute to an excursion of this narrative criterion. Additionally, any solid wastes received or produced at this facility are wholly contained in appropriate storage facilities, are not discharged, and are disposed of offsite. This discharge is subject to Standard Conditions Part III, which contains requirements for the management and disposal of sludge to prevent its discharge. Therefore, this discharge does not have reasonable potential to cause or contribute to an excursion of this criterion.

PERMITTED FEATURE #003, #004, & #005 – IRRIGATION BASINS

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

• Precipitation. Monitoring requirement to ensure appropriate wastewater irrigation is conducted to account for accumulated water in the storage basin.

Sampling Frequency Justification:
Sampling frequency has been determined to be appropriate so it has been retained from the previous state operating permit.

Sampling Type Justification:
Sampling type has been determined to be appropriate so it has been retained from the previous state operating permit.

PERMITTED FEATURES #007, #008, #009, #010, #011, #012, #013, #014, #015, #016, #017, #018, & #019 - IRRIGATION FIELDS

• Irrigation Period. Monitoring requirement only. Monitoring for the Irrigation Period is included to determine if proper application is occurring on the wastewater irrigation fields.

• Volume Irrigated. Monitoring requirement only. Monitoring for the Volume Irrigated is included to determine if proper application is occurring on the wastewater irrigation fields.

• Application Area. Monitoring requirement only. Monitoring for the Application Area is included to determine if proper application is occurring on the wastewater irrigation fields.

• Application Rate. Monitoring requirement only. Monitoring for the Application Rate is included to determine if proper application is occurring on the wastewater irrigation fields.

Sampling Frequency Justification:
Sampling frequency has been determined to be appropriate so it has been retained from the previous state operating permit.

Sampling Type Justification:
Sampling type has been determined to be appropriate so it has been retained from the previous state operating permit.
Part VII – Cost Analysis for Compliance

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a “finding of affordability” on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

☐ - The Department is required to determine “findings of affordability” because the permit applies to a combined or separate sanitary sewer system for a publically-owned treatment works.

Cost Analysis for Compliance - The Department has made a reasonable search for empirical data indicating the permit is affordable. The search consisted of a review of Department records that might contain economic data on the community, a review of information provided by the applicant as part of the application, and public comments received in response to public notices of this draft permit. If the empirical cost data was used by the permit writer, this data may consist of median household income, any other ongoing projects that the Department has knowledge, and other demographic financial information that the community provided as contemplated by Section 644.145.3. See Appendix – Cost Analysis for Compliance

Part VIII – Administrative Requirements

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

PERMIT SYNCHRONIZATION:
The Department of Natural Resources is currently undergoing a synchronization process for operating permits. Permits are normally issued on a five-year term, but to achieve synchronization many permits will need to be issued for less than the full five years allowed by regulation. The intent is that all permits within a watershed will move through the Watershed Based Management (WBM) cycle together will all expire in the same fiscal year. This will allow further streamlining by placing multiple permits within a smaller geographic area on public notice simultaneously, thereby reducing repeated administrative efforts. This will also allow the Department to explore a watershed based permitting effort at some point in the future. 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 4 years old, that data may be re-submitted to meet the requirements of the renewal application. If the permit provides a schedule of compliance for meeting new water quality based effluent limits beyond the expiration date of the permit, the time remaining in the schedule of compliance will be allotted in the renewed permit. This permit will expire in the 4th Quarter of calendar year 2021.

PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing. The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit. For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☐ - The Public Notice period for this operating permit was from December 15, 2017 to January 16, 2018. No responses received.

DATE OF FACT SHEET: JANUARY 17, 2018

COMPLETED BY:

BRANT FARRIS, ENVIRONMENTAL SPECIALIST III
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
OPERATING PERMITS SECTION - DOMESTIC WASTEWATER UNIT
(660) 385-8061
brant.farris@dnr.mo.gov
## Appendices

### APPENDIX - CLASSIFICATION WORKSHEET:

<table>
<thead>
<tr>
<th>ITEM</th>
<th>POINTS POSSIBLE</th>
<th>POINTS ASSIGNED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Population Equivalent (P.E.) served (Max 10 pts.)</td>
<td>1 pt./10,000 PE or major fraction thereof.</td>
<td></td>
</tr>
<tr>
<td>Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)</td>
<td>1 pt. / MGD or major fraction thereof.</td>
<td></td>
</tr>
</tbody>
</table>

### EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missouri or Mississippi River</td>
<td>0</td>
</tr>
<tr>
<td>All other stream discharges except to losing streams and stream reaches supporting whole body contact</td>
<td>1</td>
</tr>
<tr>
<td>Discharge to lake or reservoir outside of designated whole body contact recreational area</td>
<td>2</td>
</tr>
<tr>
<td>Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation</td>
<td>3</td>
</tr>
</tbody>
</table>

### PRELIMINARY TREATMENT - Headworks

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening and/or comminution</td>
<td>3</td>
</tr>
<tr>
<td>Grit removal</td>
<td>3</td>
</tr>
<tr>
<td>Plant pumping of main flow (lift station at the headworks)</td>
<td>3</td>
</tr>
</tbody>
</table>

### PRIMARY TREATMENT

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary clarifiers</td>
<td>5</td>
</tr>
<tr>
<td>Combined sedimentation/digestion</td>
<td>5</td>
</tr>
<tr>
<td>Chemical addition (except chlorine, enzymes)</td>
<td>4</td>
</tr>
</tbody>
</table>

### REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push – button or visual methods for simple test such as pH, Settleable solids</td>
<td>3</td>
</tr>
<tr>
<td>Additional procedures such as DO, COD, BOD, titrations, solids, volatile content</td>
<td>5</td>
</tr>
<tr>
<td>More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.</td>
<td>7</td>
</tr>
<tr>
<td>Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph</td>
<td>10</td>
</tr>
</tbody>
</table>

### ALTERNATIVE FATE OF EFFLUENT

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct reuse or recycle of effluent</td>
<td>6</td>
</tr>
<tr>
<td>Land Disposal – low rate</td>
<td>3</td>
</tr>
<tr>
<td>High rate</td>
<td>5</td>
</tr>
<tr>
<td>Overland flow</td>
<td>4</td>
</tr>
</tbody>
</table>

Total from page **ONE (1)**: 15
## APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

<table>
<thead>
<tr>
<th>ITEM</th>
<th>POINTS POSSIBLE</th>
<th>POINTS ASSIGNED</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variation do not exceed those normally or typically expected</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Recurring deviations or excessive variations of more than 200 % in strength and/or flow</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Raw wastes subject to toxic waste discharge</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>SECONDARY TREATMENT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trickling filter and other fixed film media with secondary clarifiers</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches)</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Stabilization ponds without aeration</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Aerated lagoon</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Advanced Waste Treatment Polishing Pond</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Chemical/physical – without secondary</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Chemical/physical – following secondary</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Biological or chemical/biological</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Carbon regeneration</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>DISINFECTION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorination or comparable</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Dechlorination</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>On-site generation of disinfectant (except UV light)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>UV light</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td><strong>SOLIDS HANDLING - SLUDGE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solids Handling Thickening</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Anaerobic digestion</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Aerobic digestion</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Evaporative sludge drying</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mechanical dewatering</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Solids reduction (incineration, wet oxidation)</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Land application</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Total from page TWO (2)</td>
<td>----</td>
<td>7</td>
</tr>
<tr>
<td>Total from page ONE (1)</td>
<td>---</td>
<td>15</td>
</tr>
<tr>
<td>Grand Total</td>
<td>---</td>
<td>22</td>
</tr>
</tbody>
</table>

- A: 71 points and greater
- B: 51 points – 70 points
- C: 26 points – 50 points
- D: 0 points – 25 points
### APPENDIX – RPA RESULTS:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>CMC*</th>
<th>RWC Acute*</th>
<th>CCC*</th>
<th>RWC Chronic*</th>
<th>n**</th>
<th>Range max/min</th>
<th>CV***</th>
<th>MF</th>
<th>RP</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outfall #006</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Ammonia as Nitrogen (Summer) mg/L</td>
<td>12.1</td>
<td>7.11</td>
<td>1.5</td>
<td>7.11</td>
<td>20.00</td>
<td>2.8/0.3</td>
<td>0.68</td>
<td>2.54</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Total Ammonia as Nitrogen (Winter) mg/L</td>
<td>12.1</td>
<td>8.17</td>
<td>3.1</td>
<td>8.17</td>
<td>12.00</td>
<td>3.1/0.3</td>
<td>0.56</td>
<td>2.64</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td><strong>Outfalls #001 &amp; #002</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum, Total Recoverable</td>
<td>750.0</td>
<td>439.16</td>
<td>NA</td>
<td>NA</td>
<td>3.00</td>
<td>100/100</td>
<td>0.60</td>
<td>4.39</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Copper, Total Recoverable</td>
<td>22.0</td>
<td>10.98</td>
<td>14.1</td>
<td>10.98</td>
<td>3.00</td>
<td>2.5/2.5</td>
<td>0.60</td>
<td>4.39</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Iron, Total Recoverable</td>
<td>NA</td>
<td>273.26</td>
<td>1000.0</td>
<td>273.26</td>
<td>3.00</td>
<td>53/5</td>
<td>0.60</td>
<td>5.16</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Zinc, Total Recoverable</td>
<td>180.3</td>
<td>41.25</td>
<td>180.3</td>
<td>41.25</td>
<td>3.00</td>
<td>8/2.5</td>
<td>0.60</td>
<td>5.16</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Cyanide</td>
<td>22.0</td>
<td>10.98</td>
<td>5.0</td>
<td>10.98</td>
<td>3.00</td>
<td>2.5/2</td>
<td>0.60</td>
<td>4.39</td>
<td>YES</td>
<td></td>
</tr>
</tbody>
</table>

N/A – Not Applicable  
* - Units are (μg/L) unless otherwise noted.  
** - If the number of samples is 10 or greater, then the CV value must be used in the WQBEL for the applicable constituent. If the number of samples is < 10, then the default CV value must be used in the WQBEL for the applicable constituent.  
*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.  
RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).  
n – Is the number of samples.  
MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.  
RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).  
Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.
APPENDIX – ALTERNATIVE: WASTEWATER IRRIGATION FIELD MAPS
APPENDIX – COST ANALYSIS FOR COMPLIANCE:

Missouri Department of Natural Resources
Water Protection Program
Cost Analysis for Compliance
(In accordance with RSMo 644.145)

Centralia Wastewater Treatment Facility, Permit Renewal
City of Centralia
Missouri State Operating Permit #MO-0028789

Section 644.145 RSMo requires the Department of Natural Resources (“Department” or “DNR”) to make a “finding of affordability” when “issuing permits under” or “enforcing provisions of” state or federal clean water laws “pertaining to any portion of a combined or separate sanitary sewer system for publicly-owned treatment works.” This cost analysis does not dictate that a permittee will upgrade their facility, or how the permittee will comply with the new permit requirements. This cost analysis is based on data available to the Department as provided by the permittee and data obtained from readily available sources. For the most accurate analysis, it is essential that the permittee provides the Department with current information about the City’s financial and socioeconomic situation. The financial questionnaire available to permittees on the DNR website (http://dnr.mo.gov/forms/780-2511-f.pdf) should have been submitted with the permit renewal application. If it was not submitted with the renewal application, the Department sent a request to complete the form with the welcome letter. The Department currently estimates the cost for reconstruction of a treatment plant using a software program from Hydromantis’ titled CAPDEWORKS (CapDet). CapDet is a preliminary design and costing software program for wastewater treatment plants utilizing national indices, such as the Marshall and Swift Index and Engineering News Records Cost Index to price the development of capital, operating, maintenance, material, and energy costs for each treatment technology. The program works from national indices therefore; the estimated costs are expected to be higher than actual costs as each community is unique in its budget commitments and treatment design. The cost estimates located within this document are for the construction of a brand new treatment facility or system that is the most practical to facilitate compliance with new requirements.

The Department is required to issue a permit with final effluent limits in accordance with 644.051.1.(1) RSMo, 644.051.1.(2) RSMo, and the Clean Water Act. The table below summarizes the results of this cost analysis. The practical result of this analysis is to incorporate an adequate compliance schedule into the permit that will mitigate the financial burden of the new permit requirements.

<table>
<thead>
<tr>
<th>Estimated present worth to upgrade to an UV disinfection system</th>
<th>Median Household Income (MHI) for the City of Centralia</th>
<th>Estimated monthly cost per user as a percent of MHI</th>
<th>Financial Burden</th>
<th>Schedule of Compliance to meet E. coli</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,368,952</td>
<td>$40,455</td>
<td>0.4%</td>
<td>Low</td>
<td>4 years</td>
</tr>
</tbody>
</table>

Flow evaluated: Outfall #001 - 142,000 gpd and Outfall #002 - 660,000 gpd

Residential Connections: 2,142
Commercial and Industrial Connections: 248
Total Connections for this facility: 2,390

New Permit Requirements:

The permit requires compliance with new effluent limitations for *E. coli*, which may require the design, construction and operation of different treatment technology. The cost assumptions in this cost analysis anticipate complete replacement of the existing treatment facility. To calculate the estimated user cost per 5,000 gallons, the Department used the equations currently being used in the Financial Assistance Center’s rate calculator. The equations account for replacement of equipment during the life of the treatment facility, debt retirement, capital costs, and an inflation factor. The calculator evaluates multiple technologies through CapDet at a range of flows, then, using a linear interpolation, develops a spreadsheet outlining high and low costs for treatment plants. For this analysis the Department has selected the mechanical treatment technology that could be the most practical solution to meet the new requirements for the community. Because the methods used to derive the analysis estimate costs that are greater than actual costs associated with an upgrade, it reflects a conservative estimate anticipated for a community. An overestimation of costs is due to the fact that it is not possible for the permit writer to determine what existing equipment and structures will be reused in the upgraded facility before an engineer completes a facility design.

The permit also requires compliance with new monitoring requirements for total nitrogen and total phosphorus and with revised effluent limitations for Ammonia as N.
The size of the facility evaluated for upgrades was chosen based on the permitted design flow. If significant population growth is expected in the community, or if a significant portion of the flow is due to I&I, the flows used in the Facility Plan prepared by a consulting engineer may be different than this flow and the estimated costs within this analysis.

**Anticipated Costs Associated with Complying with the New Requirements:**

**Cost associated with mechanical treatment:**
The total present worth to add UV disinfection treatment systems for both outfalls is estimated at $1,284,491 (Outfall #001 – $238,930, Outfall #002/#006 - $1,045,561) (*CAPDETWORKS cost estimator was used*). This cost, if financed through user fees, might cost each household approximately $3.57 per month (outfall #001 - $0.98, Outfall #002/#006 - $2.59). Due to the design limitations in the CapDet cost estimator, the costs for disinfection have been over estimated. For any flows less than 100,000 gpd, CapDet assumes a flow of 100,000 gpd when estimating the cost for UV disinfection. The assumptions for chlorine disinfection are that the chlorine used will either be in the liquid or gas phase and not the tablets which are used by many smaller facilities.

**Cost associated with new sampling requirements:**
The total cost estimated for new quarterly monitoring requirements for Total Phosphorus and Total Nitrogen is $388 annually, or $1,164 annually for all three outfalls. This cost, if financed through user fees, might cost each household an extra $0.04 per month. A community sets their user rates based on several factors. The percentage of the current user rate that is available to cover new debt is unknown to the Department.

For any questions associated with the *CAPDETWORKS cost estimator*, please contact the Engineering Section at (573) 751-6621.

---

**A community’s financial capability and ability to raise or secure necessary funding:**

- **Current Monthly User Rates per 5,000 gallons:** $10.55
- **Municipal Bond Rating (if applicable):** Not provided nor obtained
- **Bonding Capacity:** $10,475,000
- **Median household income (MHI):** $40,455
- **Current outstanding debt for the WWTP:** $0
- **Amount within the current user rate used toward payments on outstanding debt related to the current wastewater infrastructure:** NA

**Affordability of pollution control options for the individuals or households at or below the median household income level of the community:**

**A  Current Costs**

- **Current annual operating costs (exclude depreciation):** $72,566

**B-1 Estimated Costs for Disinfection Control Option and Sampling**

- **Estimated total present worth of pollution control:** $1,284,491
- **Estimated capital cost of pollution control:** $922,813
- **Annual cost of operation and maintenance:** $29,022
- **Estimated resulting user cost per household per month:** $14.12
- **Estimated resulting user cost per household per month plus sampling:** $14.16
- **Cost per household as a percent of median household income:** 0.4%

These costs assume a 5% interest rate over 20 years for UV Disinfection.
(3) An evaluation of the overall costs and environmental benefits of the control technologies;

The investment in wastewater treatment will provide several social, environmental and economic benefits. Improved wastewater provides benefits such as avoided health costs due to water-related illness, enhanced environmental ecosystem quality, and improved natural resources. The preservation of natural resources has been proven to increase the economic value and sustainability of the surrounding communities. Maintaining Missouri’s water quality standards fulfill the goals of restoring and maintaining the chemical, physical and biological integrity of the receiving stream; and, where attainable, to achieves a level of water quality that provides for the protection and propagation of fish, shellfish, wildlife and recreation in and on the water.

Disinfection

E. coli is a species of bacteria that normally live in the intestines of humans and warm-blooded animals. While some strains of E. coli are harmless, there are several strains that can cause severe diarrhea, abdominal cramps, and severe kidney failure. The people most susceptible to these consequences are young children, the elderly and those with weakened immune systems. The receiving stream that your facility discharges to contains the WBC-B designated use to protect human health in accordance with Water Quality Standards (10 CSR 20-7.031) and the Clean Water Act. The disinfection of wastewater effluent benefits human health by reducing exposure to disease-causing bacteria, such as E.coli, and viruses and reducing health care costs to those infected by contaminated water. The construction and installation of a disinfection system at the treatment facility will protect human health as well as meet water quality standards.

Nutrient Monitoring

Nutrients are mineral compounds that are required for organisms to grow and thrive. Of the six (6) elemental macronutrients, Nitrogen and Phosphorus are generally not readily available and limit growth of organisms. Excess nitrogen and phosphorus will cause a shift in the ecosystem’s food web. Once excess nitrogen and phosphorous are introduced into a waterbody, some species’ populations will dramatically increase, while other populations will not be able to sustain life. Competition and productivity are two factors in which nutrients can alter aquatic ecosystems and the designated uses of a waterbody. For example, designated uses, such as drinking water sources and recreational uses become impaired when algal blooms take over a waterbody. These blooms can cause foul tastes and odors in the drinking water, unsightly appearance, and fish mortality in the waterbody. Some algae also produce toxins that may cause serious adverse health conditions such as liver damage, tumor promotion, paralysis, and kidney damage. The monitoring requirements for Nitrogen and Phosphorus have been added to the permit to provide data regarding the health of the receiving stream’s aquatic life. A healthy ecosystem is beneficial as it provides reduced impacts on human and aquatic health as well as recreational opportunities.

(4) Inclusion of ongoing costs of operating and maintaining the existing wastewater collection and treatment system, including payments on outstanding debts for wastewater collection and treatment systems when calculating projected rates:

The City has reported that they have no outstanding debts for the current wastewater collection and treatment systems.

(5) An inclusion of ways to reduce economic impacts on distressed populations in the community, including but not limited to low and fixed income populations. This requirement includes but is not limited to:

(a) Allowing adequate time in implementation schedules to mitigate potential adverse impacts on distressed populations resulting from the costs of the improvements and taking into consideration local community economic considerations.

A schedule of compliance will be provided based on the results of this cost analysis. The schedule of compliance is provided to ensure that the entity has time to reasonably plan for compliance with the new permit requirements. The time provided ensures the entity has time to hire an engineer, develop facility plans, hold community meetings, seek an appropriate funding source, and construct the facility. For compliance assistance, please visit the Department’s Community Assistance webpage at https://dnr.mo.gov/assistance/. If it is determined by the permittee that a longer schedule of compliance is necessary due to financial reasons, please contact the permit writer and request modification of the permit schedule.

An integrated plan may be an appropriate option if they community needs to meet other environmental obligations as well as the new requirements within this permit. The integrated plan needs to be well thought out with specific timeframes built into the management plan in which the municipality can reasonably commit. The plan should be designed to allow your municipality to meet their Clean Water Act obligations by maximizing their infrastructure improvement dollars through the appropriate sequencing of work. For further information on how to develop an integrated plan, please see the Department publication, “Missouri Integrated Planning Framework,” at http://dnr.mo.gov/pubs/pub2684.htm.
If the permittee can demonstrate that the proposed pollution controls result in substantial and widespread economic and social impact, the permittee may use Factor 6 of the Use Attainability Analysis (UAA) 40 CFR 131.10(g)(6) in the form of a variance. This process is completed by determining the treatment type with the highest attainable effluent quality that would not result in a socio-economic hardship. For more information on variance requests, please contact the Water Protection Program’s Special Projects Coordinator at 573-751-9391.

(b) Allowing for reasonable accommodations for regulated entities when inflexible standards and fines would impose a disproportionate financial hardship in light of the environmental benefits to be gained.

- If available, connection to a larger centralized sewer system in the area may be more cost effective for the community. This can be incorporated into an integrated plan.
- An opportunity may exist for the relocation of the point of discharge to a receiving stream capable of a greater mixing zone.
- The permittee may apply for State Revolving Fund (SRF) financial support in order to help fund a Capital Improvements Plan. Other loans and grants also exist for which the facility may be eligible. Contact information for the Department’s Financial Assistance Center (FAC) and more information can be found on the Department’s website at http://dnr.mo.gov/env/wpp/srf/wastewater-assistance.htm.

**Socioeconomic Data:**

The following table characterizes the current overall socioeconomic condition of the community as compared to the overall socioeconomic condition of the State of Missouri. The following information was compiled using the latest U.S. Census data.

<table>
<thead>
<tr>
<th>Indicator No.</th>
<th>Select a Community from the Dropdown List →</th>
<th>Centralia City</th>
<th>Missouri State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Population (2015)</td>
<td>4,159</td>
<td>6,045,448</td>
</tr>
<tr>
<td>2</td>
<td>Percent Change in Population (2000-2015)</td>
<td>10.2%</td>
<td>8.0%</td>
</tr>
<tr>
<td>3</td>
<td>2015 Median Household Income (in 2016 Dollar)</td>
<td>$40,455</td>
<td>$48,582</td>
</tr>
<tr>
<td>4</td>
<td>Percent Change in Median Household Income (2000-2015)</td>
<td>-15.6%</td>
<td>-7.8%</td>
</tr>
<tr>
<td>5</td>
<td>Median Age (2015)</td>
<td>37.6</td>
<td>36.2</td>
</tr>
<tr>
<td>6</td>
<td>Change in Median Age in Years (2000-2015)</td>
<td>1.9</td>
<td>2.1</td>
</tr>
<tr>
<td>7</td>
<td>Unemployment Rate (2015)</td>
<td>4.1%</td>
<td>7.5%</td>
</tr>
<tr>
<td>8</td>
<td>Percent of Population Below Poverty Level (2015)</td>
<td>18.4%</td>
<td>15.6%</td>
</tr>
<tr>
<td>9</td>
<td>Percent of Household Received Food Stamps (2015)</td>
<td>13.9%</td>
<td>13.5%</td>
</tr>
<tr>
<td>10</td>
<td>(Primary) County Where the Community Is Located</td>
<td>Boone County</td>
<td></td>
</tr>
</tbody>
</table>

(6) An assessment of other community investments and operating costs relating to environmental improvements and public health protection;

The City did not report any other investments relating to environmental improvements.

(7) An assessment of factors set forth in the United States Environmental Protection Agency's guidance, including but not limited to the "Combined Sewer Overflow Guidance for Financial Capability Assessment and Schedule Development" that may ease the cost burdens of implementing wet weather control plans, including but not limited to small system considerations, the attainability of water quality standards, and the development of wet weather standards;
Secondary indicators for consideration: The following table below characterizes the community’s overall financial capability to raise the necessary funds to meet the new permit requirements.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Strong (3 points)</th>
<th>Mid-Range (2 points)</th>
<th>Weak (1 point)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond Rating Indicator</td>
<td>Above BBB or Baa</td>
<td>BB or Baa</td>
<td>Below BBB or Baa</td>
<td>Not provided nor found</td>
</tr>
<tr>
<td>Overall Net Debt as a % of Full Market Property Value</td>
<td>Below 2%</td>
<td>2% - 5%</td>
<td>Above 5%</td>
<td>1</td>
</tr>
<tr>
<td>Unemployment Rate (2015)</td>
<td>Beyond 1% below Missouri average of 7.5%</td>
<td>± 1% of Missouri average of 7.5%</td>
<td>Beyond 1% above Missouri average of 7.5%</td>
<td>3</td>
</tr>
<tr>
<td>2015 Median Household Income (in 2016 Dollar)</td>
<td>Beyond 25% above Missouri MHI ($48,582)</td>
<td>± 25% of Missouri MHI ($48,582)</td>
<td>Beyond 25% below Missouri MHI ($48,582)</td>
<td>2</td>
</tr>
<tr>
<td>Percent of Population Below Poverty Level (2015)</td>
<td>Beyond 10% below Missouri average of 15.6%</td>
<td>± 10% of Missouri average of 15.6%</td>
<td>Beyond 10% above Missouri average of 15.6%</td>
<td>2</td>
</tr>
<tr>
<td>Percent of Household Received Food Stamps (2015)</td>
<td>Beyond 5% below Missouri average of 13.5%</td>
<td>± 5% of Missouri average of 13.5%</td>
<td>Beyond 5% above Missouri average of 13.5%</td>
<td>2</td>
</tr>
<tr>
<td>Property Tax Revenues as a % of Full Market Property Value</td>
<td>Below 2%</td>
<td>2% - 4%</td>
<td>Above 4%</td>
<td>3</td>
</tr>
<tr>
<td>Property Tax Collection Rate</td>
<td>Above 98%</td>
<td>94% - 98%</td>
<td>Below 94%</td>
<td>Not Provided</td>
</tr>
<tr>
<td>Total Average Score</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Financial Capability Matrix: The results of the Financial Capability Indicator score and the residential indicator calculated above are considered jointly in the Financial Capability Matrix to determine the financial burden that could occur as a result from compliance with the new requirements of the permit.

In the following matrix, the results are a low, medium, or high financial burden.

- Financial Capability (FCI) Indicators Average Score: 2.2
- UV Disinfection Residential Indicator (RI, from Criteria #2 above): 0.4%

<table>
<thead>
<tr>
<th>Financial Capability Indicators Score from above</th>
<th>Residential Indicator (User cost as a % of MHI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (Below 1%)</td>
<td>Mid-Range (Between 1.0% and 2.0%)</td>
</tr>
<tr>
<td>Weak (below 1.5)</td>
<td>Medium Burden</td>
</tr>
<tr>
<td>Mid-Range (1.5 – 2.5)</td>
<td>Low Burden</td>
</tr>
<tr>
<td>Strong (above 2.5)</td>
<td>Low Burden</td>
</tr>
</tbody>
</table>

- Estimated Financial Burden for UV Disinfection: Low Burden

(8) An assessment of any other relevant local community economic condition.

The City reported that they have a $2,390,000 revenue bond to refinance the Rec Center and for pool renovations, with a payoff in 2035. The City reported that it has a $1,050,000 Lease Purchase/Revenue Bond for an Electric Substation that will be paid off in July 2024. The City also reported that they have a Library bond for $36,960 with a payoff in March 2017. The City reported that they are heavily dependent upon sales tax. They also reported that they have one major user of water and wastewater services, an industry located in the city that is currently doing well.
The Department contracted with Wichita State University to complete an assessment tool that would allow for predictions on rural Missouri community populations and future sustainability. The purpose of the study is to use a statistical modeling analysis in order to determine factors associated with each rural Missouri community that would predict the future population changes that could occur in each community. A stepwise regression model was applied to 19 factors which were determined as predictors of rural population change in Missouri. The model established a hierarchy of the predicting factors which allowed the model to place a weighted value on each of the factors. A total of 745 rural towns and villages in Missouri received a weighted value for each of the predicting factors. The weighted values for each town / village were then added together to determine an overall decision score. The overall decision scores were then divided into five categories and each town was assigned to a different categorical group based on the overall decision score.

The categorical groups were developed from the range of overall scores across all rural towns and villages within Missouri. The range covers 1,191 score points (-245 to 946).

Based on the assessment tool, the City of Centralia has been determined as a category (5) community. This means that the City of Centralia is predicted to be stable over time.

**Conclusion and Finding**
As a result of new regulations, the Department is proposing modifications to the current operating permit that may require the permittee to add disinfection and to conduct additional sampling for Total Nitrogen and Total Phosphorus.

The Department considered the eight (8) criteria presented in subsection 644.145 RSMo. when evaluating the cost associated with the relevant actions. Using this analysis, the Department finds that an UV Disinfection system is the most practical and affordable option for your community. The construction and operation of an UV Disinfection system will ensure that the individuals within the community will not be required to make unreasonable sacrifices in their essential lifestyle or spending patterns or undergo hardships in order to make the projected monthly payments for sewer connections.

In accordance with 40 CFR § 122.47(a)(1) and 10 CSR 20-7.031(11), compliance must occur as soon as possible. Therefore, based on this analysis including the Rural Population Sustainability Assessment Tool the permit holder has received a four (4) year schedule of compliance for the design and construction of an UV Disinfection system. The following suggested milestones are an example of a timeline that will keep the permit holder on track to maintain compliance with this permit. It should be noted that once the permit holder’s engineer has completed facility design with actual costs associated with compliance of this permit, it may be necessary for the permit holder to request additional time within the schedule of compliance. The department is committed to reviewing all requests for additional time in the schedule of compliance where adequate justification is provided.

**Suggested milestones to meet within each year listed below:**

Year 1. Hire an engineer, evaluate rate structure and treatment systems
Year 2. Hold bond election and apply for State Revolving Fund loans and/or grants, and submit facility plan
Year 3. Submit facility plan and apply for Construction Permit and submit an application for renewal of the existing operating permit with new financial and socio-economic data, close on loan
Year 4. Begin and complete construction

The schedule of compliance allows the community the first three years to hire an engineer, evaluate operations and rate structure, obtain an engineering report, hold a bond election, and close on a loan. The remaining one year of the schedule give the community ample time to construct the facility and complete the project. If the community wishes to seek funding from the Department, please contact the Financial Assistance Center for more information. [http://www.dnr.mo.gov/env/Wpp/srf/index.html](http://www.dnr.mo.gov/env/Wpp/srf/index.html)

The Department is committed to reassessing the cost analysis for compliance at renewal to determine if the initial schedule of compliance will accommodate the socioeconomic data and financial capability of the community at that time. In this longer time frame, the Department will work with you to explore the wastewater treatment options that make the most sense for your community. By working more closely with your community, the Department and permittees will be able to identify opportunities to extend the schedule of compliance, if appropriate. Because each community is unique, we want to make sure that you have the opportunity to consider all your options and tailor solutions to best meet your community’s needs. The Department understands the economic challenges associated with achieving compliance, and is committed to using all available tools to make an accurate and practical finding of affordability for the communities in the State.

This determination is based on readily available data and may overestimate the financial impact on the community. The community’s facility plan that is submitted as a part of the construction permit process includes a discussion of community details, what the community can afford, existing obligations, future growth potential, an evaluation of options available to the community with cost information, and a discussion on no-discharge alternatives. The cost information provided through the facility plan process, which is developed by the community and their engineer, is more comprehensive of the community’s individual factors in relation to selected treatment technology and costing information.
References:

3. ($14.16/($40,455/12))100% = 0.4%  (UV + sampling)

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

Part I – General Conditions

Section A – Sampling, Monitoring, and Recording

1. Sampling Requirements.
   a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
   b. All samples shall be taken at the outfall(s) or Missouri Department of Natural Resources (Department) approved sampling location(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.

2. Monitoring Requirements.
   a. Records of monitoring information shall include:
      i. The date, exact place, and time of sampling or measurements;
      ii. The individual(s) who performed the sampling or measurements;
      iii. The date(s) analyses were performed;
      iv. The individual(s) who performed the analyses;
      v. The analytical techniques or methods used; and
      vi. The results of such analyses.
   b. If the permittee monitors any pollutant more frequently than required by the permit at the location specified in the permit using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reported to the Department with the discharge monitoring report data (DMR) submitted to the Department pursuant to Section B, paragraph 7.

3. Sample and Monitoring Calculations. Calculations for all sample and monitoring results which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit.

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

5. Record Retention. Except for records of monitoring information required by the permit related to the permittee’s sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 40 CFR part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

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

Section B – Reporting Requirements

1. Planned Changes.
   a. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility when:
      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42; and
      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 amplify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites noted 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.
b. The following shall be included as information which must be reported within 24 hours under this paragraph:
   i. Any unanticipated bypass which exceeds any effluent limitation in the permit.
   ii. Any upset which exceeds any effluent limitation in the permit.
   iii. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit required to be reported within 24 hours.
   c. The Department may waive the written report on a case-by-case basis for reports under paragraph 2. b. of this section if the oral report has been received within 24 hours.

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

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

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

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

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

Section C – Bypass/Upset Requirements

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

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

b. **Notice.**
   i. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass.
   ii. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section B – Reporting Requirements, paragraph 5 (24-hour notice).
   c. **Prohibition of bypass.**
      i. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
         1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
         2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
         3. The permittee submitted notices as required under paragraph 2. b. of this section.
   ii. The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three (3) conditions listed above in paragraph 2. c. i. of this section.

3. **Upset Requirements.**
   a. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph 3. b. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
   b. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
      i. An upset occurred and that the permittee can identify the cause(s) of the upset;
      ii. The permitted facility was at the time being properly operated; and
      iii. The permittee submitted notice of the upset as required in Section B – Reporting Requirements, paragraph 2. b. ii. (24-hour notice).
   c. **Burden of proof.** In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

Section D – Administrative Requirements

1. **Duty to Comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Missouri Clean Water Law and Federal Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.
   a. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
   b. The Federal Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Federal Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement
2. Duty to Reapply.
   a. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.
   b. A permittee with a currently effective site-specific permit shall submit an application for renewal at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Department. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
   c. A permittees with currently effective general permit shall submit an application for renewal at least 30 days before the existing permit expires, unless the permittee has been notified by the Department that an earlier application must be made. The Department may grant permission for a later submission date. (The Department shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)
3. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
5. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
6. Permit Actions.
   a. Subject to compliance with statutory requirements of the Law and Regulations and any Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
      i. Violations of any terms or conditions of this permit or the law;
      ii. Having obtained this permit by misrepresentation or failure to disclose fully any relevant facts;
      iii. A change in any circumstances or conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge; or
      iv. Any reason set forth in the Law or Regulations.
   b. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
7. Permit Transfer.
   a. Subject to 10 CSR 20-6.010, an operating permit may be transferred upon submission to the Department of an application to transfer signed by the existing owner and the new owner, unless prohibited by the terms of the permit. Until such time the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
   b. The Department may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Missouri Clean Water Law or the Federal Clean Water Act.
   c. The Department, within 30 days of receipt of the application, shall notify the new permittee of its intent to revoke or reissue or transfer the permit.
8. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the Federal Clean Water Act within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
9. Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege.
10. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

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

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

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

14. **Severability.** The provisions of the permit are severable, and if any provision of the permit, or the application of any provision of the permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of the permit, shall not be affected thereby.
PART II - SPECIAL CONDITIONS – PUBLICLY OWNED TREATMENT WORKS
SECTION A – INDUSTRIAL USERS

1. Definitions
Definitions as set forth in the Missouri Clean Water Laws and approved by the Missouri Clean Water Commission shall apply to terms used herein.

Significant Industrial User (SIU). Except as provided in the General Pretreatment Regulation 10 CSR 20-6.100, the term Significant Industrial User means:
1. All Industrial Users subject to Categorical Pretreatment Standards; and
2. Any other Industrial User that: discharges an average of 25,000 gallons per day or more of process wastewater to the Publicly-Owned Treatment Works (POTW) (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastestream which makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the Industrial User has a reasonable potential for adversely affecting the POTW’s or for violating any Pretreatment Standard or requirement.


2. Identification of Industrial Discharges
Pursuant to 40 CFR 122.44(j)(1), all POTWs shall identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging to the POTW subject to Pretreatment Standards under section 307(b) of the CWA and 40 CFR 403.

3. Application Information
Applications for renewal or modification of this permit must contain the information about industrial discharges to the POTW pursuant to 40 CFR 122.21(j)(6)

4. Notice to the Department
Pursuant to 40 CFR 122.42(b), all POTWs must provide adequate notice of the following:
1. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA if it were directly discharging these pollutants; and
2. Any substantial change into the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

For purposes of this paragraph, adequate notice shall include information on:
   i. the quality and quantity of effluent introduced into the POTW; and
   ii. any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

For POTWs without an approved pretreatment program, the notice of industrial discharges which was not included in the permit application shall be made as soon as practicable. For POTWs with an approved pretreatment program, notice is to be included in the annual pretreatment report required in the special conditions of this permit. Notice may be sent to:

   Missouri Department of Natural Resources
   Water Protection Program
   Attn: Pretreatment Coordinator
   P.O. Box 176
   Jefferson City, MO 65102
STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
March 1, 2015

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

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation for domestic wastewater and industrial process wastewater. This permit also incorporates applicable federal sludge disposal requirements under 40 CFR 503 for domestic wastewater. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFR 503 for domestic wastewater. EPA has reviewed and accepted these standard sludge conditions. EPA may choose to issue a separate sludge addendum to this permit or a separate federal sludge permit at their discretion to further address the federal requirements.

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

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

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

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

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

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

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

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

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

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

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

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

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

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

1. Sludge incineration facilities shall comply with the requirements of 40 CFR 503 Subpart E; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.

2. Permittee may be authorized under the facility description of this permit to store incineration ash in lagoons or ash ponds. This permit does not authorize the disposal of incineration ash. Incineration ash shall be disposed in accordance with 10 CSR 80; or if the ash is determined to be hazardous with 10 CSR 25.

3. In addition to normal sludge monitoring, incineration facilities shall report the following as part of the annual report, quantity of sludge incinerated, quantity of ash generated, quantity of ash stored, and ash used or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.

SECTION F – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites of domestic facilities shall comply with the requirements in 40 CFR 503 Subpart C; air pollution control regulations under 10 CSR 10; and solid waste management regulations under 10 CSR 80.

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

SECTION G – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the facility description or the special conditions of the issued NPDES permit.

2. Land application sites within a 20 miles radius of the wastewater treatment facility are authorized under this permit when biosolids are applied for beneficial use in accordance with these standard conditions unless otherwise specified in a site specific permit. If the permittee’s land application site is greater than a 20 mile radius of the wastewater treatment facility, approval must be granted from the Department.

3. Land application shall not adversely affect a threatened or endangered species or its designated critical habitat.

4. Biosolids shall not be applied unless authorized in this permit or exempted under 10 CSR 20, Chapter 6.
   a. This permit does not authorize the land application of domestic sludge except for when sludge meets the definition of biosolids.
   b. This permit authorizes “Class A or B” biosolids derived from domestic wastewater and/or process water sludge to be land applied onto grass land, crop land, timber or other similar agricultural or silviculture lands at rates suitable for beneficial use as organic fertilizer and soil conditioner.

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

6. Agricultural and Silvicultural Sites:
   Septage – Based on Water Quality guide 422 (WQ422) published by the University of Missouri
   a. Haulers that land apply septage must obtain a state permit
   b. Do not apply more than 30,000 gallons of septage per acre per year.
   c. Septage tanks are designed to retain sludge for one to three years which will allow for a larger reduction in pathogens and vectors, as compared to other mechanical type treatment facilities.
   d. To meet Class B sludge requirements, maintain septage at 12 pH for at least thirty (30) minutes before land application. 50 pounds of hydrated lime shall be added to each 1,000 gallons of septage in order to meet pathogen and vector stabilization for septage biosolids applied to crops, pastures or timberland.
   e. Lime is to be added to the pump truck and not directly to the septic tanks, as lime would harm the beneficial bacteria of the septic tank.
Biosolids - Based on Water Quality guide 423, 424, and 425 (WQ423, WQ424, WQ425) published by the University of Missouri;

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

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

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Biosolids ceiling concentration 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pollutant</td>
</tr>
<tr>
<td>Arsenic</td>
<td>75</td>
</tr>
<tr>
<td>Cadmium</td>
<td>85</td>
</tr>
<tr>
<td>Copper</td>
<td>4,300</td>
</tr>
<tr>
<td>Lead</td>
<td>840</td>
</tr>
<tr>
<td>Mercury</td>
<td>57</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>75</td>
</tr>
<tr>
<td>Nickel</td>
<td>420</td>
</tr>
<tr>
<td>Selenium</td>
<td>100</td>
</tr>
<tr>
<td>Zinc</td>
<td>7,500</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Biosolids Low Metal Concentration 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pollutant</td>
</tr>
<tr>
<td>Arsenic</td>
<td>41</td>
</tr>
<tr>
<td>Cadmium</td>
<td>39</td>
</tr>
<tr>
<td>Copper</td>
<td>1,500</td>
</tr>
<tr>
<td>Lead</td>
<td>300</td>
</tr>
<tr>
<td>Mercury</td>
<td>17</td>
</tr>
<tr>
<td>Nickel</td>
<td>420</td>
</tr>
<tr>
<td>Selenium</td>
<td>36</td>
</tr>
<tr>
<td>Zinc</td>
<td>2,800</td>
</tr>
</tbody>
</table>

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

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

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

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

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

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

a. Use best management practices when applying biosolids.
b. Biosolids cannot discharge from the land application site
c. Biosolid application is subject to the Missouri Department of Agriculture State Milk Board concerning grazing restrictions of lactating dairy cattle.
d. Biosolid application must be in accordance with section 4 of the Endangered Species Act.
e. Do not apply more than the agronomic rate of nitrogen needed.
f. The applicator must document the Plant Available Nitrogen (PAN) loadings, available nitrogen in the soil, and crop removal when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) When biosolids are land applied at an application rate greater than two dry tons per acre per year.
   i. PAN can be determined as follows and is in accordance with WQ426
      \[(\text{Nitrate} + \text{nitrite nitrogen}) + (\text{organic nitrogen} \times 0.2) + (\text{ammonia nitrogen} \times \text{volatilization factor})\].

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

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

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

i. No biosolids may be land applied in an area that it is reasonably certain that pollutants will be transported into waters of the state.
j. Do not apply biosolids to sites with soil that is snow covered, frozen or saturated with liquid without prior approval by the Department.
k. Biosolids / sludge applicators must keep detailed records up to five years.
SECTION H – CLOSURE REQUIREMENTS

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

2. Permittees of a domestic wastewater facility who plan to cease operation must obtain Department approval of a closure plan which addresses proper removal and disposal of all residues, including sludge, biosolids. Mechanical plants, sludge lagoons, ash ponds and other storage structures must obtain approval of a closure plan from the Department. Permittee must maintain this permit until the facility is closed in accordance with the approved closure plan per 10 CSR 20 – 6. 010 and 10 CSR 20 – 6.015.

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

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

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

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

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

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

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

### Table 5

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

\(^1\) Test total Kjeldahl nitrogen, if biosolids application is 2 dry tons per acre per year or less.

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

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

\(^4\) One sample for each 1,000 dry tons of sludge.

---

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

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

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

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

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

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

SECTION J – RECORD KEEPING AND REPORTING REQUIREMENTS

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

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

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

4. Reports shall be submitted as follows:

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

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

   EPA Region VII
   Water Compliance Branch (WACM)
   Sludge Coordinator
   11201 Renner Blvd.
   Lenexa, KS 66219
5. Annual report contents. The annual report shall include the following:
   a. Sludge and biosolids testing performed. Include a copy or summary of all test results, even if not required by the permit.
   b. Sludge or biosolids quantity shall be reported as dry tons for quantity generated by the wastewater treatment facility, the quantity stored on site at the end of the year, and the quantity used or disposed.
   c. Gallons and % solids data used to calculate the dry ton amounts.
   d. Description of any unusual operating conditions.
   e. Final disposal method, dates, and location, and person responsible for hauling and disposal.
      i. This must include the name, address for the hauler and sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name of that facility.
      ii. Include a description of the type of hauling equipment used and the capacity in tons, gallons, or cubic feet.
   f. Contract Hauler Activities:
      If contract hauler, provide a copy of a signed contract from the contractor. Permittee shall require the contractor to supply information required under this permit for which the contractor is responsible. The permittee shall submit a signed statement from the contractor that he has complied with the standards contained in this permit, unless the contract hauler has a separate sludge or biosolids use permit.
   g. Land Application Sites:
      i. Report the location of each application site, the annual and cumulative dry tons/acre for each site, and the landowners name and address. The location for each spreading site shall be given as a legal description for nearest ¼, ¼, Section, Township, Range, and county, or UTM coordinates. The facility shall report PAN when either of the following occurs: 1) When biosolids are greater than 50,000 mg/kg TN; or 2) when biosolids are land applied at an application rate greater than two dry tons per acre per year.
      ii. If the “Low Metals” criteria are exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative pollutant loading which has been reached at each site.
      iii. Report the method used for compliance with pathogen and vector attraction requirements.
      iv. Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM B2 – APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

PART A – BASIC APPLICATION INFORMATION

1. This application is for:
   - An operating permit and antidegradation review public notice.
   - A construction permit following an appropriate operating permit and antidegradation review public notice.
   - A construction permit, a concurrent operating permit and antidegradation review public notice.
   - A construction permit (submitted before Aug. 30, 2006 or antidegradation review is not required).
   - An operating permit for a new or unpermitted facility.
   - An operating permit renewal: Permit #MO-0028769
   - An operating permit modification: Permit #MO-0028769

<table>
<thead>
<tr>
<th>Construction Permit #</th>
<th>Expiration Date</th>
<th>Reason:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0028769</td>
<td>December 18, 2013</td>
<td>Remove aeration, baffle, and certain testing</td>
</tr>
</tbody>
</table>

1.1 Is this a Federal/State Funded Project?  ☐ Yes  ☑ No  Funding Agency/Project #: ______

1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)?  ☑ Yes  ☐ No

2. FACILITY

<table>
<thead>
<tr>
<th>NAME</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Centralia Wastewater Treatment Facility</td>
<td>573-682-2139</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS (PHYSICAL)</th>
<th>CITY</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varies, see outfall descriptions</td>
<td>Centralia</td>
<td>65240</td>
</tr>
</tbody>
</table>

2.1 LEGAL DESCRIPTION (Plant Site): attached §4, §4, §4, Sec. T, R County

2.2 UTM Coordinates Easting (X): attached Northing (Y): ______

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

3. OWNER  City of Centralia

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Centralia</td>
<td>Municipal</td>
<td>573-682-2139</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>CITY</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>114 South Rollins</td>
<td>Centralia</td>
<td>65240</td>
</tr>
</tbody>
</table>

3.1 Request review of draft permit prior to Public Notice?  ☑ Yes  ☐ No

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

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Centralia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>CITY</th>
<th>ZIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>114 South Rollins</td>
<td>Centralia</td>
<td>65240</td>
</tr>
</tbody>
</table>

5. OPERATOR

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>TELEPHONE NUMBER WITH AREA CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Forsee</td>
<td>Foreman</td>
<td>573-682-2139</td>
</tr>
</tbody>
</table>

6. FACILITY CONTACT

<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lynn Behrens</td>
<td>City Administrator</td>
</tr>
</tbody>
</table>

MO 790-1969 (09-06)
PART A – BASIC APPLICATION INFORMATION

7. ADDITIONAL FACILITY INFORMATION

7.1 BRIEF DESCRIPTION OF FACILITIES
A northwest lagoon system, a northeast lagoon system. Both lagoons can send treated water to one or all three land application holding basins, or to an overland flow system if necessary.

7.2 TOPOGRAPHIC MAP. ATTACH TO THIS APPLICATION A TOPOGRAPHIC MAP OF THE AREA EXTENDING AT LEAST ONE MILE BEYOND FACILITY PROPERTY BOUNDARIES. THIS MAP MUST SHOW THE OUTLINE OF THE FACILITY AND THE FOLLOWING INFORMATION. (YOU MAY SUBMIT MORE THAN ONE MAP IF ONE MAP DOES NOT SHOW THE ENTIRE AREA.)
   a. The area surrounding the treatment plant, including all unit processes.
   b. The location of the down-stream landowner(s). (See Item 10.)
   c. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.
   d. The actual point of discharge.
   e. Wells, springs, other surface water bodies and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
   f. Any areas where the sewage sludge produced by the treatment works is stored, treated or disposed.
   g. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored or disposed.

7.3 PROCESS FLOW DIAGRAM OR SCHEMATIC. PROVIDE A DIAGRAM SHOWING THE PROCESSES OF THE TREATMENT PLANT. ALSO, PROVIDE A WATER BALANCE SHOWING ALL TREATMENT UNITS, INCLUDING DISINFECTION (E.G. CHLORINATION AND DECHLORINATION). THE WATER BALANCE MUST SHOW DAILY AVERAGE FLOW RATES AT INFLUENT AND DISCHARGE POINTS AND APPROXIMATE DAILY FLOW RATES BETWEEN TREATMENT UNITS. INCLUDE A BRIEF NARRATIVE DESCRIPTION OF THE DIAGRAM.

<table>
<thead>
<tr>
<th>FACILITY SIC CODE</th>
<th>DISCHARGE SIC CODE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4952</td>
<td>4952</td>
</tr>
</tbody>
</table>

7.4 FACILITY NAICS CODE: DISCHARGE NAICS CODE:

7.5 NUMBER OF SEPARATE DISCHARGE POINTS
3

7.6 NUMBER OF PEOPLE PRESENTLY CONNECTED OR POPULATION EQUIVALENT
4630

<table>
<thead>
<tr>
<th>NUMBER OF UNITS PRESENTLY CONNECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOMES 1864</td>
</tr>
<tr>
<td>APARTMENTS</td>
</tr>
<tr>
<td>TRAILERS</td>
</tr>
<tr>
<td>OTHER 247</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL DESIGN FLOW (ALL OUTFALLS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>806,000 gpd</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACTUAL FLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>463,000 gpd</td>
</tr>
</tbody>
</table>

7.7 DOES ANY BYPASSING OCCUR ANYWHERE IN THE COLLECTION SYSTEM OR AT THE TREATMENT FACILITY?
Yes [ ] No [ ]
(If Yes, attach an explanation.)

7.8 LENGTH OF THE SANITARY SEWER COLLECTION SYSTEM IN MILES
38

7.9 IS INDUSTRIAL WASTE DISCHARGED TO THE FACILITY IDENTIFIED IN ITEM 2?
Yes [ ] No [ ]

7.10 WILL THE DISCHARGE BE CONTINUOUS THROUGH THE YEAR?
   A. DISCHARGE WILL OCCUR DURING THE FOLLOWING MONTHS
      none
   B. HOW MANY DAYS OF THE WEEK WILL THE DISCHARGE OCCUR?
      zero
   7.11 IS WASTEWATER LAND APPLIED? (If Yes, Attach Form I)
      Yes [ ] No [ ]
   7.12 DOES THIS FACILITY DISCHARGE TO A LOSING STREAM OR SINKHOLE?
      Yes [ ] No [ ]

7.13 HAS A WASTE LOAD ALLOCATION STUDY BEEN COMPLETED FOR THIS FACILITY?
   Yes [ ] No [ ]

7.14 LIST ALL PERMIT VIOLATIONS, INCLUDING EFFLUENT LIMIT EXCEEDANCES IN THE LAST FIVE YEARS.
ATTACH A SEPARATE SHEET IF NECESSARY. IF NONE, WRITE NONE.

8. LABORATORY CONTROL INFORMATION

8.1 LABORATORY WORK CONDUCTED BY PLANT PERSONNEL
   Lab work conducted outside of plant.
   Push-button or visual methods for simple test such as pH, settleable solids.
   Additional procedures such as Dissolved Oxygen, Chemical Oxygen Demand, Biological Oxygen Demand, titrations, solids, volatile content.
   More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc.
   Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph.
   Yes [ ] No [ ]

Page 3
**PART A - BASIC APPLICATION INFORMATION**

### 9. SLUDGE HANDLING, USE AND DISPOSAL

**9.1 IS THE SLUDGE A HAZARDOUS WASTE AS DEFINED BY 10 CSR 25?**
Yes [ ] No [x]

**9.2 SLUDGE PRODUCTION, INCLUDING SLUDGE RECEIVED FROM OTHERS**
- Design Dry Tons/Year: 22 dry tons/yr Northwest, 99 dry tons/yr Northeast
- Actual Dry Tons/Year: [ ]

**9.3 CAPACITY OF SLUDGE HOLDING STRUCTURES**
- Cubic Feet: [ ]
- Days of Storage: [ ]
- Average Percent Solids of Sludge: [ ]

**9.4 SLUDGE STORAGE PROVIDED**
- Holding Tank [ ]
- Basin [ ]
- Building [ ]
- Concrete Pad [ ]
- Other (Describe): [ ]

**9.5 TYPE OF STORAGE**
- Anoxic Digester [ ]
- Storage Tank [ ]
- Lime Stabilization [ ]
- Lagoon [ ]
- Aerobic Digester [ ]
- Air or Heat Drying [ ]
- Composting [ ]
- Other (Attach Description): [ ]

**9.6 SLUDGE TREATMENT**
- Land Application [ ]
- Contract Hauler [ ]
- Hauled to Another Treatment Facility [ ]
- Solid Waste Landfill [ ]
- Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years): [x]
- Incineration [ ]
- Other (Attach Explanation Sheet): [ ]

**9.8 PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY**
- NAME: [ ]
- ADDRESS: [ ]
- CITY: [ ]
- STATE: [ ]
- ZIP: [ ]
- TELEPHONE NUMBER WITH AREA CODE: [ ]
- PERMIT NO: [ ]

**9.9 SLUDGE USE OR DISPOSAL FACILITY**
- By Applicant [ ]
- By Others (Complete Below) [ ]

**9.10 DO THE SLUDGE OR BIOSOLIDS DISPOSAL COMPLY WITH FEDERAL SLUDGE REGULATIONS UNDER 40 CFR 503?**
- Yes [ ]
- No (Attach Explanation) [ ]

### 10. DOWNSTREAM LANDOWNER(S). (ATTACH ADDITIONAL SHEETS AS NECESSARY.)

**NAME**: [ ]

**ADDRESS**: [ ]

**CITY**: [ ]

**STATE**: [ ]

**ZIP**: [ ]

**TELEPHONE NUMBER WITH AREA CODE**: [ ]

**PERMIT NO**: [ ]

**11. DRINKING WATER SUPPLY INFORMATION**

**11.1 SOURCE OF YOUR DRINKING WATER SUPPLY**

A. PUBLIC SUPPLY (MUNICIPAL OR WATER DISTRICT WATER) (IF PUBLIC, PLEASE GIVE NAME OF PUBLIC SUPPLY)

B. PRIVATE WELL

C. SURFACE WATER (LAKE, POND OR STREAM)

**11.2 DOES YOUR DRINKING WATER SOURCE SERVE AT LEAST 25 PEOPLE AT LEAST 60 DAYS PER YEAR (NOT NECESSARILY CONSECUTIVE DAYS)?**
- Yes [x]
- No [ ]

**11.3 DOES YOUR SUPPLY SERVE HOUSING THAT IS OCCUPIED YEAR ROUND BY THE SAME PEOPLE? THIS DOES NOT INCLUDE HOUSING THAT IS OCCUPIED SEASONALLY?**
- Yes [x]
- No [ ]

END OF PART A
## MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

<table>
<thead>
<tr>
<th>FACILITY NAME</th>
<th>PERMIT NO.</th>
<th>OUTFALL NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Centralia</td>
<td>MO- 0028789</td>
<td>varies, see attached</td>
</tr>
</tbody>
</table>

### PART B – ADDITIONAL APPLICATION INFORMATION

#### 20. INFLOW AND INFILTRATION

**ESTIMATE THE AVERAGE NUMBER OF GALLONS PER DAY THAT FLOW INTO THE TREATMENT WORKS FROM INFLOW AND INFILTRATION.**

- **Gallons Per Day**: 15,640

**BRIEFLY EXPLAIN ANY STEPS UNDERWAY OR PLANNED TO MINIMIZE INFLOW AND INFILTRATION.**

- Existing lining program has been in place for 10+ years, lining an average of 1500/yr.

#### 20.1 OPERATION AND MAINTENANCE PERFORMED BY CONTRACTOR(S)

**ARE ANY OPERATIONAL OR MAINTENANCE ASPECTS (RELATED TO WASTEWATER TREATMENT AND EFFLUENT QUALITY) OF THE TREATMENT WORKS THE RESPONSIBILITY OF A CONTRACTOR?**

Yes ☐ No ☑

If Yes, list the name, address, telephone number and status of each contractor and describe the contractor’s responsibilities. (Attach additional pages if necessary.)

**NAME**

**MAILING ADDRESS**

**TELEPHONE NUMBER WITH AREA CODE**

### RESPONSIBILITIES OF CONTRACTOR

#### 20.2 SCHEDULED IMPROVEMENTS AND SCHEDULES OF IMPLEMENTATION. PROVIDE INFORMATION ABOUT ANY UNCOMPLETED IMPLEMENTATION SCHEDULE OR UNCOMPLETED PLANS FOR IMPROVEMENTS THAT WILL AFFECT THE WASTEWATER TREATMENT, EFFLUENT QUALITY OR DESIGN CAPACITY OF THE TREATMENT WORKS. IF THE TREATMENT WORKS HAS SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES OR IS PLANNING SEVERAL IMPROVEMENTS, SUBMIT SEPARATE RESPONSES FOR EACH. (IF NONE, GO TO QUESTION B-20.3.)

**A. List the outfall number that is covered by this implementation schedule**

Outfall No. [Marked]

**B. Indicate whether the planned improvements or implementation schedule are required by local, state or federal agencies.**

Yes ☐ No ☑

#### 20.3 WASTEWATER DISCHARGES:

**COMPLETE QUESTIONS 20.4 THROUGH 20.7 ONCE FOR EACH OUTFALL (INCLUDING BYPASS POINTS) THROUGH WHICH EFFLUENT IS DISCHARGED. DO NOT INCLUDE INFORMATION ON COMBINED SEWER OVERFLOWS IN THIS SECTION.**

#### 20.4 DESCRIPTION OF OUTFALL

**OUTFALL NUMBER 1, 2, 6**

<table>
<thead>
<tr>
<th>A. LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>¼ ¾ ¼ ¼ Section __ Township __ Range __ ☐ E ☐ W</td>
</tr>
<tr>
<td>UTM Coordinates Easting (X): ______ Northing (Y): ______</td>
</tr>
<tr>
<td>For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)</td>
</tr>
</tbody>
</table>

| B. Distance from Shore |
| C. Depth Below Surface |
| (If Applicable) | (If Applicable) |
| __ ft. | __ ft. |

| D. Average Daily Flow Rate |
| __ mgd |

| E. Does this outfall have either an intermittent or periodic discharge? |
| ☐ Yes | ☐ No |

If Yes, provide the following information:

- Number of Days Per Year Discharge Occurs: 0/0
- Average Duration of Each Discharge: 0/0
- Average Flow Per Discharge: 0/0
- Months in Which Discharge Occurs: n/a, n/a, n/a

**Is Outfall Equipped with a Diffuser?** ☐ Yes ☐ No

#### 20.5 DESCRIPTION OF RECEIVING WATER

**B. Name of Receiving Water**

- Outfall 1-Goodyrter Creek, Outfall 2-Youngs Creek, Outfall 6-Youngs Creek

**B. Name of Watershed (If Known)**

US Soil Conservation Service 14-Digit Watershed Code (If Known)

**B. Name of State Management/River Basin (If Known)**

US Geological Survey 8-Digit Hydrologic Cataloging Unit Code (If Known)

**B. Critical Flow of Receiving Stream (If Applicable)**

Acute ______ cfs Chronic ______ cfs

**B. Total Hardness of Receiving Stream at Critical Low Flow (If Applicable)**

mg/L of CaCO₃

MO-790-1805 (09-08)
PART B – ADDITIONAL APPLICATION INFORMATION (CONTINUED)

20.6 DESCRIPTION OF TREATMENT

A. WHAT LEVELS OF TREATMENT ARE PROVIDED? Check All That Apply
   - [ ] Primary
   - [X] Secondary
   - [ ] Advanced
   - [ ] Other (Describe)

B. INDICATE THE FOLLOWING REMOval RATES (AS APPLICABLE)
   - Design BOD₅ Removal or Design CBOD₅ Removal: 65%
   - Design SS Removal: 65%
   - Design P Removal: ___%
   - Design N Removal: ___%
   - Other: ___%

C. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe:
   - No disinfection is used at outfalls 1, 2, or 6.
   - If disinfection is by chlorination, is dechlorination used for this outfall?  [ ] Yes  [ ] No
   - Does the treatment plant have post aeration?  [ ] Yes  [ ] No


<table>
<thead>
<tr>
<th>OUTFALL NUMBER</th>
<th>PARAMETER</th>
<th>MAXIMUM DAILY VALUE</th>
<th>AVERAGE DAILY VALUE</th>
<th>NO. OF SAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>VALUE</td>
<td>UNITS</td>
<td>VALUE</td>
</tr>
<tr>
<td>pH (Minimum)</td>
<td></td>
<td>S.U.</td>
<td></td>
<td>S.U.</td>
</tr>
<tr>
<td>pH (Maximum)</td>
<td></td>
<td>S.U.</td>
<td></td>
<td>S.U.</td>
</tr>
<tr>
<td>FLOW RATE</td>
<td></td>
<td>MGD</td>
<td></td>
<td>MGD</td>
</tr>
<tr>
<td>TEMPERATURE (Winter)</td>
<td></td>
<td>°C</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>TEMPERATURE (Summer)</td>
<td></td>
<td>°C</td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

*For pH report a minimum and a maximum daily value.

<table>
<thead>
<tr>
<th>POLLUTANT</th>
<th>MAXIMUM DAILY DISCHARGE</th>
<th>AVERAGE DAILY DISCHARGE</th>
<th>ANALYTICAL METHOD</th>
<th>ML/MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CONC.</td>
<td>UNITS</td>
<td>CONC.</td>
<td>UNITS</td>
</tr>
<tr>
<td>BIOCHEMICAL OXYGEN DEMAND (Report One)</td>
<td>BOD₅</td>
<td>mg/L</td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Fecal Coliform</td>
<td>#/100 mL</td>
<td></td>
<td>#/100 mL</td>
<td></td>
</tr>
<tr>
<td>Total Suspended Solids (TSS)</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Ammonia (AS N)</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Chlorine (Total Residual, TRC)</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Dissolved Oxygen</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Total Kjeldahl Nitrogen (TKN)</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Nitrate Plus Nitrite Nitrogen</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Oil and Grease</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
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<tr>
<td>Phosphorus (Total)</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Total Dissolved Solids (TDS)</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>mg/L</td>
<td></td>
<td>mg/L</td>
<td></td>
</tr>
</tbody>
</table>

END OF PART B
**PART C - CERTIFICATION**

**30. CERTIFICATION**

All applicants must complete the Certification Section. This certification must be signed by an officer of the company or city official. All applicants must complete all applicable sections as explained in the Application Overview. By signing this certification statement, applicants confirm that they have reviewed the entire form and have completed all sections that apply to the facility for which this application is submitted.

**ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information 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.

**PRINTED NAME AND OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL)**

Lynn P. Behrens City Administrator

**SIGNATURE**

[Signature]

**TELEPHONE NUMBER WITH AREA CODE**

573-682-2139

**DATE SIGNED**

6/3/12

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

For Design Flows Less than 1 Million Gallons Per Day, Send Completed Form to:

**Appropriate Regional Office**

Map of regional offices with addresses and phone numbers is available on the Web at www.dnr.mo.gov/regions/ro-map.pdf.

For Design Flows of 1 Million Gallons Per Day or Greater, Send Completed Form to:

**Department of Natural Resources**

**Water Protection Program**

ATTN: NPDES Permits and Engineering Section

P.O. Box 176

Jefferson City, MO 65102

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**END OF PART C.**

**REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM B2 YOU MUST COMPLETE.**

Do not complete the remainder of this application, unless:

1. Your facility design flow is equal to or greater than 1,000,000 gallons per day.
2. Your facility is a pretreatment treatment works.
3. Your facility is a combined sewer system.

Submittal of an incomplete application may result in the application being returned. Permit fees for returned applications shall be forfeited. Permit fees for applications being processed by the department that are withdrawn by the applicant shall be forfeited.
Attachments and Supplemental Information

Section 2.1 and 2.2 Legal Descriptions

**Outfall #001 — Northwest System**
Legal Description: NE 1/4, NE 1/4, NW 1/4, Sec. 9, T51N, R11W, Boone County
UTM Coordinates: X = 572996.400, Y = 4342149.621

**Outfall #002 — Northeast System**
Legal Description: NW 1/4, NE 1/4, SW 1/4, Sec. 12, T51N, R11W, Audrain County
UTM Coordinates: X = 577863.939, Y = 4341337.718

**Permitted Feature #003 — Sims Storage Cell**
Legal Description: N 1/2, SE 1/4, Sec. 25, T52N, R12W, Audrain County
UTM Coordinates: X = 569077.034, Y = 4346212.621

**Permitted Feature #004 — Bowne Storage Cell**
Legal Description: NE 1/4, NE 1/4, Sec. 1, T51N, R12W, Boone County
UTM Coordinates: X = 568775.980, Y = 4343931.630

**Permitted Feature #005 — Benoit Storage Cell**
Legal Description: NW 1/4, NW 1/4, Sec. 2, T51N, R11W, Boone County
UTM Coordinates: X = 575825.794, Y = 4343777.978

**Outfall #006 — Northeast Lagoon Overland Flow System**
Legal Description: SE 1/4, SW 1/4, NW 1/4, Sec. 12, T51N, R11W, Audrain County
UTM Coordinates: X = 577465.008, Y = 4341381.376

Section 7.14 List all permit violations in the past 5 years

A Letter of Warning was sent to the city on January 7, 2009, for exceeding the permitted effluent limit concentration of Total Suspended Solids in July (Outfall #002), August (Outfall #001), and September 2008 (Outfall #001).

A Letter of Warning was sent to the city on March 27, 2009, for exceeding the permitted effluent limit concentration of Total Suspended Solids in October 2008 (Outfall #001) and for not reporting effluent flow for Outfall #006 in October 2008.

A Letter of Warning was sent to the city on April 6, 2010, for exceeding the permitted effluent limit concentration of Ammonia Nitrogen in June 2009 (Outfall #002) and for exceeding the permitted effluent limit concentration of Cyanide in December 2009 (Outfall #001).

A Letter of Warning was sent to the city on July 21, 2010, for exceeding the permitted effluent limit concentration of Ammonia Nitrogen in January, February, and March of 2009 (both Outfall #001 and #002) and for exceeding the permitted effluent limit concentration of Cyanide in January 2009 (Outfall #001).
A Letter of Warning was sent to the city on November 3, 2010, for exceeding the permitted effluent limit concentration of Ammonia Nitrogen in April and May 2010 (Outfall #001).

A Letter of Warning was sent to the city on December 9, 2010, for exceeding the permitted effluent limit concentration of Ammonia Nitrogen in June 2010 (Outfall #001).

Section 10 Downstream Landowners

**Outfall #001** — Northwest System
First Downstream Landowner’s Name: Roy Waechter Revocable Trust  
Address: P.O. Box 497, Troy, Missouri 63379

**Outfalls #002 and #006** — Northeast System and Overland Flow System
First Downstream Landowner’s Name: Hartley Trust  
Address: 1142 Running Brook Drive, Perrysburg, OH 43551

Section 20.2A Scheduled Improvements

Centralia has an ongoing collection system lining program intended to reduce I&I and improve the overall integrity of the collection system. This effort occurs annually and on average, about 1500’ of sewer collection main is lined annually. In 2013, there is money budgeted to line over 3000’, but in other years, it is less or more.
INSTRUCTIONS: The following forms must be submitted with Form I: FORM B for domestic wastewater. Submit FORMS E and G for land disturbance permit if construction areas total one acre or more.

### 1.00 FACILITY INFORMATION

1.10 Facility Name  
City of Centralia, MO-002878

1.20 Application for:  
- ☐ Construction Permit (attach Engineering report, Plans and Specifications per 10 CSR 20-8)  
- ☐ Operating Permit (if no construction permit, attach engineering documents)  
- ✔ Operating Permit Renewal  

1.30 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) - 4952

1.40 Months when the business or enterprise will operate or generate wastewater:  
- ✔ 12 months per year  
- ☐ Part of year (list Months): ___

1.50 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) ___  

1.60 List the Facility outfalls which will be applicable to the irrigation system from outfalls listed on Form B.  
Outfall Nos. 3, 4, 5 ___ ___ ___ ___ ___

### 2.00 STORAGE BASINS

2.10 Number of storage basins: ___  
Type of basin:  
- ☐ Steel  
- ☐ Concrete  
- ☐ Fiberglass  
- ✔ Earthen  
- ☐ Earthen with membrane liner

2.20 Storage basin dimensions at inside top of berm (feet): Report freeboard as feet from top of berm to emergency spillway or overflow pipe.  
(Complete Attachment A: Profile Sketch)  
Basin #1: Length ___ Width ___ Depth ___ Freeboard ___ Berm Width ___ % Slope ___  
Basin #2: Length ___ Width ___ Depth ___ Freeboard ___ Berm Width ___ % Slope ___

2.30 Storage Basin operating levels (report as feet below emergency overflow level)  
Basin #1: Maximum water level ___ ft.  
Minimum operating water level ___ ft.  
Basin #2: Maximum water level ___ ft.  
Minimum operating water level ___ ft.  

2.40 Depth of sludge in lagoons and storage basins ___ ft.  
Total sludge stored ___ dry tons ___ cu. ft.  

### 3.00 LAND APPLICATION SYSTEM

3.10 Number of irrigation sites ___  
Total Acres 1460  
Maximum % field slopes 2%  
Location: ___ %, ___ %, ___ %  
Sec. ___ T ___ R ___ County ___ Acres  
Location: ___ %, ___ %, ___ %  
Sec. ___ T ___ R ___ County ___ Acres
3.11 Type of vegetation: ☑ Grass hay ☐ Pasture ☐ Timber ☑ Row crops ☐ Other (describe)  

3.20 Wastewater flow (dry weather) gallons/day:  
Average annual: 5000000  Seasonal ____ Off-season ____  
Months of seasonal flow: 12  
Human Population Equivalent: 5060  

3.21 Land Application rate per acre (design flow including 1 in 10 year storm water flows):  
Design: 12 inches/year 0.3 inches/hour 0.6 inches/day 3.0 inches/week  
Actual: 12 inches/year 0.3 inches/hour 0.6 inches/day 3.0 inches/week  
Total Irrigation per year (gallons): 234,529,500 Design 168,995,800 Actual  
Actual months used for irrigation (check): ☑ Jan ☑ Feb ☑ Mar ☑ Apr ☑ May ☑ Jun ☑ Jul ☑ Aug ☑ Sep  
☐ Oct ☑ Nov ☑ Dec  

3.22 Land Application Rate is based on:  
☐ Nutrient Management Plan (N&P)  
☑ Hydraulic Loading  
☐ Other (describe)  

3.30 Equipment type: ☐ Sprinklers ☐ Gated pipe ☑ Center pivot ☐ Traveling gun ☐ Other (describe)  
Equipment Flow Capacity: Gallons per hour Total hours of operation per year  

3.40 Public Access Restrictions for irrigation sites: ☑ Site is Fenced ☐ Wastewater disinfection prior to irrigation  
☐ Other (describe): attached  

3.60 SOILS INFORMATION: Use information from the County Soil Survey, NRCS, or professional soil scientist.  
Soil Series Name ___ Depth of bedrock ___ Feet Depth of water table ___ Feet  
Soil Infiltration rate in inches/hour (in/hr) for most restrictive layer within the following soil depth ranges:  
In/hr for 0-12 in soil depth In/hr for 12-24 inch soil depth In/hr for 24-60 inch soil depth  

3.70 Include a recent Geologic Report by the Department's Geological Survey and Resource Assessment Division with your construction permit.  

4.00 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.  

CONSULTING ENGINEER – Name, Official Title and Engineering Firm (TYPE OR PRINT)  
Gary Cunningham, Principal, EMS  

DATE SIGNED  
May 17, 2013  

OWNER OR AUTHORIZED REPRESENTATIVE – Name and Official Title (TYPE OR PRINT)  
Lynn Behrens, City Administrator  

DATE SIGNED  
6/13/17
### Section 2.20 - Storage Basin Dimensions and Storage Calculations

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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<th></th>
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<td>2,400</td>
<td>600</td>
<td>11</td>
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<td>96,940,800</td>
<td>118,483,200</td>
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<td>2</td>
<td>1,196,800</td>
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<td><strong>TOTAL</strong></td>
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<td></td>
<td></td>
<td></td>
<td><strong>200,613,500</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1. Working depth is depth above permanent depth but below freeboard.
2. Freeboard is reported as distance from top of berm to spillway or overflow invert.
3. Permanent volume means 2' of water depth to protect seal, plus any required treatment volume.
4. Available storage volume is defined as Total Volume minus Permanent Volume requirements.
5. Actual survey information is attached, illustrating irregular shapes and volumes of these storage basins.

### Section 2.30 - Storage Basin Operating Levels (Reported as feet below emergency overflow levels)

<table>
<thead>
<tr>
<th>NPDES Storage Basin No.</th>
<th>Storage Basin Name</th>
<th>Maximum Water Level (ft)</th>
<th>Minimum Water Level (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NE</td>
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<td>10</td>
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### Section 2.40 - Storage Basin Design Capacity (Storage between minimum and maximum operating levels for 1-in-10 year flows)

<table>
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<tr>
<th>NPDES Storage Basin No.</th>
<th>Storage Basin Name</th>
<th>Storage Capacity (days)</th>
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<td>37</td>
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<td>5</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td><strong>410</strong></td>
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### Section 3.10 - Irrigation Sites Legal Descriptions

<table>
<thead>
<tr>
<th>NPDES Irrigation Site No.</th>
<th>Storage Basin Name</th>
<th>Total Irrigated Acres</th>
<th>Total Reference No.</th>
<th>Map Descriptions</th>
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<td>S1</td>
<td>NW 1/4 S31 T52N R11W Audrain County</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>S2</td>
<td>SW 1/4 S30 T52N R11 W Audrain County</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S3</td>
<td>SE 1/4 S25 T52N R12W Audrain County</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S4</td>
<td>SW 1/4 S25 T52N R12W Audrain County</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S5</td>
<td>NW 1/4 S25 T52N R12W Audrain County</td>
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<td></td>
<td>S6</td>
<td>NE 1/4 S26 T52N R12W Audrain County</td>
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<td></td>
<td>S7</td>
<td>NE 1/4 S36 T52N R12W Audrain County</td>
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<td>SE 1/4 S36 T52N R12W Audrain County</td>
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<td>NE 1/4 S1 T51N R12W Boone County</td>
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<td></td>
<td></td>
<td>BN2</td>
<td>NW 1/4 S6 T51N R11W Boone County</td>
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### Section 3.60 - Soils Information (Reference NRCS Soil Surveys for Boone and Audrain Counties)

<table>
<thead>
<tr>
<th>Soil Series Name</th>
<th>Depth to Bedrock</th>
<th>Depth to Water Table</th>
<th>Infiltration Rate (0-12&quot;)</th>
<th>Infiltration Rate (12-24&quot;)</th>
<th>Infiltration Rate (24-60&quot;)</th>
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<td>Adco</td>
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<td>Armstrong</td>
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<tr>
<td>Mexico</td>
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<td>0.22 in/hr</td>
<td>0.20 in/hr</td>
<td>0.18 in/hr</td>
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</tbody>
</table>
Lagoon or Storage Basin
PROFILE SKETCH

Top Surface Area (sq. ft.) at inside top of Berm

Water Surface Area (sq. ft.)

Safety Volume:
25-year-24-hour storm

Maximum Operating Level
― ft. below overflow

Storage Volume:
Wastewater Flows and
1-in-10 year Rainfall
minus Evaporation

Minimum Operating Level
― ft. below overflow

Bottom Seal Protection
Treatment and
Sludge Storage

DEFINITION OF TERMS (REFER TO THE PROFILE SKETCH ABOVE).

a. Freeboard is depth from top of berm to emergency spillway (minimum 1 foot);
b. Safety Volume is depth for 25-year, 24-hour storm (minimum of 1 foot);
c. Maximum Operating Level is at bottom of the safety volume (minimum of 2 feet below top of berm);
d. Minimum Operating Level is 2 feet above bottom of lagoon for seal protection per 10 CSR 20-8.
   The minimum operating level may be greater than 2 feet when additional treatment volume is included.
e. Storage Volume and days storage are based on the volume between Minimum and Maximum Operating Levels.
f. Total Depth is from top of berm to bottom of basin including freeboard.
Proposed Construction: None

Requested Permit Modifications: 1) Remove the aeration requirement. The aeration equipment is no longer needed because the lagoons no longer discharge directly into Missouri waterways. Treated wastewater is utilized by local farmers for crop irrigation. In the event that the treated wastewater cannot be placed in existing land application storage, then the treated wastewater is directed to the Overland Flow System for additional treatment. 2) Remove the baffle requirement (geotextile curtain) in cell 1. This curtain proved to be problematic to maintain whenever winds exceeded 40 mph. It was primarily due to the anchoring system which was not adequate. Additionally, whenever the curtain failed (i.e., was lifted out of the water and hung onto the supporting cable), then the aerators "stirred" the suspended solids to a point where carry-over was seen in Outfall #2, when in use. Currently Outfall #2 is not used, and instead, if there is any discharge that is necessary, then the flows are directed to the Overland Flow System for further treatment and eventual discharge at Outfall #6. 3) Remove metals testing requirements for Outfall #2 from the permit. The town's only manufacturing facility has not performed any metal plating for the past two decades and is no longer subject to any pretreatment requirements. This is a legacy requirement that no longer applies.
Figure No 3 — Site Map NW Lagoon System  
Centralia, MO

Proposed Construction: None

Requested Permit Modifications: 1) Remove metals testing from the NPDES permit. The town’s only manufacturing facility has not performed any metal plating for the past two decades and is no longer subject to any pretreatment requirements. This is a legacy requirement that no longer applies.
Figure No 4 – Site Map for Benoit Storage and Land Application Sites
Centralia, MO

Proposed Construction: None
Requested Permit Modifications: 1) Allow land application at a rate of 12" per year, as allowed in the rules on row cropland.
Figure No 5 – Site Map for Bowne Storage and Land Application Sites
Centralia, MO

**Proposed Construction:** None

**Requested Permit Modifications:** 1) Allow land application at a rate of 12" per year, as allowed in the rules on row cropland.
Figure No 6 – Site Map for Sims Storage and Land Application Sites in Centralia, MO

Proposed Construction: None

Requested Permit Modifications: 1) Allow land application at a rate of 12" per year, as allowed in the rules on row cropland.