

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, 92<sup>nd</sup> Congress) as amended,

Permit No. MO-0089109

Owner: City of Nevada  
Address: 110 South Ash, Nevada, MO 64772

Continuing Authority: Same as above  
Address: Same as above

Facility Name: Nevada Municipal Wastewater Treatment Facility  
Facility Address: West Walnut Street, Nevada, MO 64772

Legal Description: NE ¼, SW ¼, Sec. 6, T35N, R31W, Vernon County  
UTM Coordinates: X= 376757, Y= 4189525

Receiving Stream: Little Drywood Creek (P)  
First Classified Stream and ID: Little Drywood Creek (P) (01325) 303(d) List  
USGS Basin & Sub-watershed No.: (10290104 – 060003)

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 - Certified "B" Operator Required**

Four (4) clarifiers/two (2) aeration basins/ultraviolet disinfection/aerobic digesters/sludge holding tank/sludge is land applied by permittee.

Design population equivalent is 22,500.

Design flow is 2.0 MGD.

Actual flow is 1.4 MGD.

Design sludge production is 365 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.

May 13, 2011  
Effective Date

  
Sara Parker Pauley, Director, Department of Natural Resources

May 12, 2016  
Expiration Date

  
John Madras, Director, Water Protection Program

**FACILITY DESCRIPTION (continued):**

SM 1 – Receiving stream monitoring location (upstream)

Legal Description: NW ¼, SW ¼, Sec. 1, T35N, R32W, Vernon County  
UTM Coordinates: X = 376546, Y = 4189152  
Receiving Stream: Little Drywood Creek (P)  
First Classified Stream and ID: Little Drywood Creek (P) (01325)  
USGS Basin & Sub-watershed No.: (10290104 – 060003)

SM 2 – Receiving stream monitoring location (downstream)

Legal Description: NW ¼, NW ¼, Sec. 1, T35N, R32W, Vernon County  
UTM Coordinates: X = 376707, Y = 4189928  
Receiving Stream: Little Drywood Creek (P)  
First Classified Stream and ID: Little Drywood Creek (P) (01325)  
USGS Basin & Sub-watershed No.: (10290104 – 060003)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 12																																																																														
					PERMIT NUMBER MO-0089109																																																																														
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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 4 of 12	
					PERMIT NUMBER MO-0089109	
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 six (6) months from the date of issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/day	24 hr. total
Biochemical Oxygen Demand <sub>5</sub>	mg/L	28		20	once/week	24 hr. composite**
Total Suspended Solids	mg/L	28		20	once/week	24 hr. composite**
<i>E. coli</i> (Note 1)	#/100 mL		1030	206	once/week	grab
pH – Units	SU	****		****	once/week	grab
Ammonia as N (April 1 – Sept 30) (Oct 1 – March 31)	mg/L	5.8 11.8		1.4 2.9	once/week	grab
Oil & Grease	mg/L	15		10	once/month	grab
Chloride	mg/L	*		*	once/month	grab
Total Nitrogen as N	mg/L	*		*	once/month	grab
Total Phosphorus as P	mg/L	*		*	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>December 28, 2011</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	DAILY MINIMUM	WEEKLY AVERAGE MINIMUM	MONTHLY AVERAGE MINIMUM	MONITORING REQUIREMENTS	
					MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Dissolved Oxygen	mg/L	5.5		5.5	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>December 28, 2011</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>					PAGE NUMBER 5 of 12	
					PERMIT NUMBER MO-0089109	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u> (Note 2)						
Chromium(III), Total Recoverable	µg/L	*		*	twice/year	24 hr. composite**
Chromium(VI), Dissolved	µg/L	*		*	twice/year	grab
Copper, Total Recoverable	µg/L	16		13	twice/year	24 hr. composite**
Iron, Total Recoverable	µg/L	*		*	twice/year	24 hr. composite**
Zinc, Total Recoverable	µg/L	*		*	twice/year	24 hr. composite**
Phenol	µg/L	184		71	twice/year	24 hr. composite**
MONITORING REPORTS SHALL BE SUBMITTED <u>SEMI-ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>November 28, 2011</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<u>Outfall #001</u>						
Whole Effluent Toxicity (WET) test	% Survival	See Special Conditions			once/year	24 hr. composite**
MONITORING REPORTS SHALL BE SUBMITTED <u>ANNUALLY</u> ; THE FIRST REPORT IS DUE <u>September 28, 2011</u> .						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

<b>A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS</b>				PAGE NUMBER 6 of 12		
				PERMIT NUMBER MO-0089109		
<u>Instream monitoring</u> – SM 1 – 0.25 miles upstream from Outfall #001 SM 2 – 0.25 miles downstream from Outfall #001						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>SM 1 and SM 2</u>						
Flow	MGD	*		*	once/quarter*****	grab
Temperature	°F	*		*	once/quarter*****	grab
Ammonia as N	mg/L	*		*	once/quarter*****	grab
Dissolved Oxygen	mg/L	*		*	once/quarter*****	grab
pH – Units	SU	*		*	once/quarter*****	grab
Chlorophyll a	µg/L	*		*	once/quarter*****	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>July 28, 2011</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
<b>B. STANDARD CONDITIONS</b>						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I, II, &amp; III</u> STANDARD CONDITIONS DATED <u>October 1, 1980 and August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- \* 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 6.0-9.0 pH units.
- \*\*\*\* 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.
- \*\*\*\*\* Sample once per quarter. See quarterly sampling table directly below.

Sample discharge at least once for the months of:	Report is due:
January, February, March (1st Quarter)	April 28
April, May, June (2nd Quarter)	July 28
July, August, September (3rd Quarter)	October 28
October, November, December (4th Quarter)	January 28

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

Note 2 – Sample twice per year in March and September.

<b>C. INFLUENT MONITORING REQUIREMENTS</b>		PAGE NUMBER 7 of 12	
		PERMIT NUMBER MO-0089109	
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 <sub>5</sub>	mg/L	once/month	24 hr. composite**
Total Suspended Solids	mg/L	once/month	24 hr. composite**
MONITORING REPORTS SHALL BE SUBMITTED <u>MONTHLY</u> ; THE FIRST REPORT IS DUE <u>June 28, 2011</u> .			

#### 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.
4. 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.
5. Report as no-discharge when a discharge does not occur during the report period.

D. SPECIAL CONDITIONS (continued)

6. 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.
7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 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.
8. The permittee shall develop and implement a program for maintenance and repair of the collection system. The permittee shall submit a report annually in November to the Southwest Regional Office with the Discharge and Monitoring reports which address measures taken to locate and eliminate sources of infiltration and inflow into the collection system serving the facility.
9. 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.
10. The permittee shall implement and enforce its approved pretreatment program in accordance with the requirements of 40 CFR Part 403. The approved pretreatment program is hereby incorporated by reference.

The permittee shall submit to the Department on or before March 31<sup>st</sup> of each year a report briefly describing its pretreatment activities during the previous calendar year. At a minimum, the report shall include the following:

- (a) An updated list of the Permittee's Industrial Users, including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Permittee shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The Permittee shall also list the Industrial Users that are subject only to local Requirements;
- (b) A summary of the status of Industrial User compliance over the reporting period;
- (c) A summary of compliance and enforcement activities (including inspections) conducted by the Permittee during the reporting period; and
- (d) Any other relevant information requested by the Department.

D. SPECIAL CONDITIONS (continued)

11. Whole Effluent Toxicity (WET) Test shall be conducted as follows:

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	once/year	24 hr. composite**	September

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.
  - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
  - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
  - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
  - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
  - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
  - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
  - (g) 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.
  - (h) 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 analyses performed upon any other effluent concentration.
  - (i) 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.
  - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
  - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
  - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
  - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) 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.
- (3) If the effluent fails the test, 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:
  - (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
  - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

D. SPECIAL CONDITIONS (continued)

11. Whole Effluent Toxicity (WET) Test (continued):

- (4) 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.
  - (5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall 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. 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 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.
  - (6) 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.
  - (7) 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.
- (b) PASS/FAIL procedure and effluent limitations:
- (1) To pass a multiple-dilution test:
    - (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC<sub>50</sub> concentration for the most sensitive of the test organisms; **OR**,
    - (b) For facilities with an AEC greater than 30%, the LC<sub>50</sub> concentration must be greater than 100%; **AND**,
    - (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be 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 mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the laboratory control. The appropriate statistical tests of significance 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 or other federal guidelines as appropriate or required.
- (c) 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.
  - (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) Unless otherwise specified above, multiple-dilution tests will be run with:
    - (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
    - (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
    - (c) Reconstituted water.
  - (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.

## SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures 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.

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test acceptability criterion:	90% or greater survival in controls

Test conditions for Pimephales promelas:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$ )
Test Acceptability criterion:	90% or greater survival in controls

E. RECEIVING WATER MONITORING CONDITIONS

1. In-stream samples should be taken at the locations specified on page 2 of this permit. In the event that a safe, accessible sampling point is not present at this location, a suitable location can be negotiated with the department. Samples should be taken at least four feet from the bank or from the middle of the stream (whichever is less) and 6-inches below the surface. The upstream receiving water sample should be collected at a point upstream from any influence of the effluent, where the water is visibly flowing down stream.
2. When conducting in-stream monitoring, the permittee shall record observations that include: the time of day, weather conditions, unusual stream characteristics (e.g., septic conditions, algae growth, etc.), the stream segment (e.g., riffle, pool or run) from where the sample was collected. These observations shall be submitted with the sample results.
3. Samples shall not be collected from areas with especially turbulent flow, still water or from the stream bank, unless these conditions are representative of the stream reach or no other areas are available for sample collection. Sampling should not be made when significant precipitation has occurred recently. The sampling event should be terminated and rescheduled if any of the following conditions occur:
  - If turbidity in the stream increases notably; or
  - If rainfall over the past two weeks exceeds 2.5 inches or exceeds 1 inch in the last 24 hours
4. Always use the correct sampling technique and handling procedure specified for the parameter of interest. Please refer to the latest edition of *Standard Methods for the Examination of Water and Wastewater* for further discussion of proper sampling techniques. All analyses must be conducted in accordance with an EPA-approved method. Meters shall be calibrated immediately (within 1 hour) prior to the sampling event.
5. To obtain accurate measurements, dissolved oxygen, temperature and pH analyses should be performed on-site in the receiving stream where possible. However, due to high flow conditions, access, etc., it may be necessary to collect a sample in a bucket or other container. When this is necessary, care must be taken not to aerate the sample upon collection. If for any reason samples must be collected from an alternate site from the one listed in the permit, the permittee shall report the location with the sample results.
6. Dissolved oxygen measurements are to be taken during the period from one hour prior to sunrise to one and one-half hour after sunrise.
7. Please contact the department if you need additional instructions or assistance.

**Missouri Department of Natural Resources**  
**FACT SHEET**  
**FOR THE PURPOSE OF RENEWAL**  
**OF**  
**MO-0089109**  
**NEVADA WASTEWATER TREATMENT FACILITY**

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 Major , Minor , Industrial Facility ; Variance ; Master General Permit ; General Permit Covered Facility ; and/or permit with widespread public interest .

**Part I – Facility Information**

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

**Facility Description:**

Nevada Wastewater Treatment Plant is a newly upgraded, 2.0 MGD activated sludge facility located in Nevada, Vernon County, MO. The original facility consisted of an oxidation ditch, sludge holding, and land application with a design flow of 1.75 MGD. Wastewater enters the facility through the lift station and is first subject to grit removal and step screening. Flow is then diverted to one (1) of two (2) aeration basins followed by one (1) of two (2) clarifiers. Wastewater then flows to one (1) of two (2) clarifiers. Wastewater is then subject to ultraviolet light disinfection and reaeration. Treated effluent is discharged to Little Drywood Creek via Outfall #001. Sludge is sent to one (1) of two (2) aerobic digesters. Sludge is stored in the lagoon until it is land applied by the permittee. Sludge is also occasionally treated with lime prior to land application.

Upgrade/Expansion of the facility included the following: the construction of new screening facilities, grit removal renovation, pumping modifications, new lab building, ultraviolet disinfection facilities, and a control building, as well as conversion of existing aeration basin to aerobic digesters, a new lime silo and mixing facility, miscellaneous flow control structures, yard piping, electrical with standby generator, miscellaneous site work, fencing and all the miscellaneous appurtenances thereto for a complete and functioning wastewater treatment facility. The design flow of the updated facility is to be 2.0 MGD with a peak capacity of 10 MGD.

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

- Yes; Upgrades have been completed increasing the design flow.  
 - No.

Application Date: 11/09/10  
Expiration Date: 08/05/09  
Last Inspection: 06/28/10      In Compliance ;      Non-Compliance

**OUTFALL(S) TABLE:**

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	3.1	Secondary	Domestic	0.40

Outfall #001 – Main Facility Outfall  
 Legal Description: SE ¼, NW ¼, Sec. 6, T35N, R31W  
 UTM Coordinates: X = 376757, Y = 4189525  
 Receiving Stream: Little Drywood Creek (P)  
 First Classified Stream and ID: Drywood Creek (P) (01325)  
 USGS Basin & Sub-watershed No.: (10290104 – 060003)

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

Little Drywood Creek (WBID: 1325) is a class P stream with designated uses of protection of aquatic life, livestock and wildlife watering and boating. Little Drywood Creek is included on the 2008 and proposed for inclusion on the 2010 Missouri 303(d) List of impaired waterways. The pollutant of concern is identified as low dissolved oxygen from unknown sources. TMDL development is scheduled for 2016. With TMDL development, the permittee may be subject to more stringent effluent limitations in order to restore water quality in the receiving waters upon next renewal. The facility is also located within the Marmaton River watershed, for which a TMDL was approved on 26 October 2010. The Marmaton River TMDL includes the facility in its implementation plan. As per the Marmaton River TMDL, effluent monitoring will be required for Total Nitrogen and Total Phosphorus. Additionally, instream monitoring will be required for temperature, dissolved oxygen, pH, ammonia and chlorophyll a both upstream and downstream of the facility discharge. BOD and TSS limits will also be reduced to a Daily Maximum of 28 mg/L and a Monthly Average of 20 mg/L.

The permittee reports violations of Ammonia limits in August 2006, July 2007, February 2009, June 2009 and May 2010. Additionally, the permittee reports pH limit violations in February, April and May 2009. DMR data indicate additional pH violations in September and October 2006. A record review conducted on 7/29/2010 resulted in a Letter of Warning being issued due to failure to meet effluent limits.

**Part II – Operator Certification Requirements**

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 20-9.010(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:

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

Operator’s Name: Mark Mendenhall  
 Certification Number: 6217  
 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 – Receiving Stream Information**

**APPLICABLE DESIGNATIONS OF WATERS OF THE STATE:**

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

- Missouri or Mississippi River [10 CSR 20-7.015(2)]:
- Lake or Reservoir [10 CSR 20-7.015(3)]:
- Losing [10 CSR 20-7.015(4)]:
- Metropolitan No-Discharge [10 CSR 20-7.015(5)]:
- Special Stream [10 CSR 20-7.015(6)]:
- Subsurface Water [10 CSR 20-7.015(7)]:
- All Other Waters [10 CSR 20-7.015(8)]:

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 1<sup>st</sup> 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:**

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Little Drywood Creek	P	1325	AQL, LWW, WBC(B)	10290104	Central Plains/Osage/South Grand

\* - 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 TABLE:**

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Little Drywood Creek (P)	0.1	0.1	1.0

**MIXING CONSIDERATIONS TABLE:**

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B(II)(a)]		ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B(II)(b)]	
7Q10	30Q10	1Q10	7Q10
0.025	0.25	0.0025	0.0025

**RECEIVING STREAM MONITORING REQUIREMENTS:**

In-stream monitoring is required in Little Drywood Creek as per the 26 October 2010 approved Marmaton Creek TMDL. Monitoring is required for dissolved oxygen, temperature, ammonia, pH and chlorophyll a. This monitoring is required to assess the impact of revised permit limits on water quality.

**Site 01. (Upstream)**

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Flow MGD	once/quarter	grab	Approximately 0.25 miles upstream X=376546, Y=4189152
Dissolved Oxygen (mg/L)	once/quarter	grab	
pH (SU)	once/quarter	grab	
Temperature (F)	once/quarter	grab	
Ammonia as N (mg/L)	once/quarter	grab	
Chlorophyll a (µg/L)	once/quarter	grab	

**Site 02. (Downstream)**

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Flow MGD	once/quarter	grab	Approximately 0.25 miles downstream X=376707, Y=4189928
Dissolved Oxygen (mg/L)	once/quarter	grab	
pH (SU)	once/quarter	grab	
Temperature (F)	once/quarter	grab	
Ammonia as N (mg/L)	once/quarter	grab	
Chlorophyll a (µg/L)	once/quarter	grab	

**Part IV – 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.

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

**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.

- Renewal no degradation proposed and no further review necessary. Although upgrades were completed to this facility which resulted in an increase in design flow, construction was proposed and approved prior to the adoption of the Missouri Antidegradation Implementation Procedure. Therefore, antidegradation review was not required.

**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, SLUDGE, & SEWAGE SLUDGE:**

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. 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 land applies biosolids in accordance with Standard Conditions III and a Department approved biosolids management plan.

**COMPLIANCE AND ENFORCEMENT:**

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

Not Applicable ;

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

**PRETREATMENT PROGRAM:**

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

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

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:

- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

Applicable ;

This permittee has an approved pretreatment program in accordance with the requirements of [40 CSR Part 403] and [10 CSR 20-6.100] and is expected to implement and enforce its approved 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.

Applicable ;

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

**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 (BOD<sub>5</sub>) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ [www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm](http://www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm).

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 time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)].

**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.

**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:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)} \quad (\text{EPA/505/2-90-001, Section 4.5.5})$$

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.

Applicable ;

A Streeter-Phelps Dissolved Oxygen Model was developed by Department staff to determine CBOD limits that would be protective of a Dissolved Oxygen level of instream water quality in Little Drywood Creek. The WLA study determined that a WLA of 15.25 mg/L CBOD and 5.5 mg/L Dissolved Oxygen would be protective of instream dissolved oxygen water quality criteria. Model results are available upon request.

**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 all facilities meeting the following criteria:

- Facility is a designated Major.
- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH<sub>3</sub>)

**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 40 CFR 122.41(m)(4)(i)(A), (B), & (C). Any bypasses from this facility are subject to the reporting required in 40 CFR 122.41(l)(6) and per Missouri’s Standard Conditions I, Section B, part 2.b. Additionally, Anticipated Bypasses include bypasses from peak flow basins or similar.

- Not Applicable, this facility does not bypass.

**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 ;

Little Drywood Creek is listed on the 2008 Missouri 303(d) List for low dissolved oxygen.

- This facility is considered to be a source of or has the potential to contribute to the above listed pollutant(s). TMDL development is currently scheduled for 2016. However, the facility is a potential source of low dissolved oxygen. Additionally, the facility is subject to a TMDL for the Marmaton River, requiring effluent monitoring for Total Nitrogen and Total Phosphorus and instream monitoring for temperature, dissolved oxygen, pH, ammonia and chlorophyll a.

**Part V – Effluent Limits Determination**

**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.

**EFFLUENT LIMITATIONS TABLE:**

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	GPD	1	*		*		
BOD <sub>5</sub>	MG/L	1,3	28		20	YES	15/30
TSS	MG/L	1,3	28		20	YES	45/30
PH	SU	1	6.5-9.0		6.5-9.0	YES	6.0-9.0
AMMONIA AS N (APRIL 1 – SEPT 30)	MG/L	2,3	5.8		1.4	YES	2.5/2.5
AMMONIA AS N (OCT 1 – MARCH 31)	MG/L	2,3	11.8		2.9	YES	3.5/3.5
DISSOLVED OXYGEN (DO)	MG/L	2,9	5.5**		5.5**	YES	*/-
ESCHERICHIA COLI	***	1,3		1030	206	YES	****
OIL & GREASE (MG/L)	MG/L	1,2,3	15		10	NO	
CHLORIDE	MG/L	2,9	*		*	YES	1000/-
TOTAL NITROGEN AS N	MG/L	10	*		*	YES	****
TOTAL PHOSPHORUS AS P	MG/L	10	*		*	YES	****
PHENOL, TOTAL	µg/L	2,3	184		71	YES	250/-
CHROMIUM(III), TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	380/250
CHROMIUM(VI), DISSOLVED	µg/L	2,9	*		*	YES	380/250
COPPER, TOTAL RECOVERABLE	µg/L	2,3	16		13	YES	80/50
IRON, TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	1500/1000
ZINC, TOTAL RECOVERABLE	µg/L	2,9	*		*	YES	1000/800
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	Please see WET Test in the Derivation and Discussion Section below.				
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

\* - Monitoring requirement only.

\*\* - For DO the Daily Maximum is a Daily Minimum and the Monthly Average is a Monthly Average Minimum.

\*\*\* - # 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. Dissolved Oxygen Policy               | 12. Antidegradation Review         |

**OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:**

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Biochemical Oxygen Demand (BOD<sub>5</sub>).** Results from a Streeter-Phelps water quality model, indicate that a CBOD WLA of 15.25 mg/L at an effluent dissolved oxygen (DO) concentration of 5.5 mg/L will be protective of water quality criteria in Little Drywood Creek. CBOD effluent limits of 15.3 mg/L average monthly and 22.9 maximum daily, in conjunction with a minimum DO concentration of 5.5 mg/L, are recommended. The previous WQRS indicated that at the request of the permittee and established in the August 10, 2005, correspondence from the City of Nevada, equivalent BOD<sub>5</sub> effluent limits of 20 mg/L average monthly and 28 mg/L maximum daily, as per [10 CSR 20-7.015(8)(B)6.], will be established in the permit. Note that the TMDL for Marmaton River was approved by EPA on 26 October 2010. Although not applicable at this time, wasteload allocations for carbonaceous biochemical oxygen demand developed in support of the TMDL may apply subsequent to the first permit renewal following completion of facility upgrades. These effluent limits would be designed to be protective of the Marmaton River at the confluence with Little Drywood Creek.
- **Total Suspended Solids (TSS).** September 9, 2005, WQRS indicated: “Direct application of standard effluent limits for TSS may not be protective of water quality during low-flow conditions. Discussion with Water Quality Monitoring & Assessment staff and best professional judgement suggest effluent limitations 5 mg/L greater than those proposed for CBOD to be appropriate.” Therefore, TSS effluent limitations of 20 mg/L monthly average and 28 mg/L daily maximum are hereby established. Note that the TMDL for Marmaton River was approved by EPA on 26 October 2010. Although not applicable at this time, wasteload allocations for total suspended solids developed in support of the TMDL may apply subsequent to the first permit renewal following completion of facility upgrades. These effluent limits would be designed to be protective of the Marmaton River at the confluence with Little Drywood Creek.
- **pH.** pH shall be maintained within the range from 6.5 to 9.0 Standard Units (SU) as per 10 CSR 20-7.031(4)(E). DMR data indicate that the permittee is not currently capable of consistently meeting the more stringent limits. Therefore, the permit will contain interim and final effluent limitations for pH.
- **Total Ammonia Nitrogen.** A Reasonable Potential Analysis indicates that the facility has potential to violate water quality standards for Ammonia in the receiving stream. Effluent limitations were calculated below. DMR data indicate that the facility is capable of meeting new Ammonia limits upon issuance. Early Life Stages Present Total Ammonia Nitrogen criteria apply [10 CSR 20-7.031(4)(B)7.C. & Table B3] default pH 7.8 SU Background total ammonia nitrogen = 0.01 mg/L.

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

Summer: April 1 – September 30

Chronic WLA:  $C_e = ((3.1 + 0.25)1.5 - (0.25 * 0.01))/3.1$   
 $C_e = 1.6 \text{ mg/L}$

Acute WLA:  $C_e = ((3.1 + 0.025)12.1 - (0.025 * 0.01))/3.1$   
 $C_e = 12.2 \text{ mg/L}$

$LTA_c = 1.6 \text{ mg/L} (0.605) = \mathbf{0.97 \text{ mg/L}}$   
 $LTA_a = 12.2 \text{ mg/L} (0.167) = 2.0 \text{ mg/L}$

[CV = 1.26, 99<sup>th</sup> Percentile, 30 day avg.]  
 [CV = 1.26, 99<sup>th</sup> Percentile]

Use most protective number of LTA<sub>c</sub> or LTA<sub>a</sub>.

MDL =  $0.97 \text{ mg/L} (6.01) = 5.8 \text{ mg/L}$   
 AML =  $0.97 \text{ mg/L} (1.42) = 1.4 \text{ mg/L}$

[CV = 1.26, 99<sup>th</sup> Percentile]  
 [CV = 1.26, 95<sup>th</sup> Percentile, n =37]

Winter: October 1 – March 31

Chronic WLA:  $C_c = ((3.1 + 0.25)3.1 - (0.25 * 0.01))/3.1$   
 $C_c = 3.4 \text{ mg/L}$

Acute WLA:  $C_c = ((3.1 + 0.025)12.1 - (0.025 * 0.01))/3.1$   
 $C_c = 12.2 \text{ mg/L}$

$LTA_c = 3.4 \text{ mg/L} (0.626) = 2.1 \text{ mg/L}$

[CV = 1.17, 99<sup>th</sup> Percentile, 30 day avg.]

$LTA_a = 12.2 \text{ mg/L} (0.177) = 2.2 \text{ mg/L}$

[CV = 1.17, 99<sup>th</sup> Percentile]

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

MDL = 2.1 mg/L (5.63) = 11.8 mg/L

[CV = 1.17, 99<sup>th</sup> Percentile]

AML = 2.1 mg/L (1.38) = 2.9 mg/L

[CV = 1.17, 95<sup>th</sup> Percentile, n = 39]

- **Dissolved Oxygen**. The Streeter-Phelps water quality model determined that a dissolved oxygen concentration of 5.5 mg/L is required at current BOD effluent limit levels to ensure protection of water quality in Little Drywood Creek. Therefore, a minimum daily and minimum monthly average of 5.5 mg/L will apply. Further investigation is planned to determine whether the instream dissolved oxygen criterion of 5 mg/L found in Table A of 10 CSR 20-7.031 is appropriate or if site-specific criteria are required for the Marmaton River and Little Drywood Creek. Once this investigation is complete, the facility may be subject to site-specific wasteload allocations for dissolved oxygen in future operating permits.
- **Escherichia coli (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). If more than one (1) sample is collected in a calendar week, then the result is to be reported as a geometric mean.
- **Total Nitrogen and Total Phosphorus**. A monitoring only requirement for total nitrogen and total phosphorus. Little Drywood Creek flows into the Marmaton River downstream of the facility discharge. The Marmaton River TMDL stipulates that this facility will contain an effluent monitoring requirement for nitrogen and phosphorus.
- **Oil & Grease**. Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum. Effluent limitations from the previous operating permit have been retained.
- **Chloride**. The previous operating permit contained effluent limitations for Sulfate and Chlorides. A Reasonable Potential Analysis of that data indicates no potential for the facility to violate water quality standards in the receiving stream, as per 10 CSR 20-7.031(4)(L)I. However, beyond this combined 1000 mg/L general criterion, there is no specific sulfate water quality standard for protection of aquatic life. Therefore, Effluent limitations from the previous operating permit will be replaced with a monitoring requirement for chloride only. Upon next renewal, monitoring data will be used to conduct a Reasonable Potential Analysis for Chloride.
- **Phenol**. A Reasonable Potential Analysis indicates that the facility has potential to violate water quality standards for Phenol in the receiving stream. Effluent limitations are calculated below. Protection of Aquatic Life CCC = 100 µg/L, CMC = N/A, Background Phenol = 0 µg/L

Chronic WLA:  $C_c = ((3.1 + 0.0025)100 - (0.0025 * 0.0))/3.1$   
 $C_c = 100.1 \text{ µg/L}$

$LTA_c = 100.1 (0.356) = 35.6 \text{ µg/L}$

[CV = 1.06, 99<sup>th</sup> Percentile]

MDL = 35.6 (5.17) = 184 µg/L

[CV = 1.06, 99<sup>th</sup> Percentile]

AML = 35.6 (2.00) = 71 µg/L

[CV = 1.06, 95<sup>th</sup> Percentile, n = 8]

DMR data indicate that the facility is capable of meeting these effluent limitations upon issuance.

**Metals**

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in the “Technical Support Document For Water Quality-based Toxic Controls” (EPA/505/2-90-001) and “The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion” (EPA 823-B-96-007). General warm-water fishery criteria apply and a water hardness of 162 mg/L is used in the conversion below.

Due to the absence of contemporaneous effluent and instream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate metals translators, partitioning between the dissolved and absorbed phases was assumed to be minimal (Section 5.7.3, EPA/505/2-90-001). Freshwater criteria conversion factors for dissolved metals were used as the metals translator as recommended in guidance (Section 1.3, 1.5.3, and Table 1, EPA 823-B-96-007). If concurrent site-specific data for total recoverable metals, dissolved metals, hardness, and total suspended solids are provided to the Department, partitioning evaluations may be considered and site-specific translators developed.

METAL	CONVERSION FACTORS	
	ACUTE	CHRONIC
Copper	0.960	0.960

Conversion factors for Cd and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 162 mg/L.

- **Chromium(III), Total Recoverable and Chromium(VI), Dissolved.** The previous operating permit contained effluent limitations for Total Recoverable Chromium. A Reasonable Potential Analysis was conducted with this monitoring data for both, Chromium(III) and Chromium(VI), indicating no potential for the facility to violate water quality standards for either pollutant. Therefore, effluent limitations from the previous operating permit will be replaced with separate monitoring only requirements for Chromium(III) and Chromium(VI).
- **Copper, Total Recoverable.** A Reasonable Potential Analysis indicates that the facility has potential to violate water quality standards for Copper in the receiving stream. Effluent limitations were calculated below. Protection of Aquatic Life Chronic Criteria = 13 µg/L, Acute Criteria = 20 µg/L.

Chronic =  $13/0.960 = 13.5 \mu\text{g/L}$   
 Acute =  $20/0.960 = 20.8 \mu\text{g/L}$

Chronic WLA:  $C_e = ((3.1 + 0.025)13.5 - (0.025 * 0.0))/3.1$   
 $C_e = 13.6 \mu\text{g/L}$

Acute WLA:  $C_e = ((3.1 + 0.0025)20.8 - (0.0025 * 0.0))/3.1$   
 $C_e = 20.8 \mu\text{g/L}$

$LTA_c = 13.6 (0.848) = 11.5 \mu\text{g/L}$  [CV = 0.144, 99<sup>th</sup> Percentile]  
 $LTA_a = 20.8 (0.724) = 15.1 \mu\text{g/L}$  [CV = 0.144, 99<sup>th</sup> Percentile]

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

MDL =  $11.5 (1.38) = 15.9 \mu\text{g/L}$  [CV = 0.144, 99<sup>th</sup> Percentile]  
 AML =  $11.5 (1.12) = 12.9 \mu\text{g/L}$  [CV = 0.144, 95<sup>th</sup> Percentile, n = 8]

DMR data indicate that the facility is capable of meeting these effluent limits upon issuance.

- **Iron, Total Recoverable.** A Reasonable Potential Analysis indicates no potential for the facility to violate water quality standards for Iron. Therefore, effluent limitations from the previous operating permit will be replaced with a monitoring only requirement. Protection of Aquatic Life Chronic Criteria = N/A µg/L, Acute Criteria = 1000 µg/L.

- **Lead, Total Recoverable.** Monitoring data show that all samples for Lead were below the detection limit. Therefore, this parameter will be removed from the effluent limitations of the permit. Protection of Aquatic Life Chronic Criteria = 4 µg/L, Acute Criteria = 100 µg/L.
- **Zinc, Total Recoverable.** A Reasonable Potential Analysis indicates no potential for the facility to violate water quality standards for zinc in the receiving stream. Therefore, effluent limitations from the previous operating permit will be replaced with a monitoring only requirement. Protection of Aquatic Life Chronic Criteria = 165 µg/L, Acute Criteria = 165 µg/L.
- **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.
  - Chronic
  - Acute
- No less than ONCE/YEAR:**
  - Facility is designated as a Major facility or has a design flow  $\geq$  1.0 MGD.
  - Facility continuously or routinely exceeds their design flow.
  - Facility exceeds its design population equivalent (PE) for BOD<sub>5</sub> whether or not its design flow is being exceeded.
  - Facility has Water Quality-based effluent limitations for toxic substances (other than NH<sub>3</sub>).

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

- **Minimum Sampling and Reporting Frequency Requirements.** Sampling and reporting frequency requirements have been retained from previous state operating permit for all parameters except Oil and Grease and Chloride. Oil and Grease and Chloride shall be sampled at least once per month.

## **Part VI – 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 is tentatively schedule to begin on March 18, 2011 or is in process.

- The Public Notice period for this operating permit was from 03/18/2011 to 04/17/2011. No responses received to the Public Notice of this operating permit. Continue to issuance.

**DATE OF FACT SHEET:** (02/10/2011); REVISED 03/25/2011

### **COMPLETED BY:**

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**Part VII – Appendices**

**APPENDIX A - 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.	3
Maximum: 10 pt Design Flow (avg. day) or peak month; use greater (Max 10 pts.)	1 pt. / MGD or major fraction thereof.	2
<b>EFFLUENT DISCHARGE RECEIVING WATER SENSITIVITY:</b>		
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
<b>PRELIMINARY TREATMENT – Headworks</b>		
Screening and/or comminution	3	3
Grit removal	3	3
Plant pumping of main flow (lift station at the headworks)	3	3
<b>PRIMARY TREATMENT</b>		
Primary clarifiers	5	5
Combined sedimentation/digestion	5	-
Chemical addition (except chlorine, enzymes)	4	-
<b>REQUIRED LABORATORY CONTROL – performed by plant personnel (highest level only)</b>		
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	-
<b>ALTERNATIVE FATE OF EFFLUENT</b>		
Direct reuse or recycle of effluent	6	-
Land Disposal – low rate	3	-
High rate	5	-
Overland flow	4	-
<b>Total from page ONE (1)</b>	----	<b>29</b>

**APPENDIX A - CLASSIFICATION WORKSHEET (CONTINUED):**

ITEM	POINTS POSSIBLE	POINTS ASSIGNED
<b>VARIATION IN RAW WASTE (highest level only) (DMR exceedances and Design Flow exceedances)</b>		
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	2
Recurring deviations or excessive variations of more than 200 % in strength and/or flow	4	-
Raw wastes subject to toxic waste discharge	6	-
<b>SECONDARY TREATMENT</b>		
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	-
<b>DISINFECTION</b>		
Chlorination or comparable	5	-
Dechlorination	2	-
On-site generation of disinfectant (except UV light)	5	-
UV light	4	4
<b>SOLIDS HANDLING – SLUDGE</b>		
Solids Handling Thickening	5	-
Anaerobic digestion	10	-
Aerobic digestion	6	6
Evaporative sludge drying	2	-
Mechanical dewatering	8	-
Solids reduction (incineration, wet oxidation)	12	-
Land application	6	6
Total from page <b>TWO (2)</b>	----	33
Total from page <b>ONE (1)</b>	---	29
Grand Total	---	62

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

**APPENDIX B – RPA RESULTS:**

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	Range max/min	CV***	MF	RP Yes/No
Total Ammonia as Nitrogen (Summer) (mg/L)	12.1	25.19	1.5	24.72	37	8.2/0.2	1.26	3.075	Yes
Total Ammonia as Nitrogen (Winter) (mg/L)	12.1	12.73	3.1	12.48	39	4.6/0.12	1.17	2.769	Yes
Phenol (µg/L)	N/A	N/A	100	286.57	8	44/4.9	1.06	6.566	Yes
Copper, Total Recoverable (µg/L)	22.05	19.10	14.08	18.96	8	14/9	0.144	1.366	Yes

N/A – Not Applicable

\* - Units are (µg/L) unless otherwise noted.

\*\* - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.

\*\*\* - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.

RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).

n – Is the number of samples.

MF – Multiplying Factor. 99% Confidence Level and 99% Probability Basis.

RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

Reasonable Potential Analysis is conducted as per (TSD, EPA/505/2-90-001, Section 3.3.2). A more detailed version including calculations of this RPA is available upon request.