

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

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

Permit No. MO-0031658

Owner: City of Golden City
Address: 701 Depot Avenue, Golden City, MO 64748

Continuing Authority: Same as above
Address: Same as above

Facility Name: Golden City Wastewater Treatment Plant
Facility Address: 302 Vine Street, Golden City, MO 64748

Legal Description: NW ¼, NW ¼, SW ¼, Sec. 26, T31N, R29W, Barton County
UTM Coordinates: X=402934, Y=4139705

Receiving Stream: Unnamed tributary to North Fork Spring River (U)
First Classified Stream and ID: North Fork Spring River (C) (3188) 303(d) List
USGS Basin & Sub-watershed No.: (11070207-0202)

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

FACILITY DESCRIPTION

Outfall #001 – POTW – SIC #4952

The use or operation of this facility shall be by or under the supervision of a Certified “B” Operator
Influent pump station / bar screen / oxidation ditch /UV disinfection/ excess flow storage/ aerobic sludge digester/
sludge holding tank/ sludge drying bed/ sludge is taken to a sanitary landfill.

Design population equivalent is 3,044.

Design flow is 310,000 gallons per day.

Peak flow is 1.15 MGD

Actual flow is 152,000 gallons per day.

Design sludge production is 70 dry tons/year.

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 644.051.6 of the Law.

February 1, 2013 November 6, 2015
Effective Date Revision Date

Sara Parker Pauley, Director, Department of Natural Resources

January 31, 2018
Expiration Date

John Madras, Director, Water Protection Program

| | | |
|-----------------|---|--------------------------|
| OUTFALL #001 | TABLE A-1. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS | PAGE NUMBER 2 of 7 |
| | | PERMIT NUMBER MO-0031658 |

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

| EFFLUENT PARAMETER(S) | UNITS | FINAL EFFLUENT LIMITATIONS | | | MONITORING REQUIREMENTS | |
|---|----------|----------------------------|----------------|-----------------|-------------------------|--------------|
| | | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| Flow | MGD | * | | * | once/week | 24 hr. total |
| Biochemical Oxygen Demand ₅ | mg/L | | 24 | 16 | once/month | composite** |
| Total Suspended Solids | mg/L | | 24 | 16 | once/month | composite** |
| <i>E. coli</i> (Note 1) | #/100 ml | | 1030 | 206 | once/week | grab |
| pH – Units | SU | *** | | *** | once/month | grab |
| Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31) | mg/L | 4.2 5.3 | | 1.6 2.0 | once/month | grab |
| Oil & Grease | mg/L | 15 | | 10 | once/month | grab |

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

| | | | | |
|------------------------------------|------------|---------------------------|--------------------|-------------|
| Whole Effluent Toxicity (WET) test | % Survival | See Special Condition #16 | twice/permit cycle | Composite** |
|------------------------------------|------------|---------------------------|--------------------|-------------|

MONITORING REPORTS SHALL BE SUBMITTED TWICE PER PERMIT CYCLE; THE FIRST REPORT IS DUE JANUARY 28, 2017.

* Monitoring requirement only.

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

*** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.5-9.0 pH units.

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).

| B. INFLUENT MONITORING REQUIREMENTS | | PAGE NUMBER 3 of 7 | |
|---|-------|--------------------------|-------------|
| | | PERMIT NUMBER MO-0031658 | |
| The facility is required to meet a removal efficiency of 85% or more as a monthly average. The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below: | | | |
| SAMPLING LOCATION AND PARAMETER(S) | UNITS | MONITORING REQUIREMENTS | |
| | | MEASUREMENT FREQUENCY | SAMPLE TYPE |
| <u>Influent</u> | | | |
| Biochemical Oxygen Demand ₅ | mg/L | once/quarter**** | composite** |
| Total Suspended Solids | mg/L | once/quarter**** | composite** |
| MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>JANUARY 28, 2016</u> . | | | |

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

**** See table below for quarterly sampling.

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

C. STANDARD CONDITIONS

In addition to specified conditions stated herein, this permit is subject to the attached Parts I, II, & III standard conditions dated October 1, 1980 and August 15, 1994, and hereby incorporated as though fully set forth herein.

D. SPECIAL CONDITIONS

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

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

2. All outfalls must be clearly marked in the field.
3. 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)

4. Water Quality Standards

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

5. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
 - (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.
6. Report as no-discharge when a discharge does not occur during the report period.
7. It is a violation of the Missouri Clean Water Law to fail to pay fees associated with this permit (644.055 RSMo).
8. 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.
9. Any diversion around secondary treatment processes shall be considered an unauthorized bypass. Bypasses are not authorized at this facility and are subject to 40 CFR 122.41(m). If a bypass occurs, the permittee shall report in accordance to 40 CFR 122.41(m)(3)(i), and with Standard Condition Part I, Section B, subsection 2.b. Bypasses are to be reported to the Southwest Regional Office
10. The facility must be sufficiently secured to restrict entry by children, livestock and unauthorized persons as well as to protect the facility from vandalism.

D. SPECIAL CONDITIONS (continued)

11. At least one gate must be provided to access the wastewater treatment facility and provide for maintenance and mowing. The gate shall remain locked except when opened by the permittee to perform operational monitoring, sampling, maintenance, mowing, or for inspections by the Department.
12. At least one (1) warning sign shall be placed on each side of the facility enclosure 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.
13. An Operation and Maintenance (O & M) manual shall be maintained by the permittee and made available to the operator. The O & M manual shall include key operating procedures and a brief summary of the operation of the facility.
14. An all-weather access road shall be provided to the treatment facility.
15. 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.
16. Whole Effluent Toxicity (WET) Tests shall be conducted as follows:

| SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT | | | | |
|--|------|--|--------------------|-------|
| OUTFALL | AEC | FREQUENCY | SAMPLE TYPE | MONTH |
| 001 | 100% | TWICE PER PERMIT CYCLE IN 2014 AND 2016 | 24 hr. composite** | Any |

** A 24-hour composite sample is composed of 48 aliquots (subsamples) collected at 30 minute intervals by an automatic sampling device.

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

- (a) Test Schedule and Follow-Up Requirements
 - (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (i) Chemical and physical analysis of the upstream control 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.
 - (ii) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analysis performed upon any other effluent concentration.
 - (iii) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (2) The WET test will be considered a failure if mortality observed in effluent concentrations for either specie, equal to or less than the AEC, is significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available, synthetic laboratory control water may be used.

D. SPECIAL CONDITIONS (continued)

- (3) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
 - (4) If the effluent fails the test for BOTH test species, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met: Note: Written request regarding single species multiple dilution accelerated testing will be address by THE WATER PROTECTION PROGRAM on a case by case basis.
 - (i) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (ii) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
 - (5) Follow-up tests do not negate an initial failed test.
 - (6) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
 - (7) Additionally, the following shall apply upon failure of the third follow up MULTIPLE DILUTION test The permittee should contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. If the permittee does not contact THE WATER PROTECTION PROGRAM upon the third follow up test failure, a toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of the automatic trigger or DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
 - (8) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
 - (9) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
 - (10) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.
 - (11) Submit a concise summary in tabular format of all WET test results with the annual report.
- (b) Test Conditions
- (1) Test Type: Acute Static non-renewal
 - (2) All tests, including repeat tests for previous failures, shall include both test species listed below unless approved by the department on a case by case basis.
 - (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
 - (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
 - (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
 - (6) Tests will be run with 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent, and reconstituted water.

D. SPECIAL CONDITIONS (continued)

- (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
- (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.
- (9) Whole-effluent-toxicity test shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms

E. SCHEDULE OF COMPLIANCE

Hydraulic Overloading

1. By **August 31, 2017**, the permittee shall submit to the Southwest Regional Office a written Plan to Reduce Inflow and Infiltration (Plan) into the sewer collection system. The Plan will include a schedule for locating sources of inflow and infiltration, describing the sources and their believed causes, and rate its priority for correction. The suggested format for the Plan would be to divide the collection system into designated areas that would be prioritized by the permittee based on currently known problem areas with target dates to TV or smoke test the lines within a given area. Lines that are newer than 15 years old may be excluded from the plan unless the permittee has reason to believe they are a major source of inflow or infiltration. Once the Plan is approved by the Department, the permittee will immediately implement the plan.
2. By **August 31st** of each year, following approval of the Plan, the permittee must report the findings of the work accomplished during the previous year for the targeted area(s) and note which inflow/infiltration problems were corrected. In the event that revisions to the Plan are necessary, the permittee will submit requested revisions to the Plan to the Southwest Regional Office for review and approval.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
FOR THE PURPOSE OF MODIFICATION
OF
MO-0031658
GOLDEN CITY WWTP

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

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

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

This Factsheet is for a Minor

Part I – Facility Information

Facility Type: POTW
Facility SIC Code(s): 4952

Facility Description:

The applicant submitted a *Waste Water Treatment Plant Improvements Design Summary*, prepared by Olsson Associates, September 2012, that describes the facility as having influent screening (headworks consists of a mechanical bar screen), storm water holding (the volume of the storm water clarifier, primary and secondary clarifiers, and trickling filter will all be used as temporary storage for storm water that will be drained back to the headworks after the storm event subsides), extended aeration using an oxidation ditch, secondary clarification, sludge pumping (sludge holding tank / sludge drying bed / sludge is taken to a sanitary landfill), aerobic digestion, and ultraviolet disinfection.

Design population equivalent (PE) is based on a pollutant loading of 517.4 lb/ BOD/day. Design sludge production is based on calculations provided by the design engineers.

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

- YES.

Application Date: 09/17/2012
Expiration Date: 01/31/2018

OUTFALL(S) TABLE:

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | EFFLUENT TYPE | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---------|-------------------|-----------------|---------------|-------------------------------------|
| #001 | 0.48 | Secondary | Domestic | ~ 1.9 |

Receiving Water Body’s Water Quality & Facility Performance History:

A stream survey was conducted for the receiving stream on June 29, 2010. The survey did not list if impacts were observed on the receiving stream. The facility failed to submit Ammonia as N on the May and November 2006, and February 2007 Discharge Monitoring Reports (DMR), and Fecal Coliform on the May 2006 and May 2008 DMRs. The facility failed to meet effluent limitations for BOD and TSS on the February 2011 DMR, and TSS on the December 31, 2011 DMR. The facility was last inspected on August 31, 2010. The inspection showed the following unsatisfactory features at the facility, improper lab methods and equipment and operation and maintenance failures. The facility corrected the deficiencies.

Comments:

The purpose of this modification is to expand the facility from 0.125 to 0.310 MGD. The expanded design flow was derived from review of the collection of flow rate data recorded in the DMRS and the other method was review of the run times of influent pump submersible pumps. The final design flow was 0.310 MGD with a peak flow of 1.15 MGD. The oxidation ditch was selected due to its ability to efficiently treat a wide range of flows and loadings. The modification will include storm water holding, extended aeration using an oxidation ditch, secondary clarification, sludge pumping, aerobic digestion, and ultraviolet disinfection.

This facility shows significant hydraulic overloading based on flow readings listed on the Discharge Monitoring Reports submitted to the Department. Previous inspection reports document inflow and infiltration issues for the collection system. Due to the hydraulic overloading, a schedule of compliance to address the hydraulic overloading is added to the permit. This facility has the ability to bypass untreated wastewater from the peak flow clarifier to Outfall #001. These discharges are bypasses and 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. The 2012 renewal permit had a schedule of compliance that required a report by February 2014. Due to the construction cost and the results of the affordability analysis we are extending the SOC until August 31, 2017 (see Appendix- Affordability).

Part II – Operator Certification Requirements

Applicable : This facility is required to have a certified operator.

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees 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:

Check boxes below that are applicable to the facility;

- Owned or operated by or for:
 - Municipalities
 - Public Sewer District:
 - County
 - Public Water Supply Districts:
 - Private sewer company regulated by the Public Service Commission:
 - State or Federal agencies:

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

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

Operator's Name: Gregory L. Lowe
 Certification Number: 4901
 Certification Level: A

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(3)].

RECEIVING STREAM(S) TABLE:

| WATER-BODY NAME | CLASS | WBID | DESIGNATED USES* | 12-DIGIT HUC | EDU** |
|--|-------|------|----------------------|---------------|--------------|
| Unnamed tributary to North Fork Spring River | U | NA | General Criteria | 11070207-0202 | Ozark/Neosho |
| North Fork Spring River | C | 3188 | LWW, AQL, WBC-B, SCR | | |

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

** - Ecological Drainage Unit

RECEIVING STREAM(S) LOW-FLOW VALUES:

| RECEIVING STREAM (U, C, P) | LOW-FLOW VALUES (CFS) | | |
|--|-----------------------|------|-------|
| | 1Q10 | 7Q10 | 30Q10 |
| Unnamed tributary to North Fork Spring River | 0 | 0 | 0.1 |

MIXING CONSIDERATIONS

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

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

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

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 land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

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

ANTI-BACKSLIDING:

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

- All limits in this operating permit are at least as protective as those previously established; therefore, backsliding does not apply.

ANTIDegradation:

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

- New and/or expanded discharge, please see **APPENDIX FOR ANTIDegradation REVIEW ANALYSIS**.

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://dnr.mo.gov/env/wpp/pub/index.html>, items WQ422 through WQ449.

- Permittee is not authorized to land apply biosolids. Sludge/biosolids are removed by owner/contract hauler, incinerated, stored in the lagoon, landfilled, etc.

COMPLIANCE AND ENFORCEMENT:

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

Applicable ; The permittee/facility is currently under enforcement action as the facility could not meet the timeline contained in the previous permit for upgrading the facility to meet bacteria limitations. The Enforcement Section has agreed to extend the schedule for the facility to meet disinfection requirements, however the permit must be written according to the regulations. We granted an extension to the original AOC schedule because the city was originally only going to upgrade for disinfection. A letter dated September 6, 2012, the Enforcement Section granted the city 15 months to complete construction once the CP is issued. Enforcement is now monitoring compliance with the AOC.

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)].

Not Applicable ; The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program.

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)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Not Applicable ; A RPA was not conducted for this facility.

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.

Applicable ; Secondary Treatment is 85% removal [40 CFR Part 133.102(a)(3) & (b)(3)].

SANITARY SEWER OVERFLOWS (SSO) AND INFLOW AND INFILTRATION (I&I):

Sanitary Sewer Overflows (SSOs) are defined as an untreated or partially treated sewage release are considered bypassing under state regulation [10 CSR 20-2.010(11)] and should not be confused with the federal definition of bypass. SSO's have a variety of causes including blockages, line breaks, and sewer defects that allow excess storm water and ground water to (1) enter and overload the collection system, and (2) overload the treatment facility. Additionally, SSO's can be also be caused by lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations.

Additionally, Missouri RSMo §644.026.1 mandates that the Department require proper maintenance and operation of treatment facilities and sewer systems and proper disposal of residual waste from all such facilities.

- In accordance with Missouri RSMo §644.026.1.(15) and 40 CFR Part 122.41(e), the permittee is required to develop and/or implement a program for maintenance and repair of the collection system and shall be required in this operating permit by either means of a Special Condition or Schedule of Compliance. In addition, the Department considers the development of this program as an implementation of this condition. Additionally, 40 CFR Part 403.3(o) defines a POTW to include any device and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW Treatment Plant.

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). The CMOM identifies some of the criteria used by the EPA 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):

A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (actions, operations, or milestone events) leading to compliance with the Missouri Clean Water Law, its implementing regulations, and/or the terms and conditions of an operating permit.

Applicable ; The facility has been given a schedule of compliance to address Hydraulic Overloading. The 2012 renewal included a 2014 milestone for this schedule; because this facility is addressing some of the hydraulic issues with the permit through proposed upgrade and the affordability issues with the upgrade, staff added one year to the SOC in this permit. The City is presently working to achieve compliance via an Abatement Order on Consent, which required upgrades to the facility.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

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

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

Additionally in accordance with the Storm Water Management, a SWPPP is a series of steps and activities to (1) identify sources of pollution or contamination, and (2) select and carry out actions which prevent or control the pollution of storm water discharges.

Not Applicable ; 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 the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ; This operating permit is not drafted under premises of a petition for variance. The department received a variance request regarding the disinfection requirement on December 8, 2010. The Department's permit section offered to resolve the issue and grant more time through an Abatement Order on Consent, rather than a variance because it didn't exactly qualify for a variance.

WASTELOAD ALLOCATIONS (WLA) FOR LIMITS:

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

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

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

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

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

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

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.

Not Applicable ; A WLA study was either not submitted or determined not applicable by Department staff.

WATER QUALITY STANDARDS:

Per [10 CSR 20-7.031(3)], General Criteria shall be applicable to all waters of the state at all times including mixing zones. Additionally, [40 CFR 122.44(d)(1)] directs the Department to establish in each NPDES permit to include conditions to achieve water quality established under Section 303 of the Clean Water Act, including State narrative criteria for water quality.

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

Applicable : Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System (NPDES). WET testing is also required by 40 CFR 122.44(d)(1). WET testing ensures that the provisions in the 10 CSR 20-6.010(8)(A)7. and the Water Quality Standards 10 CSR 20-7.031(3)(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 (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 or domestic discharger with a Design Flow ≥ 22,500 gpd.

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, which includes blending, 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 20-2.010(11) defines a bypass as the diversion of wastewater from any portion of wastewater treatment facility or sewer system 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 440 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(1)(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.

Applicable : Bypasses occur or have occurred at this facility.

- The permittee does not meet the necessary requirements for entering into a VCA with the Department.

303(d) LIST & TOTAL MAXIMUM DAILY LOAD (TMDL):

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

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

Applicable : North Fork Spring River is listed on the 2012 Missouri 303(d) Lists for Bacteria, Ammonia, and Low DO (Bacteria source listed as Rural NPS, Ammonia source is listed as Lamar WWTP, and Low DO sources listed as Lamar WWTP and NPS). Segments of the river are impaired for these pollutants; however, EPA is maintaining the position that the entire classified segment must be listed as impaired.

On November 2006, a TMDL was established for the North Fork Spring River for sediment. The antidegradation review in the appendix of this permit addresses this pollutant as TSS. TSS is a Tier 1 pollutant.

– This facility is not considered to be a source of the above listed pollutant(s) or considered to contribute to the impairment of the North Fork Spring River.

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 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.

All Other Waters [10 CSR 20-7.015(8)]:

OUTFALL #001 – MAIN FACILITY 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.

PLEASE REFER TO APPENDIX ANTIDEGRADATION REVIEW FOR EFFLUENT LIMITS AND MONITORING REQUIREMENTS.

EFFLUENT LIMITATIONS TABLE:

| PARAMETER | Unit | Basis for Limits | Daily Maximum | Weekly Average | Monthly Average | Modified | Previous Permit Limitations |
|---------------------------------------|---------------|------------------|---|----------------|-----------------|----------|-----------------------------|
| Flow | MGD | 1 | * | | * | No | * |
| BOD ₅ | mg/L | 1,6,7 | | 24 | 16 | Yes | 60/40 |
| TSS | mg/L | 1,6,7 | | 24 | 16 | Yes | 60/40 |
| pH | SU | 1 | 6.5 – 9.0 | | | No | |
| Ammonia as N (April 1 – Sept 30) | mg/L | 2, 3, 6 | 4.2 | | 1.6 | Yes | */*, for 2 years |
| Ammonia as N (Oct 1 – March 31) | mg/L | 2, 3, 6 | 5.3 | | 2.0 | Yes | */*, for 2 years |
| <i>Escherichia coli</i> | ** | 1, 3 | | 1030 | 206 | No | |
| Oil & Grease | mg/L | 1, 3 | 15 | | 10 | No | |
| Whole Effluent Toxicity (WET) Test | % Survival | 11 | Please see WET Test in the Derivation and Discussion Section below. | | | | |

* - Monitoring requirement only.

** - # of colonies/100mL; the Monthly Average for *E. coli* is a geometric mean.

*** - Parameter not previously established in previous state operating permit.

Basis for Limitations Codes:

- | | |
|--|------------------------------------|
| 1. State or Federal Regulation/Law | 7. Antidegradation Policy |
| 2. Water Quality Standard (includes RPA) | 8. Water Quality Model |
| 3. Water Quality Based Effluent Limits | 9. Best Professional Judgment |
| 4. Lagoon Policy | 10. TMDL or Permit in lieu of TMDL |
| 5. Ammonia Policy | 11. WET Test Policy |
| 6. Antidegradation Review | |

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

PLEASE REFER TO APPENDIX ANTIDEGRADATION REVIEW FOR DERIVATION OF EFFLUENT LIMITS.

- ***Escherichia coli (E. coli)***. Please see the Appendix Antidegradation Review for further discussion on *E. coli*. Monthly average of 206 per 100 ml as a geometric mean and Weekly Average of 1030 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(4)(C). Weekly Average effluent variability will be evaluated in development of a future effluent limit. An effluent limit for both monthly average and weekly average is required by 40 CFR 122.45(d).

- **WET Test.** 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

TWICE/PERMIT CYCLE:

The facility has not failed any previous WET tests, however the facility is hydraulically overloaded.

Minimum Sampling and Reporting Frequency Requirements.

| PARAMETER | SAMPLING FREQUENCY | REPORTING FREQUENCY |
|------------------|--------------------|---------------------|
| Flow | once/week | once/month |
| BOD ₅ | once/month | once/month |
| TSS | once/month | once/month |
| pH | once/month | once/month |
| Ammonia as N | once/month | once/month |
| <i>E. coli</i> | once/week | once/month |
| Oil & Grease | once/month | once/month |

Sampling Frequency Justification:

The sampling and reporting frequency is the same as the previous permit except for *E. coli*, as weekly sampling is required per 10 CSR 7.015.

Sampling Type Justification

As per 10 CSR 20-7.015, samples collected for mechanical plants shall be 24 hour composite samples.

Part VII – Finding of Affordability

Pursuant to Section 644.145, RSMo., the Department is required to determine whether a permit or decision is affordable and makes a finding of affordability for certain permitting and enforcement decisions. This requirement applies to discharges from combined or separate sanitary sewer systems or publically-owned treatment works.

Applicable; 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.**

Finding of affordability - 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 – Affordability Analysis**

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.

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 May 31, 2013 – July 1, 2013.

DATE OF FACT SHEET: MAY 15, 2013

COMPLETED BY:

TODD BLANC, ENVIRONMENTAL SCIENTIST
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
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Appendices

APPENDIX - CLASSIFICATION WORKSHEET:

| ITEM | POINTS POSSIBLE | POINTS ASSIGNED |
|---|--|-----------------|
| Maximum Population Equivalent (P.E.) served (Max 10 pts.) | 1 pt./10,000 PE or major fraction thereof. | 0.1 |
| Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.) | 1 pt. / MGD or major fraction thereof. | 0.1 |
| EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY: | | |
| Missouri or Mississippi River | 0 | |
| All other stream discharges except to losing streams and stream reaches supporting whole body contact | 1 | |
| Discharge to lake or reservoir outside of designated whole body contact recreational area | 2 | |
| Discharge to losing stream, or stream, lake or reservoir area supporting whole body contact recreation | 3 | 3 |
| PRELIMINARY TREATMENT - Headworks | | |
| Screening and/or comminution | 3 | 3 |
| Grit removal | 3 | |
| Plant pumping of main flow (lift station at the headworks) | 3 | 3 |
| PRIMARY TREATMENT | | |
| Primary clarifiers | 5 | |
| Combined sedimentation/digestion | 5 | |
| Chemical addition (except chlorine, enzymes) | 4 | |
| REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only) | | |
| Push – button or visual methods for simple test such as pH, Settleable solids | 3 | |
| Additional procedures such as DO, COD, BOD, titrations, solids, volatile content | 5 | |
| More advanced determinations such as BOD seeding procedures, fecal coliform, nutrients, total oils, phenols, etc. | 7 | 7 |
| Highly sophisticated instrumentation, such as atomic absorption and gas chromatograph | 10 | |
| ALTERNATIVE FATE OF EFFLUENT | | |
| Direct reuse or recycle of effluent | 6 | |
| Land Disposal – low rate | 3 | |
| High rate | 5 | |
| Overland flow | 4 | |
| Total from page ONE (1) | ---- | 16.2 |

APPENDIX - CLASSIFICATION WORKSHEET (CONTINUED):

| ITEM | POINTS POSSIBLE | POINTS ASSIGNED |
|--|-----------------|-----------------|
| VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances) | | |
| Variation do not exceed those normally or typically expected | 0 | |
| Recurring deviations or excessive variations of 100 to 200 % in strength and/or flow | 2 | |
| Recurring deviations or excessive variations of more than 200 % in strength and/or flow | 4 | 4 |
| Raw wastes subject to toxic waste discharge | 6 | |
| SECONDARY TREATMENT | | |
| Trickling filter and other fixed film media with secondary clarifiers | 10 | |
| Activated sludge with secondary clarifiers (including extended aeration and oxidation ditches) | 15 | 15 |
| Stabilization ponds without aeration | 5 | |
| Aerated lagoon | 8 | |
| Advanced Waste Treatment Polishing Pond | 2 | |
| Chemical/physical – without secondary | 15 | |
| Chemical/physical – following secondary | 10 | |
| Biological or chemical/biological | 12 | |
| Carbon regeneration | 4 | |
| DISINFECTION | | |
| Chlorination or comparable | 5 | |
| Dechlorination | 2 | |
| On-site generation of disinfectant (except UV light) | 5 | |
| UV light | 4 | 4 |
| SOLIDS HANDLING - SLUDGE | | |
| Solids Handling Thickening | 5 | 5 |
| Anaerobic digestion | 10 | |
| Aerobic digestion | 6 | 6 |
| Evaporative sludge drying | 2 | 2 |
| Mechanical dewatering | 8 | |
| Solids reduction (incineration, wet oxidation) | 12 | |
| Land application | 6 | |
| Total from page TWO (2) | ---- | 36 |
| Total from page ONE (1) | --- | 16.2 |
| Grand Total | --- | 52.2 |

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

APPENDIX FOR ANTIDEGRADATION REVIEW ANALYSIS:

Water Quality and Antidegradation Review

*For the Protection of Water Quality
and Determination of Effluent Limits for Discharge to
Unnamed Tributary to North Fork of Spring River*

*by
City of Golden City, Wastewater Treatment Facility*



June, 2010

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1. FACILITY INFORMATION

FACILITY NAME: City of Golden City WWTF NPDES #: MO-0031658

FACILITY TYPE/DESCRIPTION: The current design flow is 0.125 MGD. The current facility is a trickling filter. The proposed design flow will be 0.310 MGD. The proposed facility will have extended aeration using an oxidation ditch. The applicant submitted a Preliminary Waste Water Engineering Report that describes the facility as having influent screening, storm water holding, extended aeration using an oxidation ditch, secondary clarification, sludge pumping, aerobic digestion, filtration, and ultraviolet disinfection.

EDU*: Ozark/Neosho ECOREGION: Ozark Highlands 8-DIGIT HUC: 11070207 COUNTY: Barton
 * - Ecological Drainage Unit

LEGAL DESCRIPTION: NW1/4, SW1/4 Section 26, T 31N, R29W UTM COORDINATES: X-402839/Y-4139532

2. WATER QUALITY INFORMATION

In accordance with Missouri’s Water Quality Standard [10 CSR 20-7.031(2)] and federal antidegradation policy at Title 40 Code of Federal Regulation (CFR) Section 131.12 (a), the Missouri Department of Natural Resources (MDNR) developed a statewide antidegradation policy and corresponding procedures to implement the policy. A proposed discharge to a water body will be required to undergo a level of Antidegradation Review which documents that the use of a water body’s available assimilative capacity is justified. Effective August 30, 2008, a facility is required to use *Missouri’s Antidegradation Rule and Implementation Procedure (AIP)* for new and expanded wastewater discharges.

2.1. WATER QUALITY HISTORY:

The North Fork of the Spring River has a Total Maximum Daily Load (TMDL) for total suspended solids. This means that Golden City has a wasteload allocation for total suspended solids (TSS) that the City must meet. Also, the 2008 303(d) and 305(b) lists have bacteria and an unknown pollutant as a Tier 1 Pollutant or impairment for this segment of the river. Average monthly BOD5 was exceeded once in 2006. The applicant failed to report ammonia and fecal coliform on four occasions in 2006.

| OUTFALL | DESIGN FLOW (CFS) | TREATMENT LEVEL | RECEIVING WATERBODY | DISTANCE TO CLASSIFIED SEGMENT (MI) |
|---------|-------------------|-----------------|--|-------------------------------------|
| 001 | 0.48 | Secondary | Unnamed Tributary of North Fork Spring River | 1.9 |

3. RECEIVING WATERBODY INFORMATION

| WATERBODY NAME | CLASS | WBID | LOW-FLOW VALUES (CFS) | | | DESIGNATED USES** |
|--|-------|------|-----------------------|------|-------|--------------------------------------|
| | | | 1Q10 | 7Q10 | 30Q10 | |
| Unnamed Tributary to North Fork Spring River | U | - | - | - | - | General Criteria |
| North Fork Spring River | C | 3188 | 0.1 | 0.1 | 1.0 | LWW, AQL, WBC(B) General Criteria |

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

RECEIVING WATER BODY SEGMENT #1: Unnamed Tributary to North Fork Spring River

Upper end segment* UTM coordinates: X-402839/Y-4139532 (Outfall)

Lower end segment* UTM coordinates: X- 404163 Y-4141461 (North Fork Spring River classified)

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

4. GENERAL COMMENTS

Scott Consulting Engineers prepared, on behalf of City of Golden City, the *City of Golden City, Missouri Wastewater Treatment & Collection System Improvements Antidegradation Review Report* dated April 2010. Geohydrologic Evaluation was submitted with the request and the receiving stream is gaining for discharge purposes (Appendix A: Map). Applicant elected to determine that the discharge of all pollutants of concern (POC) is non-degrading or insignificant to the receiving stream. This analysis was conducted to fulfill the requirements of the AIP. With available assumptions, the department completed the dissolved oxygen modeling analysis shown in Appendix C. In addition, information that was provided by the applicant in the submitted report and summary forms in Appendix E was used to develop this review document. A Missouri Department of Conservation Natural Heritage Review was obtained by the applicant; and subsequently, MDC found no record of endangered species within one mile of the site (see report in Appendix B).

5. ANTIDegradation REVIEW INFORMATION

The following is a review of the *City of Golden City, Missouri Wastewater Treatment & Collection System Improvements Antidegradation Review Report* dated April 2010.

5.1. TIER DETERMINATION

Below is a list of pollutants of concern reasonably expected to be in the discharge (see Appendix D: Tier Determination and Effluent Limit Summary). Pollutants of concern are defined as those pollutants “proposed for discharge that affects beneficial use(s) in waters of the state. POCs include pollutants that create conditions unfavorable to beneficial uses in the water body receiving the discharge or proposed to receive the discharge.” (AIP, Page 7). Total suspended solids affect general criteria and have a TMDL; therefore, we are considering TSS Tier 1. Bacteria are considered to be Tier 1 based upon 2008 303 (d) list. Tier 2 was assumed for all POCs (see Appendix D).

Table 1. Pollutants of Concern and Tier Determination

| POLLUTANTS OF CONCERN | TIER* | DEGRADATION | COMMENT |
|--|-------|---------------|---|
| BOD5/DO | * | Insignificant | |
| Total Suspended Solids (TSS) | ** | Insignificant | <i>Tier 1 based upon general criteria</i> |
| Ammonia | * | Insignificant | |
| pH | *** | Insignificant | Permit limits applied |
| Bacteria/ <i>Escherichia coli</i> (<i>E. coli</i>) | 1 | Insignificant | Permit limits applied |

*Tier determination not possible with the demonstration of mass loading maintenance. Tier determination not possible: ** No in-stream standards for these parameters. *** Standards for these parameters are ranges.

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

Tier Determination and Effluent Summary

For pollutants of concern, the attachments are:

Attachment B, Tier 2 with minimal degradation.

Attachment D, Tier 1 Review. Additionally, a Tier 2 review must be conducted for each pollutant of concern on the appropriate water body segment

5.2. EXISTING WATER QUALITY

No existing water quality data was submitted. Two POCs, TSS and bacteria were considered Tier 1 based upon the approved TMDL and 303(d) listing.

5.3. DEMONSTRATION OF INSIGNIFICANCE

In Section II.A of the *Missouri's Antidegradation Rule and Implementation Procedure*, a demonstration of insignificance of the discharge requires the applicant to show a reduction, or maintenance of loading, i.e., no change in ambient water quality concentrations in the receiving waters. As demonstrated in *Antidegradation Report* dated, Table 2 below summarizes the results of current loading based on the current permit concentrations and proposed loadings based on the proposed permit concentrations. Proposed permit concentrations are based upon chronic criteria to protect aquatic life

Table 2. Net Change in Loadings Based upon Current and Proposed Permit Limits.

| POLLUTANTS OF CONCERN | CURRENT WEEKLY AVERAGE OR MAXIMUM DAILY LIMIT (MG/L) | PROPOSED MAXIMUM DAILY LIMIT (NOTE 1) (MG/L) | CURRENT LOADING (LBS/DAY) | PROPOSED LOADING (LBS/DAY) | NET CHANGE (LBS/DAY) |
|--------------------------------------|--|--|---------------------------|----------------------------|----------------------|
| BOD5 | 60 (AWL) | 24 (AWL) | 62.6 | 62.6 | 0.0 |
| Total Suspended Solids (TSS) | 60 (AWL) | 24 (AWL) | 62.6 | 62.6 | 0.0 |
| pH | 6.0-9.0 SI units | 6.0-9.0 SI units | Not applicable | Not applicable | Not applicable |
| Ammonia (Summer) | 10.3*** | 4.2 | 10.7 | 10.7 | 0.0 |
| Ammonia (Winter) | 13.1*** | 5.3 | 13.7 | 13.7 | 0.0 |
| Bacteria/ Escherichia coli (E. coli) | Regulatory limits apply | Regulatory limits apply | Not applicable** | Not applicable | Not applicable |
| Oil and Grease | 15 | 15 | Not applicable | Not applicable | Not applicable |

**See Derivation and Discussion of Limits, Section 10.

***Values are not currently in the permit. These limits were determined to bring the facility into compliance with water quality standards.

AWL = average weekly limit.

Note 1--Proposed effluent limits that were provided by applicant were determined by using the *ratio of current design flow to proposed design flow or 0.40; thus 40 % of the current limit is applied as the proposed limit.* For BOD5 and TSS, weekly average limits were retained.

Current design flow (Qd) = 0.125 MGD

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

Wasteload Allocation (WLA) = maximum daily or weekly average

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

Example: 8.34 (lbs/MG)/(mg/L) * 60 mg/L * 0.125 MGD = 62.6 lbs/day

5.4. DEMONSTRATION OF NECESSITY AND SOCIAL AND ECONOMIC IMPORTANCE

Missouri's antidegradation implementation procedures specify that if the proposed activity does not result in significant degradation then a demonstration of necessity (i.e., alternatives analysis) and a determination of social and economic importance are not required. Thus, the Tier 2 Review is not required.

6. GENERAL ASSUMPTIONS OF THE WATER QUALITY AND ANTIDegradation REVIEW

1. A Water Quality and Antidegradation Review (WQAR) assumes that [10 CSR 20-6.010(3) Continuing Authorities and 10 CSR 20-6.010(4) (D), consideration for no discharge] has been or will be addressed in a Missouri State Operating Permit or Construction Permit Application.
2. A WQAR does not indicate approval or disapproval of alternative analysis as per [10 CSR 20-7.015(4) Losing Streams], and/or any section of the effluent regulations.
3. Changes to Federal and State Regulations made after the drafting of this WQAR may alter Water Quality Based Effluent Limits (WQBEL).
4. Effluent limitations derived from Federal or Missouri State Regulations (FSR) may be WQBEL or Effluent Limit Guidelines (ELG).
5. WQBEL supersede ELG only when they are more stringent. Mass limits derived from technology based limits are still appropriate.
6. A WQAR does not allow discharges to waters of the state, and shall not be construed as a National Pollution Discharge Elimination System or Missouri State Operating Permit to discharge or a permit to construct, modify, or upgrade.
7. Limitations and other requirements in a WQAR may change as Water Quality Standards, Methodology, and Implementation procedures change.
8. Nothing in this WQAR removes any obligations to comply with county or other local ordinances or restrictions.

7. MIXING CONSIDERATIONS

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

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

| | Flow (cfs) | MZ (cfs) | ZID (cfs) |
|--------------|------------|----------|-----------|
| 7Q10 | 0.0 | 0.0 | 0.0 |
| 1Q10 | 0.0 | 0.0 | 0.0 |
| 30Q10 | 0.0 | 0.0 | 0.0 |

$$AEC\% = \left(\frac{100}{DilutionRatio + 1} \right)$$

8. PERMIT LIMITS AND MONITORING INFORMATION

WASTELOAD ALLOCATION
 STUDY CONDUCTED (Y OR N): N

USE ATTAINABILITY
 ANALYSIS CONDUCTED (Y OR N): Y

WHOLE BODY CONTACT
 USE RETAINED (Y OR N): Y

UAA WAS CONDUCTED FOR THE CITY OF GOLDEN CITY IN JULY 11, 2005. NO DECISION HAS BEEN MADE ON THE UAA, THUS WBCR (B) IS RETAINED.

OUTFALL #001

WET TEST (Y OR N): Y

FREQUENCY: TWICE/PERMIT AEC: 100% METHOD: MULTIPLE
CYCLE

TABLE 3. EFFLUENT LIMITS

| PARAMETER | DAILY MAXIMUM | WEEKLY AVERAGE | MONTHLY AVERAGE | BASIS FOR LIMIT (NOTE 2) | MONITORING FREQUENCY |
|---|---|----------------|-----------------|--------------------------|----------------------|
| FLOW | * | | * | | ONCE/DAY |
| BOD ₅ (MG/L)** | | 24 | 16 | NDEL | ONCE/MONTH |
| TSS (MG/L) | | 24 | 16 | NDEL | ONCE/MONTH |
| PH (S.U.) | 6.5 – 9.0 | | 6.5 – 9.0 | FSR | ONCE/MONTH |
| TEMPERATURE (°C) | * | | * | N/A | ONCE/MONTH |
| AMMONIA AS N (MG/L) (MAY 1 – OCT 31) | 4.2 | | 1.6 | NDEL | ONCE/MONTH |
| AMMONIA AS N (MG/L) (NOV 1 – APR 30) | 5.3 | | 2.0 | NDEL | ONCE/MONTH |
| <i>ESCHERICHIA COLIFORM (E. COLI)</i> (NOTE 1) | | | 206** | FSR | ONCE/WEEK |
| NUTRIENTS, TOTAL NITROGEN OR TOTAL PHOSPHORUS | THE DEPARTMENT IS CURRENTLY DEVELOPING CRITERIA FOR STREAMS. | | | | |

NOTE 1 – COLONIES/100 ML

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

* - Monitoring requirements only.

** - The Monthly Average for Fecal Coliform or *E. coli* shall be reported as a Geometric Mean.

***This facility is required to meet a removal efficiency of 85% or more for BOD₅ and TSS. Influent BOD₅ and TSS data should be reported to ensure removal efficiency requirements are met.

9. RECEIVING WATER MONITORING REQUIREMENTS

No receiving water monitoring requirements recommended at this time.

10. DERIVATION AND DISCUSSION OF LIMITS

Wasteload allocations and limits were calculated using two methods:

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

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

Where C = downstream concentration

C_s = upstream concentration

Q_s = upstream flow

C_e = effluent concentration

Q_e = effluent flow

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

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

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

Maintenance of Loading:

In Section II.A of the *Missouri's Antidegradation Rule and Implementation Procedure*, a demonstration of insignificance of the discharge requires the applicant to show a reduction, or maintenance of loading, i.e., no change in ambient water quality concentrations in the receiving waters. For the pollutants of concern below, loading was maintained using the following generalized equations:

- Current design flow (Q_d) = 0.125 MGD
- Expanded design flow (Q_d) = 0.310 MGD
- Mass conversion -- 1 mg/L = 8.34 lbs/million gallons
- Wasteload Allocation (WLA) = maximum daily or weekly average

Existing Load (lbs/day) = Mass conversion * WLA * current Q_d
 Expanded Load (lbs/day) = Mass conversion * WLA * expanded Q_d

For each POC, tables below provide the current limitation and apply the equations above to derive the expansion limitation based upon the proposed expanded flow.

10.1. OUTFALL #001 – MAIN FACILITY OUTFALL

10.2. LIMIT DERIVATION

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD₅).** BOD₅ limits of 16 mg/L monthly average, 24 mg/L average weekly. These expansion or no degradation limitations (NDL) are non-degrading and protective of existing water quality.

| Parameter | Limit | WLA (mg/L) | (LBS/MG)/(mg/L) | Current Q _d MGD | Load (lbs/ day) | Expanded Q _d MGD | Expansion limit (mg/L) |
|-----------|---------|------------|-----------------|----------------------------|-----------------|-----------------------------|------------------------|
| BOD | Monthly | 40.0 | 8.34 | 0.125 | 41.7 | 0.31 | 16.1 |
| | Weekly | 60.0 | 8.34 | 0.125 | 62.6 | 0.31 | 24.2 |

Modeling in Appendix C demonstrates that BOD₅ effluent is protective of water quality standards for dissolved oxygen (DO) in (mg/L). Streeter Phelps modeling indicated that at approximately 10,500 feet (less than 2 miles) from the outfall location, DO exceeds the water quality standards of 5.0 mg/L. In addition, once the effluent water mixes with the North Fork of the Spring River the concentration should increase.

We used the following to determine stream velocity for the unnamed tributary of North Fork of the Spring River. For riffle-pool reaches having slopes ranging from 0.00012 to 0.0057 ft/ft, the Boning (1974) equation may be used:

$$U = 0.38 \cdot Q^{0.4} \cdot s^{0.2}$$

- where:
- U = Velocity, fps
 - Q = Effluent Discharge, cfs
 - s = Channel slope, feet per feet

Influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **Total Suspended Solids (TSS).** 16 mg/L monthly average, 24 mg/L average weekly limit. According to EPA, because TSS and BOD are closely correlated, we apply the same limits for TSS as BOD. The table below provides the expansion limitations that are protective of water quality standards. The North Fork of the Spring River has a Total Maximum Daily Load waste load allocation for the current design flow of 0.125 MGD. The wasteload allocation for the weekly and monthly average is approximately 0.031 and 0.021 tons/day, respectively, or 62 or 42 pounds per day. Essentially, the values below represent the Tier 1 Review for TSS that meets the requirements of the North Fork of the Spring River TMDL.

| Parameter | Limit | WLA (mg/L) | (LBS/MG)/(mg/L) | Current Qd MGD | Load (lbs/ day) | Expanded Qd MGD | Expansion limit (mg/L) |
|-----------|---------|------------|-----------------|----------------|-----------------|-----------------|------------------------|
| TSS | Monthly | 40.0 | 8.34 | 0.125 | 41.7 | 0.31 | 16.1 |
| | Weekly | 60.0 | 8.34 | 0.125 | 62.6 | 0.31 | 24.2 |

The influent monitoring may be required for this facility in its Missouri State Operating Permit.

- **pH.** pH shall be maintained in the range from 6.5– 9.0 standard units [10 CSR 20-7.031].
- **Temperature.** Monitoring requirement only. Temperature affects the toxicity of Ammonia.
- **Total Ammonia Nitrogen.** Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3]. Background total ammonia nitrogen = 0.01 mg/L

| Season | Temp (°C) | pH (SU) | Total Ammonia Nitrogen CCC (mg N/L) | Total Ammonia Nitrogen CMC (mg N/L) |
|--------|-----------|---------|-------------------------------------|-------------------------------------|
| Summer | 26 | 7.38 | 2.3 | 23.0 |
| Winter | 6 | 7.38 | 4.8 | 23.0 |

Summer: May 1 – October 31, Winter: November 1 – April 30.

Using the discharge monitoring data, Scott Consulting Engineers determined average pH via conversion to H⁺ ions concentrations.

The department staff calculated the following limitations to be protective of water quality standards for the current discharge design flow. The facility would receive these limitations if a reasonable potential to exceed criteria exists and no expansion was planned. The expansion limitations are based on the loading to the stream using these water quality-based effluent limitations. The table below shows the maximum daily limitations for winter and summer.

Staff utilized a modified Feed Forward Reaction decay formula to allow degradation for ammonia prior to reaching the first classified water body:

$$[\text{NH}_3\text{N}]_t = [\text{NH}_3\text{N}]_{t=0} * e^{-kt}$$

Where

$[\text{NH}_3\text{N}]_t$ = ammonia concentration at confluence with classified segment.

$[\text{NH}_3\text{N}]_{t=0}$ = ammonia concentration at pipe = C_e

k = NH_3 oxidation per day $(k_{1,20})\Xi_1^{(T_{\text{Temp}}-20)}$

$$k_{1,20} = 0.3(\text{day}^{-1})$$

$$\Xi_1 = \text{temperature correction factor} = 1.083$$

t = time for effluent to travel to first classified segment (in days) = 1.2 days (See Appendix D, Page 1 for time of travel determination and consultants ammonia calculations which are verified below.)

Travel time was calculated using site-specific data submitted by Scott Consulting Engineers

Summer Temp. = 26°C

Given $k = (0.3)(1.083)^{(26 - 20)} = 0.4841$ and $t = 1.2$ days; $e^{-kt} = e^{-(0.4841)(1.2)} = 0.55$

Which means 55 % of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$C_e = (2.3 \text{ mg/L}) / 0.55 = 4.18 \text{ mg/L}$

$LTA_c = 4.2 \text{ mg/L} (0.780) = \mathbf{3.3 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day average]

MDL = 3.3 mg/L (3.11) = 10.3 mg/L [CV = 0.6, 99th Percentile]

AML = 3.3 mg/L (1.19) = 3.9 mg/L [CV = 0.6, 95th Percentile, n = 30]

Winter Temp. = 6°C

Given $k = (0.3)(1.083)^{(6 - 20)} = 0.0982$ and $t = 1.2$ days; $e^{-kt} = e^{-(0.0982)(1.2)} = 0.89$

Which means 89% of the ammonia concentration remains after leaving the facility and reaching the first classified stream segment.

$C_e = (4.8 \text{ mg/L}) / 0.89 = 5.4 \text{ mg/L}$

$LTA_c = 5.4 \text{ mg/L} (0.780) = \mathbf{4.2 \text{ mg/L}}$ [CV = 0.6, 99th Percentile, 30 day average]

MDL = 4.2 mg/L (3.11) = 13.1 mg/L [CV = 0.6, 99th Percentile]

AML = 4.2 mg/L (1.19) = 4.9 mg/L [CV = 0.6, 95th Percentile, n = 30]

| Season | Maximum Daily Limit (mg/l) | Average Monthly Limit (mg/l) |
|--------|----------------------------|------------------------------|
| Summer | 10.3 | 3.9 |
| Winter | 13.1 | 4.9 |

Table for development of maximum daily and average monthly expansion limitations

| Parameter | Limit | WLA (mg/L) | (LBS/MG)/(mg/L) | Current Qd MGD | Load (lbs/ day) | Expanded Qd MGD | Expansion limit (mg/L) |
|-----------|----------------|------------|-----------------|----------------|-----------------|-----------------|------------------------|
| Ammonia | Monthly Summer | 3.9 | 8.34 | 0.125 | 4.1 | 0.31 | 1.6 |
| | Weekly Summer | 10.3 | 8.34 | 0.125 | 10.7 | 0.31 | 4.2 |
| Ammonia | Monthly Winter | 4.9 | 8.34 | 0.125 | 5.1 | 0.31 | 2.0 |
| | Daily Winter | 13.1 | 8.34 | 0.125 | 13.7 | 0.31 | 5.3 |

Expansion limitations

| Season | Maximum Daily Limit (mg/l) | Average Monthly Limit (mg/l) |
|--------|----------------------------|------------------------------|
| Summer | 4.2 | 1.6 |
| Winter | 5.3 | 2.0 |

- **E. coli**. Effluent limitations for WBCR(B) are 206 colonies per 100 ml [10 CSR 20-7.031(4) (C), Table A]. Effective June 15, 2010, E. coli will replace Fecal Coliform as the indicator bacteria criteria. The proposed E. coli rule was published in the Missouri Register on November 2, 2009 and was adopted by the Missouri Clean Water Commission on March 3, 2010. In the rule, weekly monitoring is required during the recreational season with compliance to be determined by calculating the geometric mean of all samples collected each calendar month. The U.S. Environmental Protection Agency (EPA) requires effluent limits to be expressed as average weekly for Publicly-Owned Treatment Works that continuously discharge. The Department is currently working with EPA to develop appropriate shorter frequency limits. Also, please see **GENERAL ASSUMPTIONS OF THE WQAR #7**. The North Fork of the Spring River is Tier 1 for bacteria and the facility is slightly less than 2 miles from the North Fork. For these reasons, disinfection will be required. Current requirements for E. coli are default limitations based on treatment system designed for total removal of bacteria.
- **Oil & Grease**. Conventional pollutant, [10 CSR 20-7.031, Table A]. Effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum. These limits are water quality based and were created to prevent a sheen on surface water. Therefore, there are no antidegradation requirements for oil and grease beyond meeting the above limits.
- **Total Nitrogen and Total Phosphorus**. The city will need to address one or both of these nutrients once the stream criteria are included in the water quality standards. No limitation or monitoring will be required for this review.

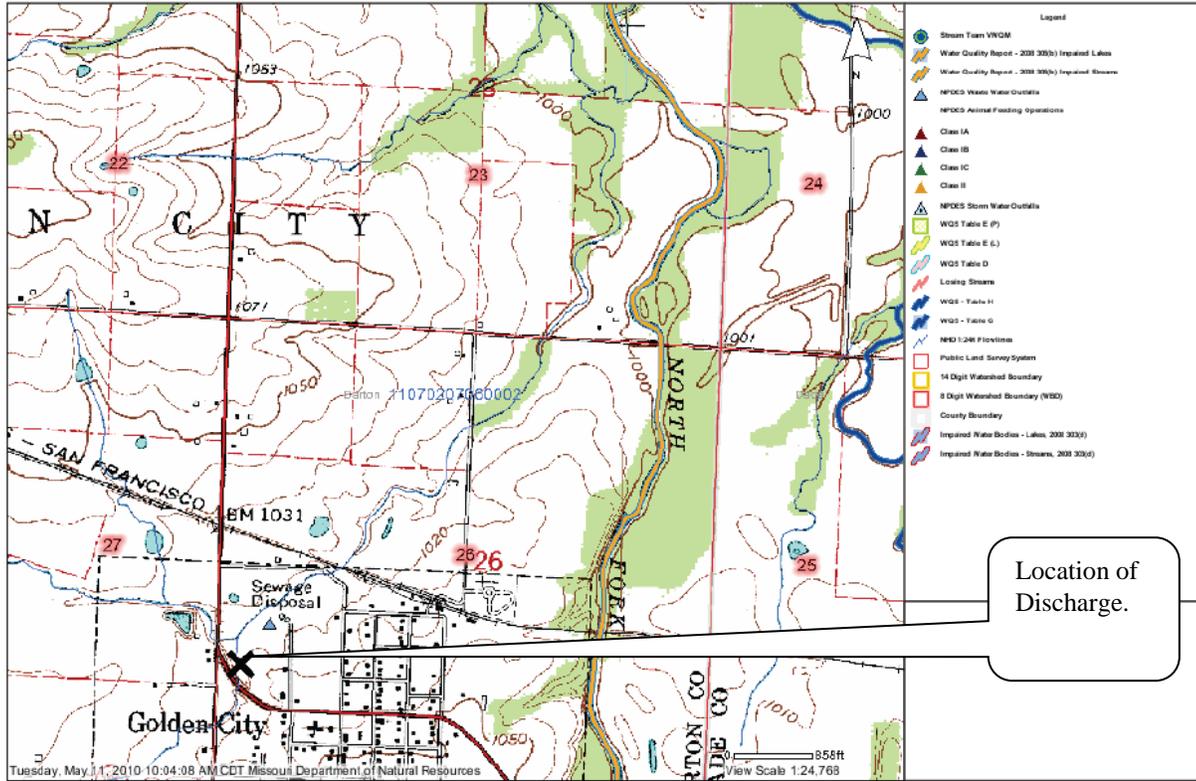
11. ANTIDegradation Review Preliminary Determination

The proposed new facility discharge, City of Golden City WWTF, of 0.310 MGD will result in no degradation of the segment identified in the Unnamed Tributary to the North Fork Spring River. Per the requirements of the AIP, the effluent limits in this review were developed to be protective of beneficial uses and to retain the remaining assimilative capacity. MDNR has determined that the submitted review is sufficient and meets the requirements of the AIP. No further analysis is needed for this discharge.

Reviewer: Todd J. Blanc
Date: 6/2010
Unit Chief: John Rustige, P.E.

Appendix A: Map of Discharge Location

City of Golden City WWTF



Missouri
 Department of
 Natural Resources

Disclaimer: Although this map has been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.

Appendix B: Natural Heritage Review

| | | | |
|---|--|---|--|
|  | Missouri Department of Conservation Heritage Review Report March 5, 2010 – Page 1 of 2 | | Policy Coordination Unit P. O. Box 180 Jefferson City, MO 65102 heritage_review@mdc.mo.gov 573-522-4115 X 3367 |
| | Sue Bacorn, Consultant Bacorn Enterprises, LLC 4846 S. Montrose Place Springfield, MO 65810 suebacorn@sbcglobal.net | Project type: Wastewater treatment & collection Location/Scope: Section 26 of T31N R29W County: Barton Query reference: Golden City CDBG Query received: March 4, 2010 | |
| <p><i>This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and sensitive resources known to have been located close to and/or potentially affected by the proposed project. On-site verification is the responsibility of the project. Heritage records were identified at some date and location. This report considers records near but not necessarily at the project site. Animals move and, over time, so do plant communities. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean a protected species will not be encountered. These records only provide one reference and other information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed in order to avoid or minimize impacts. More information may be found at www.mdc.mo.gov/nathis/endangered/ and mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx. Contact information for the department's Natural History Biologist is online at http://www.mdc.mo.gov/nathis/contacts/.</i></p> <div style="text-align: right;">  3-5-2010 Prepared by: Shannon Cave </div> | | | |
| <p>Level 3 (federal-listed) and Level 2 (state listed) issues: Records of listed species or critical habitats: Heritage records identify <u>no</u> wildlife preserves, <u>no</u> designated wilderness areas or critical habitats, <u>no</u> state or federal endangered-list species records within one mile of the sites, or in public land survey sectiond 26, 27, 34 or 35 of T31N R29W. The project should be managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any "Clean Water Permit" conditions. Revegetate areas in which the natural cover is disturbed to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Pollutants, including sediment, can have significant impacts far downstream. Use silt fences and/or vegetative filter strips to buffer streams and drainages, and monitor those after rain events and until a well-rooted ground cover is reestablished. <small>FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Consult with U.S. Fish and Wildlife Service, 101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132</small></p> | | | |
| <p>General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific heritage records):</p> <ul style="list-style-type: none"> ➤ There are records of Arkansas darters, <i>Etheostoma cragini</i>, in the North Fork of Spring River, to which the treatment site drains. If proper runoff controls are practiced during construction, it seems unlikely that the project could have negative affects on this species. ➤ Prairie grasslands once dominated this area, and several species of concern, including federally listed Mead's milkweed (<i>Asclepias meadii</i>) and greater prairie chickens (<i>tyrnanuchus cupido</i>), a bird on the state's list of endangered species. Prairie species have been in serious decline for decades as prairie land was converted to other crops and grasses. Greater prairie chickens could be gone from Missouri within a few years. Prairie chickens range over a broad territory perhaps nesting, breeding and foraging in | | | |

Appendix C: Dissolved Oxygen Modeling using Streeter Phelps

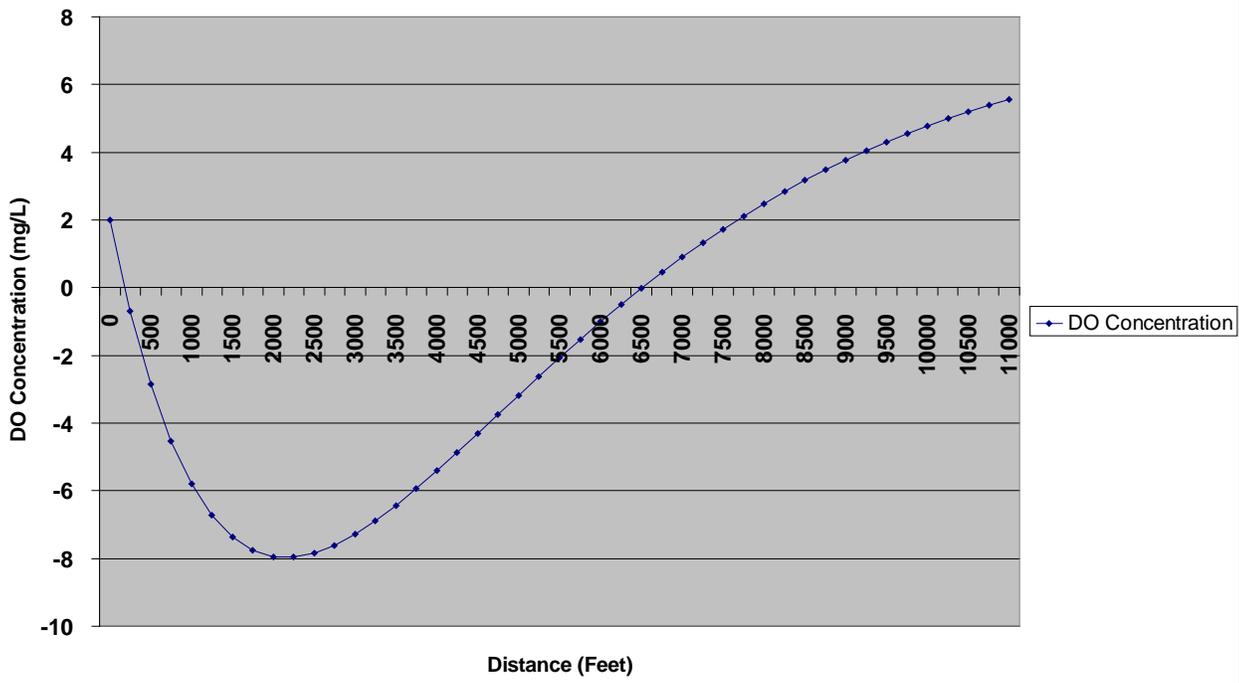
Streeter-Phelps analysis of critical dissolved oxygen sag.

Based on Lotus File DOSA G2.WK1 Revised 19-Oct-93

| INPUT | | | | |
|--|-----------|----------|-----------|----------|
| 1. EFFLUENT CHARACTERISTICS | | | | |
| Discharge (cfs): | | | | 0.48 |
| CBOD5 (mg/L): | | | | 19 |
| NBOD (mg/L): | | | | 5 |
| Dissolved Oxygen (mg/L): | | | | 2 |
| Temperature (deg C): | | | | 26 |
| 2. RECEIVING WATER CHARACTERISTICS | | | | |
| Upstream Discharge (cfs): | | | | 0 |
| Upstream CBOD5 (mg/L): | | | | 0.00 |
| Upstream NBOD (mg/L): | | | | 0 |
| Upstream Dissolved Oxygen (mg/L): | | | | 0 |
| Upstream Temperature (deg C): | | | | 0 |
| Elevation (ft NGVD): | | | | 1020 |
| Downstream Average Channel Slope (ft/ft): | | | | 0.004 |
| Downstream Average Channel Depth (ft): | | | | 0.5 |
| Downstream Average Channel Velocity (fps): | | | | 0.09 |
| 3. REAERATION RATE (Base e) AT 20 deg C (day⁻¹): | | | | |
| | | | | 2.76 |
| Reference | Applic. | Applic. | Suggested | |
| | Vel (fps) | Dep (ft) | Values | |
| Churchill | 1.5 - 6 | 2 - 50 | 3.59 | |
| O'Connor and Dobbins | .1 - 1.5 | 2 - 50 | 11.00 | |
| Owens | .1 - 6 | 1 - 2 | 15.51 | |
| Tsivoglou-Wallace | .1 - 6 | .1 - 2 | 2.49 | |
| 4. BOD DECAY RATE (Base e) AT 20 deg C (day⁻¹): | | | | |
| | | | | 3.33 |
| Reference | | | Suggested | |
| | | | Value | |
| Wright and McDonnell, 1979 | | | 3.33 | |
| OUTPUT | | | | |
| 1. INITIAL MIXED RIVER CONDITION | | | | |
| CBOD5 (mg/L): | | | | 19.0 |
| NBOD (mg/L): | | | | 5.0 |
| Dissolved Oxygen (mg/L): | | | | 2.0 |
| Temperature (deg C): | | | | 26.0 |
| 2. TEMPERATURE ADJUSTED RATE CONSTANTS (Base e) | | | | |
| Reaeration (day ⁻¹): | | | | 3.18 |
| BOD Decay (day ⁻¹): | | | | 4.39 |
| 3. CALCULATED INITIAL ULTIMATE CBODU AND TOTAL BODU | | | | |
| Initial Mixed CBODU (mg/L): | | | | 27.9 |
| Initial Mixed Total BODU (CBODU + NBOD, mg/L): | | | | 32.9 |
| 4. INITIAL DISSOLVED OXYGEN DEFICIT | | | | |
| Saturation Dissolved Oxygen (mg/L): | | | | 7.820 |
| Initial Deficit (mg/L): | | | | 5.82 |
| 5. TRAVEL TIME TO CRITICAL DO CONCENTRATION (days): | | | | |
| | | | | 0.227186 |
| 6. DISTANCE TO CRITICAL DO CONCENTRATION (feet): | | | | |
| | | | | 1766.60 |
| 7. CRITICAL DO DEFICIT (mg/L): | | | | |
| | | | | 16.76 |
| 8. CRITICAL DO CONCENTRATION (mg/L): | | | | |
| | | | | -8.94 |

Appendix C. continued.

Dissolved Oxygen Sag Curve for WWTF Expansion



Appendix D: Time of Travel and Ammonia Decay Calculations

SCOTT CONSULTING ENGINEERS, P.C.

550 St. Louis Street
 417-866-8644

Springfield, MO 65806
 FAX 417-866-3035

PROJECT NAME GOLDEN CITY DESCRIPTION AMMONIA LIMIT DATE 5/25 2010
WWTP IMPROVEMENTS CALCS PAGE NO. 1 OF
 PROJECT NO. 110007.00 FILE NO. COMPUTED BY TJW CHECKED BY

MASS BALANCE w/ Ammonia Decay (UNCLASSIFIED STREAM)

ASSUMPTIONS/PARAMETERS:

- CURRENTLY, STREAM HAS CONSTANT FLOW IN ADDITION TO THE PLANT OUTFALL; HOWEVER, THE PLANT EFFLUENT FLOW SHALL BE USED FOR CALCULATION PURPOSES.
- EXAMPLE #1 IN APPENDIX A OF THE AMMONIA CRITERIA DATED AUG. 9, 2007 SHALL BE USED AS A REFERENCE FOR SUBSEQUENT CALCULATIONS.
- ULTIMATE PLANT FLOW = 310,000 GPD = 0.48 cfs
- DISTANCE = 1.9 MILES (FROM OUTFALL TO CLASSIFIED STREAM ALONG UNNAMED TRIBUTARY TO NORTH FORK SPRING RIVER) (TAKEN FROM MDRP PRELIMINARY ANTI-DEQ REVIEW)
- SLOPE OF UNCLASSIFIED SEGMENT = 0.004 FT/FT (TAKEN FROM MDRP PRELIMINARY ANTI-DEQ REVIEW)
- C.W. POWERS (1974) "GENERALIZATION OF STREAM TRAVEL RATE" EQUATIONS SHALL BE USED TO ESTIMATE TRAVEL TIMES.
- AVERAGE pH = 7.38 (TAKEN FROM DMR'S FROM 2005 TO 2009)

Velocity

$$v_p = 0.38 Q^{0.43} S^{0.22}$$

$$= 0.38 (0.48)^{0.43} (0.004)^{0.22} = 0.094 \text{ FT/S}$$

v_p = velocity
 Q = 0.48 cfs
 S = 0.004 FT/FT

$$T_p = 1.47 \frac{L}{v_p}$$

$$= (1.47) \frac{(1.9)}{(0.094)} = 29.7 \text{ HOURS}$$

L = 1.9 miles
 T_p = TRAVEL TIME IN HOURS

$$= 1.24 \text{ DAYS}$$

SCOTT CONSULTING ENGINEERS, P.C.

550 St. Louis Street
 417-866-8644

Springfield, MO 65806
 FAX 417-866-3035

PROJECT NAME Golden City DESCRIPTION Ammonia Limits DATE 5/25 2010
WWTP Improvements CALLS PAGE NO. 2 OF
 PROJECT NO. 110007.00 FILE NO. COMPUTED BY TJW CHECKED BY

CCC DETERMINATION → USE SITE SPECIFIC pH

$$CCC^* = \frac{0.0577}{[1 + 10^{(4.688 - pH)}]} + \left[\frac{2.487}{[1 + 10^{(pH - 7.206)}]} \right] \left[\text{Min}(2.85, (1.45)(10^{0.028(25-T)}) \right]$$

pH = 7.38
 $T_{\text{summer}} = 26^\circ\text{C}$
 $T_{\text{winter}} = 6^\circ\text{C}$

* Assume ELS NOT PRESENT

CCC (summer) = 2.28 mg/L
 CCC (winter) = 4.77 mg/L

CALCULATE Ammonia Decay (USE APPENDIX A OF MDNR Ammonia Rule)

$$k = (0.3)(1.083)^{(T-20)} \quad T = 26^\circ\text{C}$$

$$= (0.3)(1.083)^{(26-20)} = 0.4841$$

t = 1.24 days (SEE PREVIOUS CALLS)

$$e^{-kt} \Rightarrow e^{-(0.4841)(1.24)} = e^{-0.600} = 0.5487$$

⇒ 54.9% OF Ammonia CONCENTRATION REMAINS AFTER REACTING (CLASSIFIED) STREAM SEGMENT

summer

$$C = (2.28 \text{ mg/L}) / (0.5487) = 4.16 \text{ mg/L}$$

$$C_e = \frac{[(Q_e + Q_s)(C)] - (Q_s)(C_s)}{Q_c} = \frac{[(0.31 + 0.0)(4.16)] - (0.0)(0.01)}{0.31} = 4.13 \text{ mg/L}$$

$$LTA_c = (4.13 \text{ mg/L})(0.78) = 3.22 \text{ mg/L}$$

$$MDL = (3.22 \text{ mg/L})(3.11) = 10.01 \text{ mg/L}$$

$$AML = (3.22 \text{ mg/L})(1.19) = 3.83 \text{ mg/L}$$

SCOTT CONSULTING ENGINEERS, P.C.

550 St. Louis Street
 417-866-8644

Springfield, MO 65806
 FAX 417-866-3035

PROJECT NAME GOLDEN CITY DESCRIPTION Ammonia Limit DATE 5/25 20 10
WWTP Improvements CALLS PAGE NO. 3 OF
 PROJECT NO. 110007.00 FILE NO. COMPUTED BY TJW CHECKED BY

CALCULATE Ammonia Decay (UNT'S)

$$k = (0.3)(1.083)^{(T-20)} \quad T = 6^\circ C$$

$$= (0.3)(1.083)^{(6-20)} = 0.0982$$

$$t = 1.24 \text{ Days}$$

$$e^{-kt} \rightarrow e^{-(0.0982)(1.24)} = e^{-(0.1218)} = 0.8854$$

\Rightarrow 88.5% OF Ammonia (CONCENTRATION) REMAINS AFTER PROTECTIVE CLASSIFIED STREAM SUBSEQUENT

$$C = (4.77 \text{ mg/L}) / (0.8854) = 5.39 \text{ mg/L}$$

$$C_e = \frac{[(0.31 + 0.0)(5.39)] - (0.0)(0.0)}{0.31} = 5.36 \text{ mg/L}$$

$$LTA_c = (5.36 \text{ mg/L})(0.78) = 4.18 \text{ mg/L}$$

$$MDL = (4.18 \text{ mg/L})(3.11) = 13.00 \text{ mg/L}$$

$$AML = (4.18 \text{ mg/L})(1.19) = 4.97 \text{ mg/L}$$

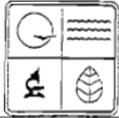
CURRENT CONDITIONS

| SEASON | MAX. DAILY LIMIT | AVERAGE MONTHLY LIMIT |
|--------|------------------|-----------------------|
| Summer | 10.0 mg/L | 3.8 mg/L |
| Winter | 13.0 mg/L | 5.0 mg/L |

Appendix E: Antidegradation Review Summary Attachments

The applicant provided the following attachments that contain antidegradation summary information. MDNR staff determined that changes must be made to the information contained within these attachments. The following were modified and can be found within the MDNR WQAR:

- 1) Tier Determination and Effluent Limit Summary Sheet: No changes were needed.
- 2) Attachment B
- 3) Attachment D



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM
ANTIDegradation REVIEW SUMMARY
TIER DETERMINATION AND EFFLUENT LIMIT SUMMARY

| | | | |
|--|--|---|--------------------------------|
| 1. FACILITY | | | |
| NAME GOLDEN CITY WASTEWATER TREATMENT FACILITY | | TELEPHONE NUMBER WITH AREA CODE (417) 537-4351 | |
| ADDRESS (PHYSICAL) 302 VINE STREET | | CITY GOLDEN CITY | STATE ZIP CODE MO 64748 |
| 2. RECEIVING WATER BODY SEGMENT #1 | | | |
| NAME UNNMANED TRIBUTARY TO THE NORTH FORK SPRING RIVER | | | |
| 2.1 | UPPER END OF SEGMENT (Location of discharge) UTM _____ OR Lat 37.400 DEG, Long 94.097 DEG | | |
| 2.2 | LOWER END OF SEGMENT UTM _____ OR Lat 37.415 DEG, Long 94.083 DEG | | |
| <small>Per the Missouri Antidegradation Rule and implementation Procedure, or AIP, the definition of a segment, "a segment is a section of water that is bound, at a minimum, by significant existing sources and confluences with other significant water bodies."</small> | | | |
| 3. WATER BODY SEGMENT #2 (IF APPLICABLE) | | | |
| NAME N/A | | | |
| 3.1 | UPPER END OF SEGMENT UTM _____ OR Lat _____, Long _____ | | |
| 3.2 | LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____ | | |
| 4. WATER BODY SEGMENT #3 (IF APPLICABLE) | | | |
| NAME N/A | | | |
| 4.1 | UPPER END OF SEGMENT UTM _____ OR Lat _____, Long _____ | | |
| 4.2 | LOWER END OF SEGMENT UTM _____ OR Lat _____, Long _____ | | |
| 5. PROJECT INFORMATION | | | |
| Is the receiving water body an Outstanding National Resource Water, an Outstanding State Resource Water, or drainage thereto? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| <small>In Tables D and E of 10 CSR 20-7.031, Outstanding National Resource Waters and Outstanding State Resource Water are listed. Per the Antidegradation Implementation Procedure Section 1.B.3., "any degradation of water quality is prohibited in these waters unless the discharge only results in temporary degradation." Therefore, if degradation is significant or minimal, the Antidegradation Review will be denied.</small> | | | |
| Will the proposed discharge of all pollutants of concern, or POCs, result in no net increase in the ambient water quality concentration of the receiving water after mixing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| <small>If yes, submit a summary table showing the levels of each pollutant of concern before and after the proposed discharge in the receiving water and then complete Attachment B for the first downstream classified water body segment.</small> | | | |
| Will the discharge result in temporary degradation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| <small>If yes, complete Attachment C.</small> | | | |
| Has the project been determined as non-degrading? <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| <small>If yes, complete No Degradation Evaluation – Conclusion of Antidegradation Review form. Submit with the appropriate Construction Permit Application as no antidegradation review is required.</small> | | | |
| If yes to one of the above questions, skip to Section 8 - Wet Weather. | | | |

6. EXISTING WATER QUALITY DATA OR MODEL SUMMARY

Obtaining Existing Water Quality is possible by three methods according to the Antidegradation Implementation Procedure Section II.A.1.: (1) using previously collected data with an appropriate Quality Assurance Project Plan, or QAPP (2) collecting water quality data by approved the Missouri Department of Natural Resources methodology or (3) using an appropriate water quality model. QAPPs must be submitted to the department for approval well in advance (six months) of the proposed activity. Provide all the appropriate corresponding data and reports which were approved by the department Water Quality Monitoring and Assessment Section.

Date existing water quality data was provided by the Water Quality Monitoring and Assessment Section:

Approval date of the QAPP by the Water Quality Monitoring and Assessment Section:

Approval date of the project sampling plan by the Water Quality Monitoring and Assessment Section:

Approval date of the data collected for all appropriate pollutants of concern by the Water Quality Monitoring and Assessment Section:

Comments/Discussion:

7. POLLUTANTS OF CONCERN AND TIER DETERMINATION(S)

Pollutants of Concern to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.S. The tier protection levels are specified and defined in rule at 10 CSR 20-7.031 (2).

| Water Body Segment One | | |
|---|---------------------------------|-------------------------------------|
| Pollutants of Concern and Tier Determination(s) | | |
| Tier 1 | Tier 2 with Minimal Degradation | Tier 2 with Significant Degradation |
| | | |
| | | |
| | | |
| | | |
| | | |

Note: Add an asterisk to items that you only assume are Tier 2 with significant degradation.

| Water Body Segment Two | | |
|---|---------------------------------|-------------------------------------|
| Pollutants of Concern and Tier Determination(s) | | |
| Tier 1 | Tier 2 with Minimal Degradation | Tier 2 with Significant Degradation |
| | | |
| | | |
| | | |
| | | |
| | | |

- For pollutants of concern that are Tier 2 with significant degradation, complete Attachment A.
- For pollutants of concern that are Tier 2 with minimal degradation, complete Attachment B.
- For pollutants of concern that are Tier 1, complete Attachment D. Additionally, a Tier 2 review must be conducted for each pollutant of concern on the appropriate water body segment.

8. WET WEATHER ANTICIPATIONS

If an applicant anticipates excessive inflow or infiltration and pursues approval from the department to bypass secondary treatment, a feasibility analysis is required. The feasibility analysis must comply with the criteria of all applicable state and federal regulations including 40 CFR 122.41(m)(4). Attach the feasibility analysis to this report.

What is the Wet Weather Flow Peaking Factor in relation to design flow? 3

Wet Weather Design Summary:

IT IS ANTICIPATED THAT STORM WATER HOLDING WILL BE PROVIDED FOR PEAK FLOW EVENTS.

9. SUMMARY OF THE PROPOSED ANTIDegradation REVIEW EFFLUENT LIMITS

What are the proposed pollutants of concern and their respective effluent limits that the selected treatment option will comply with:

| Pollutant of Concern | Units | Wasteload Allocation | Average Monthly Limit | Daily Maximum Limit |
|----------------------|----------|----------------------|-----------------------|---------------------|
| BOD5 | MG/L | | 16 | 24 |
| TSS | MG/L | | 16 | 24 |
| Dissolved Oxygen | N/A | N/A | N/A | N/A |
| Ammonia | TBD | TBD | TBD | TBD |
| Bacteria (E. Coli) | #/100 ML | N/A | N/A | 206 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

These proposed limits must not violate water quality standards, be protective of beneficial uses and achieve the highest statutory and regulatory requirements.

Attach the Antidegradation Review report and all supporting documentation.

CONSULTANT: I have prepared or reviewed this form and all attached reports and documentation. The conclusion proposed is consistent with the Antidegradation Implementation Procedure and current state and federal regulation.

SIGNATURE  DATE 6/10/10

NAME AND OFFICIAL TITLES
 T.J. WHATLEY, PE - PROJECT MANAGER

COMPANY NAME
 SCOTT CONSULTING ENGINEERS, PC

ADDRESS 550 ST. LOUIS STREET CITY SPRINGFIELD STATE MO ZIP CODE 65806

TELEPHONE NUMBER WITH AREA CODE (417) 866-8644 E-MAIL ADDRESS TJWHATLEY@SCOTTENG.COM

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE  DATE 6-4-10

NAME AND OFFICIAL TITLES
 RICK SEWELL MAYOR

ADDRESS PO BOX 127 CITY GOLDEN CITY STATE MO ZIP CODE 64748

TELEPHONE NUMBER WITH AREA CODE (417) 537-4351 E-MAIL ADDRESS N/A

CONTINUING AUTHORITY: Continuing Authority is the permanent organization that will be responsible for the operation, maintenance and modernization of the facility. The regulatory requirement regarding continuing authority is found in 10 CSR 20-6.010(3) available at www.sos.mo.gov/adrules/csr/current/10csr/10c20-6a.pdf.

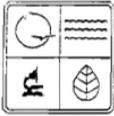
I have read and reviewed the prepared documents and agree with this submittal.

SIGNATURE  DATE 6-4-10

NAME AND OFFICIAL TITLES
 RICK SEWELL MAYOR

ADDRESS PO BOX 127 CITY GOLDEN CITY STATE MO ZIP CODE 64748

TELEPHONE NUMBER WITH AREA CODE (417) 537-4351 E-MAIL ADDRESS N/A



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDegradation REVIEW SUMMARY
ATTACHMENT D: TIER 1 REVIEW

1. FACILITY

| | | | |
|---|---------------------|---|-------------------|
| NAME GOLDEN CITY WASTEWATER TREATMENT FACILITY | | TELEPHONE NUMBER WITH AREA CODE (417) 537-4351 | |
| ADDRESS (PHYSICAL) 302 VINE STREET | CITY GOLDEN CITY | STATE MO | ZIP CODE 64748 |

2. RECEIVING WATER BODY SEGMENT #1

| |
|--|
| NAME UNNAMED TRIBUTARY TO THE NORTH FORK SPRING RIVER |
|--|

3. WATER BODY SEGMENT #2 (IF APPLICABLE)

| NAME N/A | | | | |
|--|---------------------------------------|--------------------------------------|---|---|
| Tier 1 Pollutant of Concern | Concentration Units (mg/L or µg/L) | 95 Percent of Water Quality Standard | 90 th Percentile of Water Body Segment #1 Sampling Results | 90 th Percentile of Water Body Segment #1 Sampling Results |
| BACTERIA - 2008 303(D) LISTING | N/A | N/A | N/A | N/A |
| TSS - TMDL FOR NORTH FORK SPRING RIVER | N/A | N/A | N/A | N/A |
| BOD | N/A | N/A | N/A | N/A |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

4. IDENTIFYING NON-DISCHARGING ALTERNATIVES

Supply a summary of non-discharging alternatives considered as stated in the Antidegradation Implementation Procedure Section I.B.1 and in accordance with 10 CSR 20-6.010(4)(D)1. Attach all supportive documentation in the Antidegradation Review report.

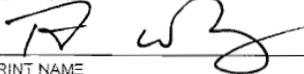
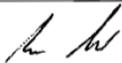
Non-degrading alternatives:

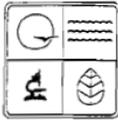
DUE TO THE CURRENT LAND OWNED BY GOLDEN CITY, AND THE ECONOMIC CHALLENGES WITH ACQUIRING SUFFICIENT LAND NEEDED FOR LAND APPLICATION OF THE EFFLUENT, A NON-DISCHARGING ALTERNATIVE WAS DEEMED TO NOT BE A FUNCTIONALLY AND FINANCIALLY FEASIBLE OPTION.

5. PROPOSED PROJECT SUMMARY

THE PROPOSED PROJECT WILL CONSIST OF THE INSTALLATION OF A NEW MECHANICAL WASTEWATER TREATMENT PLANT TO PROVIDE BIOLOGICAL TREATMENT, CLARIFICATION, AND DISINFECTION OF THE CITY'S DOMESTIC WASTEWATER. UV DISINFECTION WILL BE IMPLEMENTED FOR BACTERIA TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING STREAM.

Attach the Antidegradation Review report and all supporting documentation.

| | |
|--|--|
| CONSULTANT: I have prepared or reviewed this from and all attached reports and documentation. The conclusion proposed in consistent with the Antidegradation Implementation Procedure and current state and federal regulations. | |
| SIGNATURE  | DATE 6/10/10 |
| PRINT NAME T.J. WHATLEY - SCOTT CONSULTING ENGINEERS | |
| TELEPHONE NUMBER WITH AREA CODE (417) 866-8644 | E-MAIL ADDRESS TJWHATLEY@SCOTTENG.COM |
| OWNER: I have read and reviewed the prepared documents and agree with this submittal. | |
| SIGNATURE  RICK SEWELL MAYOR | DATE 6-4-10 |
| CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal. | |
| SIGNATURE  RICK SEWELL MAYOR | DATE 6-4-10 |



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
ANTIDegradation REVIEW SUMMARY
ATTACHMENT B: TIER 2 – MINIMAL DEGRADATION

1. FACILITY

| | | | |
|---|---------------------|--|-------------------|
| NAME GOLDEN CITY WASTEWATER TREATMENT FACILITY | | TELEPHONE WITH AREA CODE (417) 537-4351 | |
| ADDRESS (PHYSICAL) 302 VINE STREET | CITY GOLDEN CITY | STATE MO | ZIP CODE 64748 |

2. RECEIVING WATER BODY SEGMENT #1

| |
|--|
| NAME UNNAMED TRIBUTARY TO THE NORTH FORK SPRING RIVER |
|--|

3. WATER BODY SEGMENT #2 (IF APPLICABLE)

| |
|-------------|
| NAME N/A |
|-------------|

4. ASSIMILATIVE CAPACITY TABLE

Determining the facility assimilative capacity, or FAC, and the segment assimilative capacity, or SAC for each pollutant of concern is explained in detail in the Antidegradation Implementation Procedure Section II.A.3. and Appendix 3. POCs to be considered include those pollutants reasonably expected to be present in the discharge per the Antidegradation Implementation Procedure Section II.A. Provide all calculations in the Antidegradation Review report.

| Pollutant of Concern | Facility Assimilative Capacity | New Load | Percent of Facility Assimilative Capacity |
|--|--------------------------------|-----------|---|
| | (lbs/day) | (lbs/day) | (%) |
| BACTERIA - 2008 303(D) LISTING | N/A | N/A | N/A |
| TSS - TMDL FOR NORTH FORK SPRING RIVER | 42 | 42 | 0 |
| BOD | 42 | 42 | 0 |
| | | | |
| | | | |
| | | | |

| Pollutant of Concern | Water Body Segment #1 SAC | Cumulative Net Increase in Load | Cumulative % of Water Body Segment #1 SAC | Water Body Segment #2 SAC | Cumulative Net Increase in Load | Cumulative % of Water Body Segment #2 SAC |
|----------------------|---------------------------|---------------------------------|---|---------------------------|---------------------------------|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Assimilative Capacity Summary
 THE LOADING OF THE RECEIVING STREAM FOR TSS FROM THE CURRENT WWTP WILL REMAIN THE SAME FOR THE NEW WWTP IMPROVEMENTS. PERMIT LIMITS FOR BACTERIA ARE CURRENTLY NOT ESTABLISHED; HOWEVER, THE NEW WWTP IMPROVEMENTS SHALL INCLUDE DISINFECTION FOR TREATMENT OF BACTERIA CONCENTRATIONS.

Is degradation considered minimal for all Pollutants of Concern? Yes No

Degradation is considered minimal if the new or proposed loading is less than 10 percent of the FAC and the cumulative degradation is less than 20 percent of the SAC according to the Antidegradation Implementation Procedure Section II.A.3. If yes, an alternatives analysis and a social and economic importance analysis are not required.

Comments/Discussion
 SEE ANTIDegradation REPORT
 MINIMAL DEGRADATION CALCULATIONS
 THE CALCULATIONS WITHIN THE ANTIDegradation REPORT ILLUSTRATE NO INCREASE IN TSS LOADING.

MO 780-2022 (01/09)

1

5. OIL AND GREASE

Is this a publicly owned treatment works, or POTW, restaurant, school or other domestic wastewater treatment facility with oil and grease as a Pollutant of Concern? Yes No

In accordance with 10 CSR 20-7.031(3)(B), waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses. In accordance with 10 CSR 20-7.031 Table A, oil and grease has a chronic toxicity of 10 mg/L for protection of aquatic life. This facility will meet the effluent limits (MDL and AML of 15 mg/L and 10 mg/L, respectively).

6. DECHLORINATION

If Chlorination and Dechlorination is the existing or proposed method of disinfection treatment, will the effluent discharged be equal to or less than the Water Quality Standards for Total Residual Chlorine stated in Table A of 10 CSR 20-7.031?

Yes No

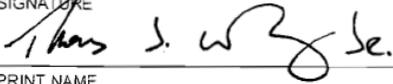
Based on the disinfection treatment system being designed for total removal of Total Residual Chlorine, minimal degradation for Total Residual Chlorine is assumed and the facility will be required to meet the water quality based effluent limits. These compliance limits for Total Residual Chlorine are much less than the method detection limit of 0.13 mg/L.

7. PROPOSED PROJECT SUMMARY

THE PROPOSED PROJECT WILL CONSIST OF THE INSTALLATION OF A NEW MECHANICAL WASTEWATER TREATMENT PLANT TO PROVIDE BIOLOGICAL TREATMENT, CLARIFICATION, AND DISINFECTION OF THE CITY'S DOMESTIC WASTEWATER. UV DISINFECTION WILL BE IMPLEMENTED FOR BACTERIA TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING STREAM.

Attach the Antidegradation Review report and all supporting documentation.

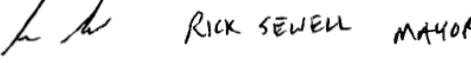
CONSULTANT: I have prepared or reviewed this from and all attached reports and documentation. The conclusion proposed in consistent with the AIP and current state and federal regulations.

| | |
|---|--|
| SIGNATURE  | DATE 6/10/10 |
| PRINT NAME THOMAS J. WHATLEY, JR. - SCOTT CONSULTING ENGINEERS | |
| TELEPHONE NUMBER WITH AREA CODE (417) 866-8644 | E-MAIL ADDRESS TJWHATLEY@SCOTTENG.COM |

OWNER: I have read and reviewed the prepared documents and agree with this submittal.

| | |
|--|----------------|
| SIGNATURE  | DATE 6-4-10 |
|--|----------------|

CONTINUING AUTHORITY: I have read and reviewed the prepared documents and agree with this submittal.

| | |
|--|----------------|
| SIGNATURE  | DATE 6-4-10 |
|--|----------------|

MO 780-2022 (01/09)

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APPENDIX – AFFORDABILITY:

Missouri Department of Natural Resources
Water Protection Program
Affordability Determination and Finding
(In accordance with RSMo 644.145)

**Golden City Wastewater Treatment Plant,
Permit Modification,
City of Golden City
#MO-0031658**

Section 644.145 RSMo requires 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.”

Description:

The Golden City Wastewater Treatment Plant is located at 302 Vine Street, Golden City, Missouri. The facility has a trickling filter with primary and secondary clarification.

Receiving Stream: Unnamed tributary to North Fork Spring River (U)
First Classified Stream and ID: North Fork Spring River (C) (3188)
USGS Basin & Sub-watershed No.: (11070207-0202)

Residential Connections: 401
Commercial Connections: 44
Total Connections: 445

New Permit Requirements or Requirements Now Being Enforced:

The City is expanding the facility’s design flow to address current and future needs. The City is also addressing storm water I&I issues by expanding its storm water storage capacity by using the volume of the existing trickling filter and clarifiers. The City is upgrading facility to an oxidation ditch to meet effluent limitations for Ammonia as N, E. coli, pH, and Oil & Grease, and conduct quarterly influent monitoring for Biochemical Oxygen Demand and Total Suspended Solids. Lower limitations for Biochemical Oxygen Demand, TSS, and ammonia will be new requirements in this permit.

Anticipated Costs Associated with Complying with Requirements:

Due to an Abatement Order upon Consent (AOC) and a recent 2012 permit renewal, the facility will be required to upgrade to meet effluent limitations and address current and future needs of the City. The renewal of the permit discussed the available options to the facility.

The estimated construction costs to comply with the requirements are \$3,130,500. The estimated costs are based on the construction of a 310,000 gallon per day oxidation ditch, UV disinfection, clarifier and aerobic digester. This construction estimate based on a “Concept Estimate” submitted with the construction permit application dated 9/17/12. Total project estimate is based upon but is not limited to: 1) increase to 500 users over the next 10 years 2) construction cost of new facility, and 3) administration and technical costs. The

facility is planning on conducting the upgrade to the facility with a total project cost of \$3,880,760 with approximately \$3,901,000 in grants and loans.

(1) Community’s financial capability and ability to raise or secure necessary funding:

According to the permit renewal, the City of Golden City appears to have the ability to raise or secure funding to pay for the required upgrades to the facility based on their affordability analysis.

In the “Concept Estimate” sheet that was provided with the construction permit application ¹ on 9/17/12, the City has *already documented and has raised sufficient funding*:

- City funds: \$1,145
- Community Development Block Grant (CDBG) funds: \$500,000
- Passed Bond Issue (Rural Development Loan): \$1,700,000
- Rural Development Loan: \$1,700,000

(2) Affordability of pollution control options for the individuals or households of the community:

| | |
|---|---------------------------|
| Current annual operating costs (exclude depreciation): ¹ | \$134,943.00 |
| Current annual user rate: ¹ | \$363 |
| Estimated capital cost of pollution control options: ¹ | \$3,880,760* |
| Annual cost of additional (<i>operating costs and debt service</i>): ¹ | \$(2037 + 8,522)=10,559** |
| Estimated resulting annual user rate: ¹ | \$654 |
| Median Household Income: ³ | \$32,594*** |
| Usage Rates as a percent of Median Household Income: (Rate/MHI) | 2.0% |

* \$3,880,760 is the total estimated cost, which includes the bond issue (loan) and grant money. The facility estimates having \$1.7 million of the total cost covered by a loan.
 ** Operating Costs will decrease with new plant due to efficiencies in operation.
 *** 2011 Census Data.

| Check Appropriate Box | Financial Impact | Residential Indiciary (Usage Rate as a percent of Median Household Income) |
|-------------------------------------|------------------|--|
| <input type="checkbox"/> | Low | Less than 1% MHI |
| <input checked="" type="checkbox"/> | Medium | Between 1% and 2% MHI |
| <input type="checkbox"/> | High | Greater than 2% MHI |

A 5,000 gallon per month residential user currently pays \$30.25 per month, based on the sewer rate information as received by the Department on August 20, 2012. With the additional costs of upgrading the facility to meet effluent limitations a rate increase would be necessary. The approximate monthly user rate would increase to \$54.50, which is about 2.0% of the MHI. This would result in a medium financial impact to the users.

(3) An evaluation of the overall costs and environmental benefits of the control technologies;

This evaluation is limited to those costs necessary to comply with the 2012 renewal and the current modified permit conditions, and therefore, to achieve the environmental benefits derived from that compliance.

The construction of a new treatment facility will allow the Golden City Wastewater Treatment Plant to meet the ammonia limits for the protection of aquatic life in the unnamed tributary to North Fork Spring River, an unclassified stream. The limit is also protective of aquatic life at the classified stream segment. The lower BOD and TSS limitation will improve dissolved oxygen concentrations and lower suspended solids concentrations in the North Fork Spring River. In conjunction with these environmental benefits, loading reductions due to the construction of the new facility for ammonia, BOD and TSS can be found in the **Appendix for Antidegradation Review Analysis.**

The construction of disinfection facilities will allow the Golden City Wastewater Treatment Plant to meet the E. coli limits for the protection of whole body contact recreation (WBC_B) in North Fork Spring River, a classified stream.

(4) 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; and

(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;

| Potentially Distressed Populations- Golden City | |
|--|----------|
| Unemployment ² | 8.4% |
| Median Household Income ³ | \$32,594 |
| Percent Population Growth/Decline (1990-2010) ⁴ | 7.7% |
| Percent of Households in Poverty ⁵ | 29.9% |

Opportunity for cost savings or cost avoidance:

None noted.

Opportunity for changes to implementation/compliance schedule, new technology, site specific criteria, use attainability analysis:

The 2012 permit renewal included a two (2) year time Schedule of Compliance for the facility to meet the final effluent limitations for *E. Coli* and Ammonia as N in the draft permit; however, the facility may achieve that compliance prior to the deadline.

This permit and the 2012 permit renewal include a schedule of compliance for hydraulic overloading. The schedule indicates that the facility on **February 1, 2014**, shall submit to the Southwest Regional Office a written plan to reduce inflow and infiltration (I&I) into the sewer collection system. Because the facility is addressing some of the I&I issues with the planned expansion and the city will need addition time to plan and pay for the added cost of the schedule of compliance, we have extended the requirements in the schedule to August 31, 2017. See the 15-day review comment letter from the City of Golden City in permit folder.

(5) An assessment of other community investments relating to environmental improvements;

The community noted that the existing clarifiers and the trickling filter will be used as high flow storm water storage capacity which will be in turn be treated during low flows.

(6) 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;

See Section (2) of this analysis for the residential indicator as outlined in the above-referenced EPA guidance.

Secondary indicators for consideration:

Socioeconomic, Debt and Financial Indicators

| Indicators | Strong (3 points) | Mid-Range (2 points) | Weak (1 point) | Score |
|--|----------------------------------|--------------------------|--------------------------------------|-------|
| Bond rating indicator | Above BBB or Baa | BBB or Baa | Below BBB or Baa | NA |
| Overall net debt as a % of full market property value | Below 2% | 2% - 5% | Above 5% | 3 |
| Unemployment Rate | >1% below Missouri average | ± 1% of Missouri average | >1% above Missouri average | 1 |
| Median household income | More than 25% above Missouri MHI | ± 25% of Missouri MHI | More than 25% below Missouri average | 1 |
| Property tax revenues as a % of full market property value | Below 2% | 2% - 4% | Above 4% | 3 |
| Property tax collection rate | Above 98% | 94% - 98% | Below 94% | 1 |

Average Score for Financial Capability Matrix: 1.8
 Residential Indicator (from Criteria #2 above): medium

Financial Capability Matrix

| Financial Capability Indicators Score from above ↓ | Residential Indicator (User rate as a % of MHI) | | |
|--|---|-----------------------------------|-------------------|
| | Low (Below 1%) | Mid-Range (Between 1.0% and 2.0%) | High (Above 2.0%) |
| Weak (below 1.5) | Medium Burden | High Burden | High Burden |
| Mid-Range (1.5 – 2.5) | Low Burden | Medium Burden | High Burden |
| Strong (above 2.5) | Low Burden | Low Burden | Medium Burden |

Estimated Financial Burden: medium

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

Golden City’s population increased 7.7% from 1990-2011. In terms of economic strength, Barton County is average when compared to other counties in the State. Although Barton County has seen an increase in median house hold income from 1990-2011, the per capita income is 17% below the State’s average. ⁶

In terms of retail Sales, Barton County loses retail customers from surrounding counties and the County residents spend less than the state average on retail goods and services. The buying power index of Barton County residents is below average compared to the rest of the regional economy. ⁷

Conclusion and Finding

This affordability analysis finds that the proposed upgrade to meet the effluent limitations proposed in the 2012 permit renewal and this permit modification are affordable. The Department identified the actions for which an affordability analysis is required under Section 644.145 RSMo. Golden City applied for a permit modification of Missouri State Operating Permit #MO-0031658 to meet both the renewal permit conditions and the requirements of the Abatement Order upon Consent (AOC). Changes to the permit include:

- 1) Construction of an oxidation ditch, final clarifiers, UV disinfection, aerobic digester, storm water excess flow storage. The proposed construction of the new facility resulted in more stringent ammonia, BOD and TSS limitations.

The Department considered all seven (7) of the criteria presented in subsection 644.145.3 when evaluating the affordability of the relevant actions. Taking into consideration these criteria, this analysis examined whether the above referenced permit modifications affects the ability of an individual customer or household to pay a utility bill without undue hardship or unreasonable sacrifice in the essential lifestyle or spending patterns of the individual or household. As a result of reviewing the above criteria, the Department hereby finds that the action described above will result in a **medium** burden with regard to the community’s overall financial capability and a **medium** financial impact for most individual customers/households.

Reference Page

- ¹ Golden City Affordability Information Form and “Concept Estimate” sheet submitted with the construction permit application 9/17/12. Telephone Conversation with City Clerk 4/24/13 regarding funding.
- ² Unemployment data from Missouri Department of Economic Development (February 2013) – <http://www.missourieconomy.org/pdfs/urel1202.pdf>
- ³ Median Household Income data from American Community Survey – Median income in the past 12 months – <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- ⁴ 2011 Census Population Data - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
2000 Census Population Data - <http://www.census.gov/popest/data/cities/totals/2009/tables/SUB-EST2009-04-29.xls>
1990 Census Population Data - <http://www.census.gov/prod/cen1990/cp1/cp-1-27.pdf>
- ⁵ Poverty data – American Community Survey - <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>
- ⁶ <http://www.missourieconomy.org/indicators/wages/pci10county.stm>
- ⁷ http://www.missourieconomy.org/pdfs/sw_via_retail_trade_analysis.pdf

**STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION**

Revised
October 1, 1980

**PART I - GENERAL CONDITIONS
SECTION A - MONITORING AND REPORTING**

1. **Representative Sampling**
 - a. Samples and measurements taken as required herein shall be representative of the nature and volume, respectively, of the monitored discharge. All samples shall be taken at the outfall(s), and unless specified, before the effluent joins or is diluted by any other body of water or substance.
 - b. Monitoring results shall be recorded and reported on forms provided by the Department, postmarked no later than the 28th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the respective Department Regional Office, the Regional Office address is indicated in the cover letter transmitting the permit.
2. **Schedule of Compliance**

No later than fourteen (14) calendar days following each date identified in the "Schedule of Compliance", the permittee shall submit to the respective Department Regional Office as required therein, either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements, or if there are no more scheduled requirements, when such noncompliance will be corrected. The Regional Office address is indicated in the cover letter transmitting the permit.
3. **Definitions**

Definitions as set forth in the Missouri Clean Water Law and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein.
4. **Test Procedures**

Test procedures for the analysis of pollutant shall be in accordance with the Missouri Clean Water Commission Effluent Regulation 10 CSR 20-7015.
5. **Recording of Results**
 - a. For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:
 - (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. 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 this permit 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 both.
 - c. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
6. **Additional Monitoring by Permittee**

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Monitoring Report Form. Such increased frequency shall also be indicated.

7. **Records Retention**

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recording for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

SECTION B - MANAGEMENT REQUIREMENTS

1. **Change in Discharge**
 - a. All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant not authorized by this permit or any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.
 - b. Any facility expansions, production increases, or process modifications which will result in new, different, or increased discharges of pollutants shall be reported by submission of a new NPDES application at least sixty (60) days before each such change, or, if they will not violate the effluent limitations specified in the permit, by notice to the Department at least thirty (30) days before such changes.
2. **Noncompliance Notification**
 - a. If, for any reason, the permittee does not comply with or will be unable to comply with any daily maximum effluent limitation specified in this permit, the permittee shall provide the Department with the following information, in writing within five (5) days of becoming aware of such conditions:
 - (i) a description of the discharge and cause of noncompliance, and
 - (ii) the period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.
 - b. Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally with 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided with five (5) days of the time the permittee becomes aware of the circumstances. The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
3. **Facilities Operation**

Permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions. Operators or supervisors of operations at publicly owned or publicly regulated wastewater treatment facilities shall be certified in accordance with 10 CSR 209.020(2) and any other applicable law or regulation. Operators of other wastewater treatment facilities, water contaminant source or point sources, shall, upon request by the Department, demonstrate that wastewater treatment equipment and facilities are effectively operated and maintained by competent personnel.
4. **Adverse Impact**

The permittee shall take all necessary steps to minimize any adverse impact to waters of the state resulting from noncompliance with any effluent limitations specified in this permit or set forth in the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

- a. Any bypass or shut down of a wastewater treatment facility and tributary sewer system or any part of such a facility and sewer system that results in a violation of permit limits or conditions is prohibited except:
 - (i) where unavoidable to prevent loss of life, personal injury, or severe property damages; and
 - (ii) where unavoidable excessive storm drainage or runoff would catastrophically damage any facilities or processes necessary for compliance with the effluent limitations and conditions of this permit;
 - (iii) where maintenance is necessary to ensure efficient operation and alternative measures have been taken to maintain effluent quality during the period of maintenance.
 - b. The permittee shall notify the Department in writing of all bypasses or shut down that result in a violation of permit limits or conditions. This section does not excuse any person from liability, unless such relief is otherwise provided by the statute.
6. **Removed Substances**
Solids, sludges, filter backwash, or any other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutants from entering waters of the state unless permitted by the Law, and a permanent record of the date and time, volume and methods of removal and disposal of such substances shall be maintained by the permittee.
 7. **Power Failures**
In order to maintain compliance with the effluent limitations and other provisions of this permit, the permittee shall either:
 - a. in accordance with the "Schedule of Compliance", provide an alternative power source sufficient to operate the wastewater control facilities; or,
 - b. if such alternative power source is not in existence, and no date for its implementation appears in the Compliance Schedule, halt or otherwise control production and all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.
 8. **Right of Entry**
For the purpose of inspecting, monitoring, or sampling the point source, water contaminant source, or wastewater treatment facility for compliance with the Clean Water Law and these regulations, authorized representatives of the Department, shall be allowed by the permittee, upon presentation of credentials and at reasonable times;
 - a. to enter upon permittee's premises in which a point source, water contaminant source, or wastewater treatment facility is located or in which any records are required to be kept under terms and conditions of the permit;
 - b. to have access to, or copy, any records required to be kept under terms and conditions of the permit;
 - c. to inspect any monitoring equipment or method required in the permit;
 - d. to inspect any collection, treatment, or discharge facility covered under the permit; and
 - e. to sample any wastewater at any point in the collection system or treatment process.
 9. **Permits Transferable**
 - a. Subject to Section (3) of 10 CSR 20-6.010 an operating permit may be transferred upon submission to the Department of an application to transfer signed by a new owner. Until such time as the permit is officially transferred, the original permittee remains responsible for complying with the terms and conditions of the existing permit.
 - b. The Department, within thirty (30) days of receipt of the application shall notify the new permittee of its intent to revoke and reissue or transfer the permit.
 10. **Availability of Reports**
Except for data determined to be confidential under Section 308 of the Act, and the Law and Missouri Clean Water Commission Regulation for Public Participation, Hearings and Notice to Governmental Agencies 10 CSR 20-6.020, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by statute, effluent data shall not be considered confidential. Knowingly making any false statement on any such report shall be subject to the imposition of criminal penalties as provided in Section 204.076 of the Law.
 - a. Subject to compliance with statutory requirements of the Law and Regulations and applicable Court Order, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:
 - (i) violation 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 and 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.
12. **Permit Modification - Less Stringent Requirements**
If any permit provisions are based on legal requirements which are lessened or removed, and should no other basis exist for such permit provisions, the permit shall be modified after notice and opportunity for a hearing.
 13. **Civil and Criminal Liability**
Except as authorized by statute and provided in permit conditions on "Bypassing" (Standard Condition B-5) and "Power Failures" (Standard Condition B-7) nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.
 14. **Oil and Hazardous Substance Liability**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act, and the Law and Regulations. Oil and hazardous materials discharges must be reported in compliance with the requirements of the Federal Clean Water Act.
 15. **State Laws**
Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state statute or regulations.
 16. **Property Rights**
The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of or violation of federal, state or local laws or regulations.
 17. **Duty to Reapply**
If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit 180 days prior to expiration of this permit.
 18. **Toxic Pollutants**
If a toxic effluent standard, prohibition, or schedule of compliance is established, under Section 307(a) of the Federal Clean Water Act for a toxic pollutant in the discharge of permittee's facility and such standard is more stringent than the limitations in the permit, then the more stringent standard, prohibition, or schedule shall be incorporated into the permit as one of its conditions, upon notice to the permittee.
 19. **Signatory Requirement**
All reports, or information submitted to the Director shall be signed (see 40 CFR-122.6).
 20. **Rights Not Affected**
Nothing in this permit shall affect the permittee's right to appeal or seek a variance from applicable laws or regulations as allowed by law.
 21. **Severability**
The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
Revised
October 1, 1980**

**PART II - SPECIAL CONDITIONS - PUBLICLY OWNED
TREATMENT WORKS
SECTION A - MAJOR CONTRIBUTING INDUSTRY**

1. Definitions

Definitions as set forth in the Missouri Clean Water Laws and Missouri Clean Water Commission Definition Regulation 10 CSR 20-2.010 shall apply to terms used herein, in addition to the following:

- a. A "major contributing industry" to a publicly owned treatment facility is a wastewater source that meets any one of the following criteria:
- (1) has a flow of 50,000 gallons or more per average workday;
 - (2) has an average daily flow greater than five percent (5%) of the flow carried by the system receiving the waste;
 - (3) has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Federal Water Pollution Control Act (hereinafter the Act), or
 - (4) has significant impact, either singly or in combination with other contributing industries, on the treatment works or in the quality of its effluent.
- b. "Compatible pollutants" are biochemical oxygen demand, suspended solids, pH, and fecal coliform bacteria, plus additional pollutants, e.g., nitrogen or phosphorus, identified in the NPDES permit, if the publicly owned treatment facility was designed to treat such pollutants, approved by the Department and in fact does remove such pollutants to design specifications.
- c. An "incompatible pollutant" is any pollutant which is not a compatible pollutant as defined above.

2. Industrial Effluent Monitoring

The permittee shall establish and implement a procedure to periodically or regularly obtain monitoring data on the quality and quantity of all effluents introduced by each major contributing industry. Frequency of monitoring shall be subject to approval by the Department.

3. Industrial Users Report

Each permittee which has a major contributing industry shall also submit to the permit-issuing authority semi-annual reports summarizing all major contributing industries subject to the pretreatment requirements of the Missouri Clean Water Law and Regulations (hereinafter the Law and Regulations), or Section 307 of the Act. These reports must be filed with the Department of Natural Resources, PO Box 176, 205 Jefferson Street, Jefferson City,

Missouri 65102 by January 1 and July 1 of each year. Such a report shall include at least the following information:

- a. name and number of major contributing industries using the treatment works and the waste type, raw materials usage (lbs/day or kg/day), and average daily flow for each industry;
- b. summary of monitoring data obtained in accordance with Standard Conditions Part II, Section A.2 above, detailing the quality and quantity of all effluents introduced by each major contributing industry, and the frequency of monitoring performed;
- c. number of major contributing industries in full compliance with the requirements of the Law and Regulations and Section 307 of the Act or not subject to these requirements (e.g., discharge only compatible pollutants), and
- d. a list identifying by name those major contributing industries presently in violation of the requirements of the Law and Regulations and Section 307 of the Act (e.g., discharges pollutant which interferes with, passes through or is incompatible with the municipal treatment works).

4. Report on Pollutant Introduction

The permittee shall give notice to the department of any new introduction of pollutants or any substantial change in the character or volume of pollutants already being introduced. Such notice shall include:

- a. the origin, quality, and quantity of pollutants to be introduced into the publicly owned treatment works; and
- b. any anticipated impact on the quality and quantity of the effluent to be discharged by such treatment works;
- c. any anticipated impact on the quality of sludge produced by such treatment works causing the sludge to be hazardous under Federal and State Law.

5. Industrial Users Compliance Schedules

The permittee shall identify any introduction of pollutants into the facility subject to pretreatment standards under Section 307(b) of the Federal Clean Water Act. In addition, the permittee shall require any industrial user of such treatment works to comply with the requirements of Section 204(b), 307, and 308 of the Federal Clean Water Act. As a means of compliance from each industrial user, subject to the requirements of Section 307 of the Federal Clean Water Act and shall forward to the Department a copy of periodic notice, over intervals not to exceed nine (9) months, of progress towards full compliance with Section 307 requirements.

**STANDARD CONDITIONS FOR NPDES PERMITS
ISSUED BY
THE MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION
AUGUST 15, 1994**

PART III – SLUDGE & BIOSOLIDS FROM DOMESTIC WASTEWATER TREATMENT FACILITIES

SECTION A – GENERAL REQUIREMENTS

1. This permit pertains to sludge requirements under the Missouri Clean Water Law and regulation and incorporates applicable federal sludge disposal requirements under 40 CFR 503. The Environmental Protection Agency (EPA) has principal authority for permitting and enforcement of the federal sludge regulations under 40 CFS 503 until such time as Missouri is delegated the new EPA sludge program. 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 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) and privately owned facilities.
3. Sludge and Biosolids Use and Disposal Practices.
 - a. Permittee is authorized to operate the sludge and biosolids treatment, storage, use, and disposal facilities listed in the facility description of this permit.
 - b. 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. Permittee is authorized to operate the storage, treatment or generating sites listed in the Facility Description section of this permit.
 - d. A separate operating permit is required for each operating location where sludge or biosolids are generated, stored, treated, or disposed, unless specifically exempted in this permit or in 10 CSR 20, Chapter 6 regulations. For land application, see section H, subsection 3 of these standard conditions.
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.
 - c. Sludge received from out-of-state generators shall receive prior approval of the permitting authority and shall be listed in the facility description or special conditions section of the permit.
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 du 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 Act or under Chapter 644 RsMo.
8. In addition to the STANDARD CONDITIONS, the department may include sludge limitations in the special conditions portion or other sections of this permit.
9. Alternate Limits in Site Specific Permit.

Where deemed appropriate, the department may require an individual site specific permit in order to authorize alternate limitations:

 - a. An individual permit must be obtained for each operating location, including application sites.
 - b. To request a site specific permit, an individual permit application, permit fees, 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 public 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 owners of 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.
11. Compliance Period
Compliance shall be achieved as expeditiously as possible but no later than the compliance dates under 40 CFR 503.2.

SECTION B – DEFINITIONS

1. Biosolids means an organic fertilizer or soil amendment produced by the treatment of domestic wastewater sludge. Untreated sludge or sludge that does not conform to the pollutants and pathogen treatment requirements in this permit is not considered biosolids.
2. 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.
3. 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.
4. 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.
5. 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 public owned treatment works (POTW) or privately owned facility.
6. Mechanical treatment plants are wastewater treatment facilities that use mechanical devices to treat wastewater, including septic tanks, extended aeration, activated sludge, contact stabilization, trickling filters, rotating biological discs, and other similar facilities. It does not include unaerated wastewater treatment lagoons and constructed wetlands for wastewater treatment.
7. 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.
8. Plant Available Nitrogen (PAN) is the nitrogen that will be available to plants during the next growing season after biosolids application.
9. Sinkhole is a depression in the land surface into which surface water flows to join an underground drainage system.
10. Site Specific Permit is a permit that has alternate limits developed to address specific site conditions for each land application site or storage site.
11. Sludge is the solid, semisolid, or liquid residue removed during the treatment of wastewater. Sludge includes septage removed from septic tanks.
12. 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.
13. Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamp, marshes, bogs, and similar areas. Wetlands do not include constructed wetlands used for wastewater treatment.

SECTION C – MECHANICAL WASTEWATER TREATMENT FACILITIES

1. Sludge shall be routinely removed from the wastewater treatment facilities and handled according to the permit facility description and sludge conditions in this permit.
2. The permittee shall operate the facility so that there is no sludge loss into the discharged effluent in excess of permit limits, no sludge bypassing, and no discharge of sludge 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. The permittee shall require documentation from the contractor of the disposal methods used and permits obtained by the contractor.
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.

SECTION E – WASTEWATER TREATMENT LAGOONS AND STORMWATER RETENTION BASINS

1. Sludge that is retained within a wastewater treatment lagoon is subject to sludge disposal requirements when the sludge is removed from the lagoon or when the lagoon ceases to receive and treat wastewater.
2. If sludge is removed during the year, an annual sludge report must be submitted.
3. Storm water retention basins or other earthen basins, which have been used as sludge storage for a mechanical treatment system is considered a sludge lagoon and must comply with Section G of this permit.

SECTION F – 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 waste, shall be disposed in accordance 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 use or disposal method, quantity, and location. Permittee shall also provide the name of the disposal facility and the applicable permit number.
4. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions sections of this permit.

SECTION G – SURFACE DISPOSAL SITES AND SLUDGE LAGOONS

1. Surface disposal sites shall comply with the requirements in 40 CFR 503 Subpart C, and solid waste disposal regulations under 10 CSR 80.
2. Additional limitations, monitoring, and reporting requirements may be addressed in the Special Conditions section of this permit.
3. Effective February 19, 1995, a sludge lagoon that has been in use for more than two years without removal of accumulated sludge, or that has not been properly closed shall comply with one of the following options:
 - a. Permittee shall obtain a site specific permit to address surface disposal requirements under 40 CFR 503, ground water quality regulations under 10 CSR 20, Chapter 7 and 8, and solid waste management regulations under 10 CSR 80;
 - b. Permittee shall clean out the sludge lagoon to remove any sludge over two years old and shall continue to remove accumulated sludge at least every two years or an alternate schedule approved under 40 CFR 503.20(b). 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
 - c. Permittee shall close the lagoon in accordance with Section 1.

SECTION H – LAND APPLICATION

1. The permittee shall not land apply sludge or biosolids unless land application is authorized in the Facility Description or special conditions section of the permit.
2. This permit replaces and terminates all previous sludge management plan approvals by the department for land application of sludge or biosolids.
3. Land application sites within a 20 mile 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 a site specific permit is required under Section A, Subsection 9.
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 sludge except when sludge meets the definition of biosolids.
 - b. This permit authorizes “Class A or B” biosolids derived from domestic wastewater sludges to be land applied onto grass land, crop land, timber land 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. Applications for approval shall be in the form of an engineering report and shall address priority pollutants and dioxin concentrations. Authorization for land applications must be provided in the special conditions section of this permit or in a separate site-specific permit.

6. Agricultural and Silvicultural Sites.

In addition to specified conditions herein, this permit is subject to the attached Water Quality Guides numbers WQ 422 through 426 published by the University of Missouri, and hereby incorporated as though fully set forth herein. The guide topics are as follows:

| | |
|--------|---|
| WQ 422 | Land Application of Septage |
| WQ 423 | Monitoring Requirements for Biosolids Land Application |
| WQ 424 | Biosolids Standards for Pathogens and Vectors |
| WQ 425 | Biosolids Standards for Metals and Other Trace Substances |
| WQ 426 | Best Management Practices for Biosolids Land Applications |

SECTION I – CLOSURE REQUIREMENTS

1. This section applies to all wastewater treatment facilities (mechanical and lagoons) and sludge or biosolids storage and treatment facilities and incineration ash ponds. It does not apply to land application sites.
2. Permittees 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, and ash. Permittee must maintain this permit until the facility is properly closed 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 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, the sludge in the lagoon qualifies for Class B with respect to pathogens (see WQ 424, Table 3), and testing for fecal coliform is not required. For other lagoons, testing for fecal coliform is required to show compliance with Class B limitations. See WQ 423 and 424.
 - c. The allowable nitrogen loading that may be left in the lagoon shall be based on the plant available nitrogen (PAN) loading. See WQ 426 for calculation procedures. For a grass cover crop, the allowable PAN is 300 pounds/acre.
4. When closing a 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 WQ 422. 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 the 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 more than 100 dry tons/acre will be left in the lagoon, test for nitrogen and determine the PAN in accordance with WQ 426. Allowable PAN loading is 300 pounds/acre.
5. Residuals left within the lagoon shall be mixed with soil on at least a 1 to 1 ratio, the lagoon berms shall be demolished, and the site shall be graded and vegetated so as to avoid ponding of storm water and provide adequate surface water drainage without creating erosion.
6. Lagoon closure activities shall obtain a storm water permit for land disturbance activities that equal or exceed five acres in accordance with 10 CSR 20-6.200.
7. If sludge exceeds agricultural loading rates under Section H or I, a landfill permit or solid waste disposal permit shall be obtained to authorize 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 J – 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.
2. Testing for land application is listed under Section H, Subsection 6 of these standard conditions (see WQ 423). Once per year is the minimum test frequency. Additional testing shall be performed for each 100 dry tons of sludge generated or stored during the year.
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. Monitoring requirements shall be performed in accordance with, “POTW Sludge Sampling and Analysis Guidance Document”, United States Environmental Protection Agency, August 1989, and subsequent revisions.

SECTION K – RECORD KEEPING AND REPORTING REQUIREMENTS

1. The permittee shall maintain records on file at the facility for at least five years for the items listed in 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. Report 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)

EPA Region VII
Water Compliance Branch (WACM)
Sludge Coordinator
901 N 5th Street
Kansas City, KS 66101

5. Annual Report Contents. The annual report shall include the following:
 - a. Sludge/biosolids testing performed. Include a copy or summary of all test results, even if not required by this 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 end of 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.
 - (1) This must include the name, address and permit number for the hauler and the sludge facility. If hauled to a municipal wastewater treatment facility, sanitary landfill, or other approved treatment facility, give the name and permit number of that facility.
 - (2) 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 or billing receipts 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 disposal or biosolids use permit.
 - g. Land Application Sites.
 - (1) 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 legal description for nearest ¼, ¼, Section, Township, Range, and County, or as latitude and longitude.
 - (2) If biosolids application exceeds 2 dry tons/acre/year, report biosolids nitrogen results. Plant Available Nitrogen (PAN) in pounds/acre, crop nitrogen requirement, available nitrogen in the soil prior to biosolids application, and PAN calculations for each site.
 - (3) If the “Low Metals” criteria is exceeded, report the annual and cumulative pollutant loading rates in pounds per acre for each applicable pollutant, and report the percent of cumulative loading which has been reached at each site.
 - (4) Report the method used for compliance with pathogen and vector attraction requirements.
 - (5) Report soil test results for pH, CEC, and phosphorus. If none was tested during the year, report the last date when tested and results.

RECEIVED

JUN 23 2015

AP21444

WATER PROTECTION PROGRAM



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
FORM B2 – APPLICATION FOR AN OPERATING PERMIT FOR FACILITIES THAT RECEIVE PRIMARILY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS PER DAY

FOR AGENCY USE ONLY

| | |
|---------------------------------|----------------------------------|
| CHECK NUMBER 7417 | |
| DATE RECEIVED 6/23/15 | FEE SUBMITTED \$200.00 |

0088B

PART A – BASIC APPLICATION INFORMATION

1. THIS APPLICATION IS FOR:

- An operating permit for a new or unpermitted facility. Construction Permit # _____
(Please include completed Antidegradation Review or request to conduct an Antidegradation Review, see instructions)
- An operating permit renewal: Permit #MO- _____ Expiration Date _____
- An operating permit modification: Permit #MO- 0031658 Reason: New WWTP

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

2. FACILITY

| | | | |
|--|---------------------|---|--------------|
| NAME Golden City WWTP | | TELEPHONE NUMBER WITH AREA CODE (417) 537-8593 | |
| ADDRESS (PHYSICAL) 302 Vine Street | CITY Golden City | STATE MO | ZIP 64748 |
| 2.1 LEGAL DESCRIPTION (Facility Site): $\frac{1}{4}$, nw $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 26, T 31, R 29W | | COUNTY Barton | |
| 2.2 UTM Coordinates Easting (X): _____ Northing (Y): _____ For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83) | | | |
| 2.3 Name of receiving stream: Unnamed tributary to North Fork Spring River | | | |
| 2.4 Number of Outfalls: 1 wastewater outfalls, 1 stormwater outfalls, 0 instream monitoring sites | | | |

3. OWNER

| | | | |
|--|---------------------|------------------------------------|---|
| NAME Golden City, Missouri | | E-MAIL ADDRESS cclerk@mchsi.com | TELEPHONE NUMBER WITH AREA CODE (417) 537-4351 |
| ADDRESS 511 Main Street, P.O. Box 127 | CITY Golden City | STATE MO | ZIP 64748 |
| 3.1 Request review of draft permit prior to Public Notice? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | |
| 3.2 Are you a Publically Owned Treatment Works (POTW)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | | | |
| 3.3 Are you a Privately Owned Treatment Facility? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | |
| 3.4 Are you a Privately Owned Treatment Facility regulated by the Public Service Commission (PSC)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | |

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

| | | | |
|-----------------------|------|----------------|--------------------------|
| NAME Same as Owner | | E-MAIL ADDRESS | TELEPHONE WITH AREA CODE |
| ADDRESS | CITY | STATE | ZIP |

If the Continuing Authority is different than the Owner, please include a copy of the contract agreement between the two parties and a description of the responsibilities of both parties within the agreement.

5. OPERATOR

| | | |
|------------------------------------|---|--|
| NAME Greg Lowe | TITLE Wastewater Manager | CERTIFICATE NUMBER (IF APPLICABLE) 4901 |
| E-MAIL ADDRESS cclerk@mchsi.com | TELEPHONE NUMBER WITH AREA CODE (417) 573-8593 | |

6. FACILITY CONTACT

| | | | |
|--|---------------------|---|-------------------|
| NAME Walt Nims | | TITLE Mayor | |
| E-MAIL ADDRESS cclerk@mchsi.com | | TELEPHONE NUMBER WITH AREA CODE (417) 537-4351 | |
| ADDRESS 511 Main Street, P.O. Box 127 | CITY Golden City | STATE MO | ZIP CODE 64748 |

SW Barton

JUN 23 2015



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH

WATER PROTECTION PROGRAM

**FORM B2 – APPLICATION FOR OPERATING PERMIT FOR FACILITIES THAT RECEIVE
PRIMARY DOMESTIC WASTE AND HAVE A DESIGN FLOW MORE THAN 100,000 GALLONS
PER DAY**

| | |
|-----------------------------------|------------------|
| FACILITY NAME Golden City WWTP | |
| PERMIT NO. MO-0031658 | COUNTY Barton |

APPLICATION OVERVIEW

Form B2 has been developed in a modular format and consists of Parts A, B and C and a Supplemental Application Information (Parts D, E, F and G) packet. All applicants must complete Parts A, B and C. Some applicants must also complete parts of the Supplemental Application Information packet. The following items explain which parts of Form B2 you must complete. Submittal of an incomplete application may result in the application being returned.

BASIC APPLICATION INFORMATION

- A. Basic Application Information for all Applicants. All applicants must complete Part A.
- B. Additional Application Information for all Applicants. All applicants must complete Part B.
- C. Certification. All applicants must complete Part C.

SUPPLEMENTAL APPLICATION INFORMATION

- D. Expanded Effluent Testing Data. A treatment works that discharges effluent to surface water of the United States and meets one or more of the following criteria must complete *Part D - Expanded Effluent Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- E. Toxicity Testing Data. A treatment works that meets one or more of the following criteria must complete *Part E - Toxicity Testing Data*:
 - 1. Has a design flow rate greater than or equal to 1 million gallons per day.
 - 2. Is required to have or currently has a pretreatment program.
 - 3. Is otherwise required by the permitting authority to provide the information.
- F. Industrial User Discharges and Resource Conservation and Recovery Act / Comprehensive Environmental Response, Compensation and Liability Act Wastes. A treatment works that accepts process wastewater from any significant industrial users, also known as SIUs, or receives a Resource Conservation and Recovery Act or CERCLA wastes must complete *Part F - Industrial User Discharges and Resource Conservation and Recovery Act /CERCLA Wastes*.
SIUs are defined as:
 - 1. All Categorical Industrial Users, or CIUs, subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations 403.6 and 40 Code of Federal Regulations 403.6 and 40 CFR Chapter 1, Subchapter N.
 - 2. Any other industrial user that meets one or more of the following:
 - i. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions).
 - ii. Contributes a process waste stream that makes up five percent or more of the average dry weather hydraulic or organic capacity of the treatment plant.
 - iii. Is designated as an SIU by the control authority.
 - iv. Is otherwise required by the permitting authority to provide the information.
- G. Combined Sewer Systems. A treatment works that has a combined sewer system must complete *Part G - Combined Sewer Systems*.

ALL APPLICANTS MUST COMPLETE PARTS A, B and C

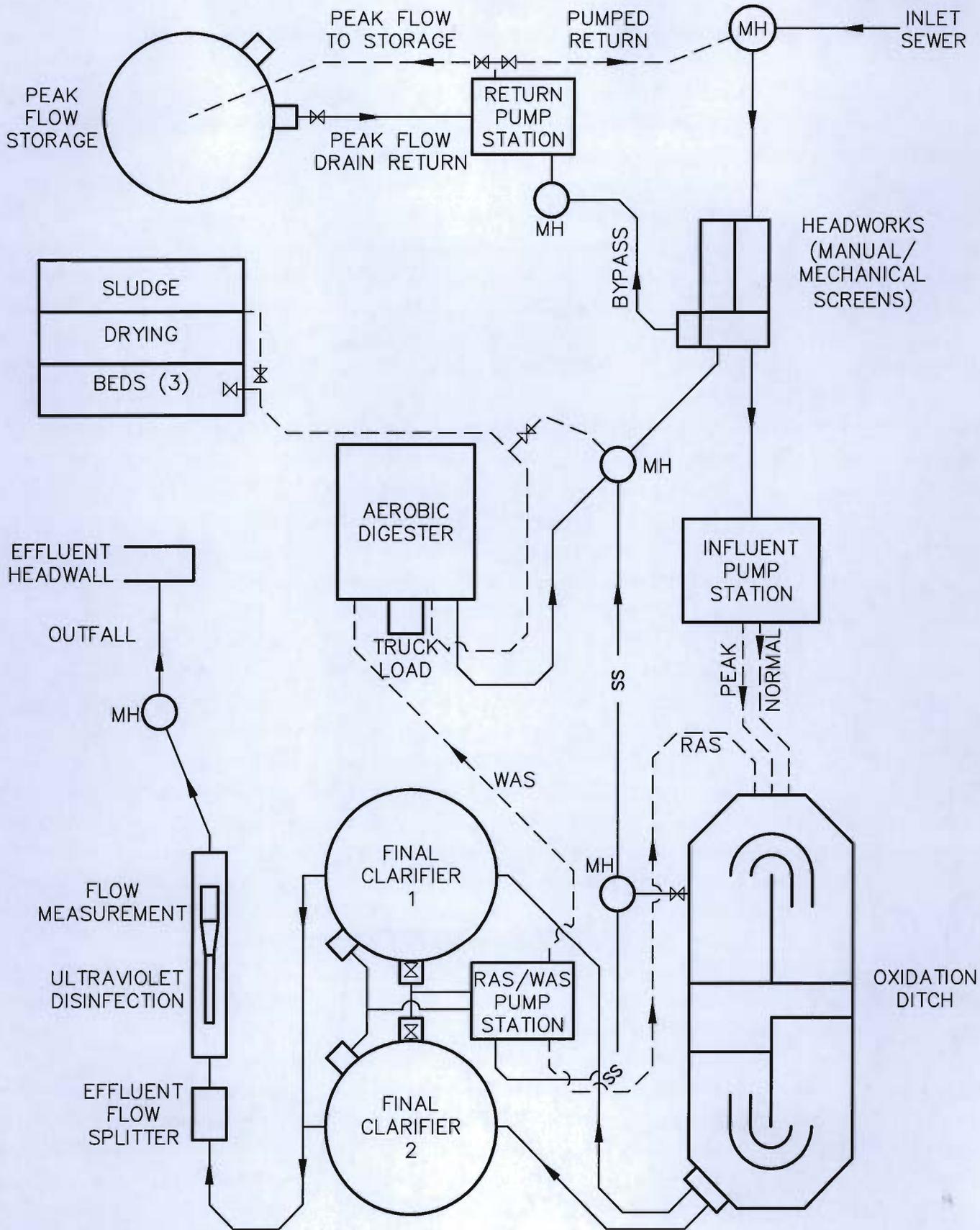
| | | |
|-----------------------------------|---------------------------|--------------------|
| FACILITY NAME Golden City WWTP | PERMIT NO. MO- 0031658 | OUTFALL NO. 001 |
|-----------------------------------|---------------------------|--------------------|

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION

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

See attached.



FLOW DIAGRAM - WASTEWATER TREATMENT PLANT

DWG: F:\PROJECTS\012-0919_PBIN\Design\Voids\PROCESS FLOW 7-1.dwg
 DATE: Jun 17, 2015 9:50am
 USER: smarrs
 XREFS:

| | |
|-------------|-----------|
| PROJECT NO: | 2012-0919 |
| DRAWN BY: | HSM |
| DATE: | 06/17/15 |

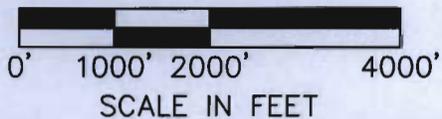
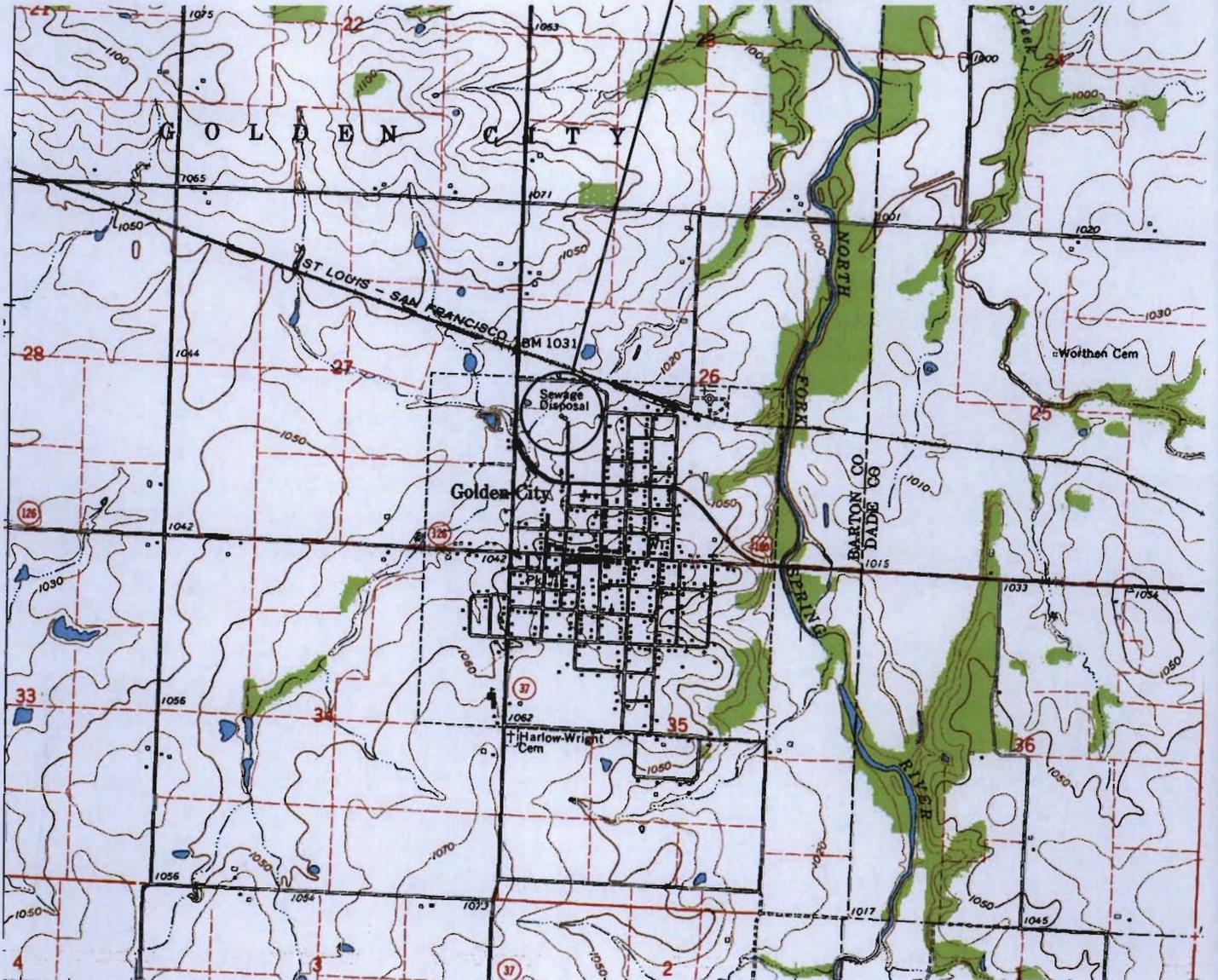
**GOLDEN CITY,
MISSOURI**

MOLSSON
 ASSOCIATES

550 St. Louis Street
 Springfield, MO 65806
 TEL 417.890.8802
 FAX 401.890.8805

EXHIBIT
7-1

TREATMENT PLANT SITE



EXISTING WASTEWATER TREATMENT PLANT SITE

USER: smarrs

DWG: F:\PROJECTS\012-0919_PBIN\Design\Voids\PROCESS 7-2.dwg

XREFS:

DATE: Jun 17, 2015 9:46am

PROJECT NO: 2012-0919
 DRAWN BY: HSM
 DATE: 06/17/15

GOLDEN CITY,
 MISSOURI

MOLSSON
 ASSOCIATES

550 St. Louis Street
 Springfield, MO 65806
 TEL 417.890.8802
 FAX 401.890.8805

EXHIBIT

7-2

| | | |
|-----------------------------------|---------------------------|--------------------|
| FACILITY NAME Golden City WWTP | PERMIT NO. MO- 0031658 | OUTFALL NO. 001 |
|-----------------------------------|---------------------------|--------------------|

PART A – BASIC APPLICATION INFORMATION

7. FACILITY INFORMATION (continued)

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.

- The area surrounding the treatment plant, including all unit processes.
- The location of the downstream landowner(s). (See Item 10.)
- 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.
- The actual point of discharge.
- Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.
- Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.
- If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (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 Facility SIC Code: 4952 | Discharge SIC Code: 4952 |
|---------------------------------------|-----------------------------|

| | |
|--|-------------------|
| 7.4 Number of people presently connected or population equivalent (P.E.): 927 | Design P.E. 1,246 |
|--|-------------------|

7.5 Connections to the facility:

Number of units presently connected:

Homes 315 Trailers _____ Apartments _____ Other (including industrial) 50

Number of Commercial Establishments: 10

| | |
|---------------------------------------|----------------------------|
| 7.6 Design Flow 310,000 GPD | Actual Flow 152,000 GPD |
|---------------------------------------|----------------------------|

7.7 Will discharge be continuous through the year? Yes No

Discharge will occur during the following months: How many days of the week will discharge occur?

Jan. - Dec., 7 days/week

7.8 Is industrial waste discharged to the facility? Yes No

If yes, please describe the number and types of industries that discharge to your facility.

Refer to the APPLICATION OVERVIEW to determine whether additional information is needed for Part F.

7.9 Does the facility accept or process leachate from landfills? Yes No

7.10 Is wastewater land applied? Yes No

If yes, is Form I attached? Yes No

7.11 Does the facility discharge to a losing stream or sinkhole? Yes No

7.12 Has a wasteload allocation study been completed for this facility? Yes No

8. LABORATORY CONTROL INFORMATION

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

| | | | | |
|--|--|---------------------------|------------------------------------|--|
| FACILITY NAME Golden City WWTP | | PERMIT NO. MO- 0031658 | OUTFALL NO. 001 | |
| 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> | | | | |
| 9.2 Sludge production (Including sludge received from others): Design Dry Tons/Year 70 Actual Dry Tons/Year 34 | | | | |
| 9.3 Sludge storage provided: <u>9000</u> Cubic feet; <u>30</u> Days of storage; <u>2</u> Average percent solids of sludge; <input type="checkbox"/> No sludge storage is provided. <input type="checkbox"/> Sludge is stored in lagoon. | | | | |
| 9.4 Type of storage: <input checked="" type="checkbox"/> Holding Tank <input type="checkbox"/> Building <input type="checkbox"/> Basin <input type="checkbox"/> Lagoon <input type="checkbox"/> Concrete Pad <input type="checkbox"/> Other (Please describe) _____ | | | | |
| 9.5 Sludge Treatment: <input type="checkbox"/> Anaerobic Digester <input type="checkbox"/> Storage Tank <input type="checkbox"/> Lime Stabilization <input type="checkbox"/> Lagoon <input checked="" type="checkbox"/> Aerobic Digester <input type="checkbox"/> Air or Heat Drying <input type="checkbox"/> Composting <input type="checkbox"/> Other (Attach Description) | | | | |
| 9.6 Sludge use or disposal: <input type="checkbox"/> Land Application <input type="checkbox"/> Contract Hauler <input type="checkbox"/> Hauled to Another Treatment Facility <input checked="" type="checkbox"/> Solid Waste Landfill <input type="checkbox"/> Surface Disposal (Sludge Disposal Lagoon, Sludge Held For More Than Two Years) <input type="checkbox"/> Incineration <input type="checkbox"/> Other (Attach Explanation Sheet) _____ | | | | |
| 9.7 Person responsible for hauling sludge to disposal facility: <input checked="" type="checkbox"/> By Applicant <input type="checkbox"/> By Others (complete below) | | | | |
| NAME City of Golden City | | | E-MAIL ADDRESS cclerk@mchsi.com | |
| ADDRESS 511 Main St. | CITY Golden City | STATE MO | ZIP CODE 64748 | |
| CONTACT PERSON Greg Lowe | TELEPHONE WITH AREA CODE (417) 537-4351 | PERMIT NO. MO-0031658 | | |
| 9.8 Sludge use or disposal facility: <input type="checkbox"/> By Applicant <input checked="" type="checkbox"/> By Others (Please complete below) | | | | |
| NAME BFI WASTE SYSTEMS OF MO | | | E-MAIL ADDRESS | |
| ADDRESS 325 NW 1ST LN | CITY LAMAR | STATE MO | ZIP CODE 64759 | |
| CONTACT PERSON DARREN BAKER 417-499-6379 | TELEPHONE WITH AREA CODE (417) 682-6379 | PERMIT NO. MO- | | |
| 9.9 Does the sludge or biosolids disposal comply with Federal Sludge Regulation 40 CFR 503? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Please explain) | | | | |
| END OF PART A | | | | |

| | | |
|-----------------------------------|------------------------------|--------------------|
| FACILITY NAME Golden City WWTP | PERMIT NO. MO- MO-0031658 | OUTFALL NO. 001 |
|-----------------------------------|------------------------------|--------------------|

PART B – ADDITIONAL APPLICATION INFORMATION

10. COLLECTION SYSTEM

10.1 Length of sanitary sewer collection system in miles
8

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

New WWTP now on-line to treat peak flows. City has plans to modify West Pump Station and adjacent piping to mitigate sources of I&I. City has been cleaning and CCTV'ing the collection system to identify deficiencies and establish a plan for corrective measures

11. BYPASSING

Does any bypassing occur anywhere in the collection system or at the treatment facility? Yes No

If yes, explain:

During peak wet weather periods, shallow manholes may surcharge.

12. 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 the 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

EMAIL ADDRESS

RESPONSIBILITIES OF CONTRACTOR

13. 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.

New activated sludge WWTP now on-line, May of 2015.

| | | |
|-----------------------------------|------------------------------|--------------------|
| FACILITY NAME Golden City WWTP | PERMIT NO. MO- MO-0031658 | OUTFALL NO. 001 |
|-----------------------------------|------------------------------|--------------------|

PART B – ADDITIONAL APPLICATION INFORMATION

14. EFFLUENT TESTING DATA

Applicants must provide effluent testing data for the following parameters. Provide the indicated effluent data for each outfall through which effluent is discharged. Do not include information of combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least **three samples** and must be no more than four and one-half years apart.

Outfall Number

| PARAMETER | MAXIMUM DAILY VALUE | | AVERAGE DAILY VALUE | | |
|--------------|---------------------|-------|---------------------|-------|-------------------|
| | Value | Units | Value | Units | Number of Samples |
| pH (Minimum) | 7.0 | S.U. | 7.49 | S.U. | 365 |
| pH (Maximum) | 8.0 | S.U. | 7.49 | S.U. | 365 |
| Flow Rate | 1.0 | MGD | 0.3 | MGD | 365 |

*For pH report a minimum and a maximum daily value

| POLLUTANT | MAXIMUM DAILY DISCHARGE | | AVERAGE DAILY DISCHARGE | | | ANALYTICAL METHOD | ML/MDL |
|-----------|-------------------------|-------|-------------------------|-------|-------------------|-------------------|--------|
| | Conc. | Units | Conc. | Units | Number of Samples | | |

Conventional and Nonconventional Compounds

| | | | | | | | | |
|--|-------------------|------|----------|------|----------|----|-------|-------|
| BIOCHEMICAL OXYGEN DEMAND (Report One) | BOD ₅ | 58.6 | mg/L | 16.2 | mg/L | 52 | 5210B | 60/40 |
| | CBOD ₅ | | mg/L | | mg/L | | | |
| E. COLI | | | #/100 mL | | #/100 mL | | | |
| TOTAL SUSPENDED SOLIDS (TSS) | 37 | | mg/L | 13.7 | mg/L | 52 | 2540D | 60/40 |
| AMMONIA (as N) | | | mg/L | | mg/L | | | |
| CHLORINE* (TOTAL RESIDUAL, TRC) | | | mg/L | | mg/L | | | |
| DISSOLVED OXYGEN | | | mg/L | | mg/L | | | |
| OIL and GREASE | | | mg/L | | mg/L | | | |
| OTHER | | | mg/L | | mg/L | | | |

*Report only if facility chlorinates

END OF PART B

| | | |
|-----------------------------------|------------------------------|--------------------|
| FACILITY NAME Golden City WWTP | PERMIT NO. MO- MO-0031658 | OUTFALL NO. 001 |
|-----------------------------------|------------------------------|--------------------|

PART C – CERTIFICATION

15. 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 Walter Nims | OFFICIAL TITLE (MUST BE AN OFFICER OF THE COMPANY OR CITY OFFICIAL) Mayor |
|-----------------------------|--|

SIGNATURE


TELEPHONE NUMBER WITH AREA CODE
(417) 537-4351

DATE SIGNED
6/14/2015

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.

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

END OF PART C
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH PARTS OF FORM B2 YOU MUST COMPLETE.

Do not complete the remainder of this application, unless at least one of the following statements applies to your facility:

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.