

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-0004898

Owner: Aquila
Address: 10700 East 350 Highway, Kansas City, MO 64138

Continuing Authority: Same as above
Address: Same as above

Facility Name: Aquila, Lake Road Plant
Address: 1413 Lower Lake Road, St. Joseph, MO 64504

Legal Description: NW ¼, SW ¼, Sec. 30, T57N, R35W, Buchanan County

Receiving Stream: Missouri River (P)
First Classified Stream and ID: Missouri River (P)(00226)
USGS Basin & Sub-watershed No.: (10240011-050001)

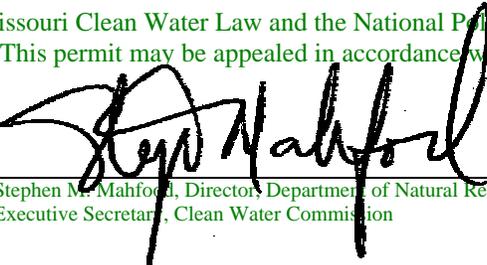
is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See page 2

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

June 13, 2003
Effective Date


Stephen M. Mahford, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

June 12, 2008
Expiration Date
MO 780-0041 (10-93)

Jim Hull, Director of Staff, Clean Water Commission

FACILITY DESCRIPTION (continued)

Outfall #001 - Industry - SIC#4911

Blowdown from recirculating cooling water systems/boiler blowdown/storm water softening waste/water.

Design flow is 1.374 MGD.

Actual flow is 0.907 MGD.

Outfall #002 - Industry - SIC#4911

Wastewater from ash and sludge treatment ponds and coal pile runoff.

Design flow is 1.677 MGD.

Actual flow is 0.633 MGD.

Outfall #003 - Industry - SIC#4911

Once through cooling water/chlorination.

Design flow is 110.6 MGD.

Actual flow is 42.2 MGD.

Land Application of water treatment sludge

This permit allows for land application of lime sludge from water treatment at any site that meets the requirements in the permit Special Conditions.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 7	
					PERMIT NUMBER MO-0004898	
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> Flow	MGD	*		*	once/week	24 hr. estimate
Intake Total Suspended Solids	mg/L	*		*	once/month	**
Effluent Total Suspended Solids	mg/L	*		*	once/month	**
Net Suspended Solids (Note 1)	mg/L	100		30	once/month	**
Oil & Grease	mg/L	20		15	once/month	**
<u>Outfall #002</u> Flow	MGD	*		*	once/month	24 hr. estimate
Total Suspended Solids, Effluent	mg/L	100		30	once/month	**
Oil & Grease	mg/L	20		15	once/month	grab
Temperature	°C (°F)	41°C (105°F)		41°C (105°F)	once/month	instantaneous
pH - Units	SU	***		***	once/month	grab
<u>Outfall #003</u> Flow	MGD	*		*	once/day	24 hr. estimate
Thermal Discharge	BTU/HR	1.41 x 10 ⁹		(note 3)	once/week	calculated
Temperature, Intake	°C (°F)	*		*	once/day	instantaneous
Temperature, Effluent	°C (°F)	*		*	once/day	instantaneous
Total Residual Chlorine (Note 2)	mg/L	0.2		0.2	once/day	grab
MONITORING REPORTS SHALL BE SUBMITTED <u>QUARTERLY</u> ; THE FIRST REPORT IS DUE <u>October 28, 2003</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Part I</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** A composite sample made up from a minimum of four grab samples collected within a 24 hour period with a minimum of two hours between each grab sample.
- *** 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.
- **** This initial test only is to be taken in March 2004, and results submitted with the following quarterly discharge monitoring report.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 1 - Intake Total Suspended Solids values may be used to calculate the "net" limitations, however, adequate flow monitoring of source waters must be conducted and reported on the Discharge Monitoring Reports. Intake analysis on Outfall #001 must include both well water and river water analysis and flows.

Note 2 - This permit contains a Total Residual Chlorine (TRC) limit.

- a. If the TRC limit in this permit is 0.01 mg/L or 0.2 mg/L, you must use an analytical method that has a quantification limit of no greater than 0.05 mg/L TRC. For reporting purposes on the discharge monitoring report (DMR), all analytical values below 0.05 mg/L shall be reported as "<quantlim." All analytical values at or above the quantification limit of 0.05 mg/L shall be reported as the measured value. The permittee shall report the quantification limit in the remarks section of the DMR.

The average monthly effluent values for TRC will be determined by assuming that analytical results below the quantification limit are equivalent to 0 mg/L when calculating the monthly average.

The daily effluent value will be considered equal to 0 mg/L if it is below the quantification limit.

- b. If the TRC limit in this permit is 1.0 mg/L; you must use an analytical method with a quantification limit between 0.2 and 0.5 mg/L. All analytical values below the quantification limit shall be reported as "<quantlim." All analytical values at or above the quantification limit shall be reported as the measured value.

The average monthly effluent values for TRC will be determined by assuming that analytical results below the quantification limit are equivalent to 0 mg/L when calculating the monthly average.

The daily effluent value will be considered equal to 0 mg/L if it is below the quantification limit.

- c. Disinfection is required year-round unless the permit specifically states that "Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31." If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.

- d. Do not chemically dechlorinate if it is not needed to meet the limits in your permit.

- e. If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as "0 mg/L" TRC.

Note 3 - Heat Input Allocations

Heat allocations were based on an allowed increase of 5°F within the thermal mixing zone. Twenty-five percent of the 7Q10 flow, or 1,262 ft³/sec, were used to represent the volume (of flow) per 10 CSR 20-7.031(4)(D)6. Allocations developed using this scenario are believed to be protective of designated uses throughout the year.

$$\begin{aligned} Q &= m \cdot c_s \cdot (\Delta T) \\ &= (1,262 \cdot 62.4) \cdot (1) \cdot (5) \\ &= 393,744 \text{ BTU/sec} \\ \text{or} \\ &= 1.41 \times 10^9 \text{ BTU/Hr} \end{aligned}$$

$$\begin{aligned} Q &= \text{BTU/sec} \\ m &= \text{mass/sec, } 62.4 \text{ lbs/ft}^3 \\ &= 1,262 \cdot 62.4 \\ C_s &= \text{specific heat of water} \\ &= 1 \text{ BTU } \text{ } ^\circ\text{F}^{-1} \text{ lb}^{-1} \\ \Delta T &= \text{allowed temperature change} \\ &= 5 \text{ } ^\circ\text{F} \end{aligned}$$

C. 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. There shall be no discharge of polychlorinated biphenyl compounds.
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.
6. Any pesticide discharge from any point source shall comply with the requirements of Federal Insecticide, Fugicide and Rodenticide Act, as amended (7 USC 136 et. seq.) and the use of such pesticides shall be in a manner consistent with its label.
7. There shall be no discharge of cooling tower maintenance chemicals which contain any "priority pollutant" as currently defined under federal and state regulations except as specifically authorized elsewhere in this permit.

C. SPECIAL CONDITIONS (continued)

8. General Criteria. The following 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:
- (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
 - (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
 - (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
 - (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
 - (e) There shall be no significant human health hazard from incidental contact with the water;
 - (f) There shall be no acute toxicity to livestock or wildlife watering;
 - (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
 - (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.
9. Land Application Requirements
- (a) Land Application of sludge shall not exceed the most restrictive of the following criteria:
 - 1. Crop nitrogen fertilizer requirements
 - 2. Effective Neutralizing Material (ENM) amount to raise soil pH per soil test recommendations for crop needs
 - 3. Metal limitations in University Extension publication WQ 425, tables 3 & 4
 - 4. Pesticide amounts not to exceed 10 percent of the application rate on the pesticide label
 - (b) Sludges land applied shall be tested at least once per year during land application periods for Total Kjeldahl Nitrogen, Arsenic, Aluminum, Cadmium, Chromium, Copper, Lead Mercury, Molybdenum, Nickel, Selenium and Zinc. Also, test for any pesticides or other significant contaminants present in the raw water supply. Report all results as mg/Kg on dry weight basis.
 - (c) In addition, lime sludge that is land applied shall be tested at least once per year for Effective Neutralizing Material (ENM) per MU guide G9102, Liming Missouri Soils and G9107, Missouri Limestone Quality: What is ENM?, published by the University of Missouri Extension Service.
 - (d) Soil tests shall be conducted at least once per year before sludge application, during each year when water treatment plant sludge is to be land applied.
 - (e) Sludge tests and soil tests shall be maintained by the permittee for at least five years.
 - (f) Lime sludge shall not be land applied if the soil pH exceeds pH 7.5 (salt based test) or pH 8.0 (water based test).
10. An annual land application of sludge report shall be submitted yearly. The annual report shall also contain a summary of sludge disposal activities, including amount of sludge generated, amount stored, amount disposed and disposal method. If sludge is land applied, indicate the number of acres used, the application rate in dry tons/acre, the soil pH, and the pounds of ENM per ton of sludge. If sludge containing aluminum, metals, or pesticides is land applied, also indicate the concentration in sludge and soil in ppm dry weight for each field, including the background soil concentration.

C. SPECIAL CONDITIONS (continued)

11. The department may require the submittal of a site-specific sludge management plan where deemed appropriate to protect the environment.
12. Land application of sludges containing aluminum additives (alum sludge, lime/alum sludge, etc.) shall meet the following additional requirements:
 - (a) During years that sludge is land applied, sludge and soil must be tested once per year for total aluminum concentration on a dry weight basis and for soil pH.
 - (b) Land application sites shall be maintained at a soil pH between pH 5.5 to 7.5 based on the salt based pH test or 6.0 to 8.0 for water based test.
 - (c) Land application of sludge shall not exceed cumulative aluminum loadings of 4,000 pounds aluminum per acre above soil background levels. Background soil levels of aluminum shall be based on soil testing of the site prior to sludge application or testing of similar soils in the immediate vicinity.
 - (d) Permittees do not need to keep records of cumulative aluminum loading, if the sludge contains less than 40,000 ppm total aluminum on a dry weight basis and sludge application rates do not exceed 2 dry tons per acre per year (320 cubic feet/acre at 20% solids content).
 - (e) Sludge that contains more than 40,000 ppm total aluminum on a dry weight basis shall be incorporated into the ground by discing, plowing or equivalent methods within two weeks after land application.