

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-0108774

Owner: St. Francois County Environmental Corporation
Address: 200 Landfill Road, Park Hills, MO 63601

Continuing Authority: Same as Owner
Address: Same as Owner

Facility Name: St. Francois County Environmental Corporation
Facility Address: 200 Landfill Road, Park Hills, MO 63601

Legal Description: See page 2
Latitude/Longitude: See page 2
Receiving Stream: See page 2
First Classified Stream and ID: See page 2
USGS Basin & Sub-watershed No.: See page 2

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

FACILITY DESCRIPTION

- Outfall #001 – Eliminated.
- Outfall #002 - Closed Sanitary Waste Landfill/Transfer Station/Stormwater runoff- SIC # 4953-No Certified Operator Required.
- Outfall #003 - Closed Sanitary Waste Landfill/Stormwater runoff- SIC # 4953-No Certified Operator Required.
- Outfall #004 - Upstream Instream Monitoring Point-No Certified Operator Required.
- Outfall #005 - Downstream Instream Monitoring Point -No Certified Operator Required.
- Leachate Storage Tanks – “No discharge authorized”

Actual flow is dependent upon precipitation.

Leachate cannot be discharged. Stormwater that has come into contact with leachate is considered leachate and cannot be discharged. Leachate and stormwater that has come into contact with leachate must be managed in accordance with the provisions contained in the Missouri Solid Waste Management Laws, regulations and Sanitary Landfill Operating Permit; and Hazardous Waste Program (if applicable).

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 22, 2009
Effective Date


Mark N. Templeton, Director, Department of Natural Resources

May 21, 2014
Expiration Date
MO 780-0041 (10-93)

Gary L. Gaines, P.E., Director, Southeast Regional Office

FACILITY DESCRIPTION (continued)

Outfall #001 - Eliminated.

Outfall #002 - Sanitary Waste Landfill/Stormwater runoff- SIC # 4953-No Certified Operator Required.

Legal Description: SE ¼, NW ¼, Sec 36, T37N, R4E St. Francois County
Latitude/Longitude: +3752241/-090032423
Receiving Stream: Unnamed Tributary to Big River (U)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

Outfall #003 - Sanitary Waste Landfill/Stormwater runoff- SIC # 4953-No Certified Operator Required.

Legal Description: SE ¼, NW ¼, Sec 36, T37N, R4E St. Francois County
Latitude/Longitude: +3752267/-090032287
Receiving Stream: Unnamed Tributary to Big River (U)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

Outfall #004 - Upstream Monitoring Point-No Certified Operator Required.

Legal Description: SW ¼, NW ¼, Sec 36, T37N, R4E St. Francois County
Latitude/Longitude: +3752316/-09033004
Receiving Stream: Big River (P) (02080) (303 d)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

Outfall #005 - Downstream Monitoring Point-No Certified Operator Required.

Legal Description: SW ¼, SE ¼, Sec 26, T37N, R4E St. Francois County
Latitude/Longitude: +3753042/-09033169
Receiving Stream: Big River (P) (02080) (303 d)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PERMIT NUMBER MO-0108774

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until one (1) year after the effective date of this permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001-Eliminated</u>						
<u>Outfalls #002 and #003</u>						
Flow	MGD	*		*	once/quarter***	grab****
Rainfall	Inches	*		*	once/day	total
Chemical Oxygen Demand	mg/L	90		60	once/quarter***	grab****
Biochemical Oxygen Demand ₅	mg/L	60		45	once/quarter***	grab****
Total Suspended Solids	mg/L	80		60	once/quarter***	grab****
pH	SU	**		**	once/quarter***	grab****
Settleable Solids	mL/L/hr	1.5		1.0	once/quarter***	grab****
Chloride + Sulfate	mg/L	1000		*	once/quarter***	grab****
Benzene	µg/L	*		*	once/quarter***	grab****
Ethylbenzene	µg/L	*		*	once/quarter***	grab****
Toluene	µg/L	*		*	once/quarter***	grab****
Total Xylene	µg/L	*		*	once/quarter***	grab****
Iron, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Oil & Grease	mg/L	15		10	once/quarter***	grab****
Ammonia as N	mg/L	*		*	once/quarter***	grab****
Temperature	°C	*		*	once/quarter***	grab****
Nitrate as N	mg/L	*		*	once/quarter***	grab****
Total Phosphorous	mg/L	*		*	once/quarter***	grab****
Sulfate	mg/L	*		*	once/quarter***	grab****
Fluoride	mg/L	*		*	once/quarter***	grab****
Total Hardness	mg/L	*		*	once/quarter***	grab****
Antimony, Total Recoverable	µg/L	*		*	once/quarter***	grab****

Parameters continued on next page.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #002 and #003</u>						
Arsenic, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Barium, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Beryllium, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Boron, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Cadmium, Total Recoverable	µg/L	17		17	once/quarter***	grab****
Chromium (III), Total Recoverable	µg/L	*		*	once/quarter***	grab****
Chromium (VI), Total Dissolved	µg/L	*		*	once/quarter***	grab****
Cobalt, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Copper, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Lead, Total Recoverable	µg/L	29		29	once/quarter***	grab****
Manganese, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Mercury, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Nickel, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Selenium, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Silver, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Thallium, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Zinc, Total Recoverable	µg/L	440		440	once/quarter***	grab****

MONITORING REPORTS SHALL BE SUBMITTED Quarterly; THE FIRST REPORT IS DUE October 28, 2009. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

<u>Outfalls #004 and #005 – Instream Monitoring</u>						
Flow	MGD	*		*	once/quarter***	grab****
Total Suspended Solids	mg/L	*		*	once/quarter***	grab****
Total Hardness	mg/L	*		*	once/quarter***	grab****
Lead, Total Recoverable	µg/L	*		*	once/quarter***	grab****

MONITORING REPORTS SHALL BE SUBMITTED Quarterly; THE FIRST REPORT IS DUE October 28, 2009. 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 Parts I, STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

PERMIT NUMBER MO-0108774

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 one (1) year after the effective date of this 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-Eliminated</u>						
<u>Outfalls #002 and #003</u>						
Flow	MGD	*		*	once/quarter***	grab****
Rainfall	Inches	*		*	once/day	total
Chemical Oxygen Demand	mg/L	90		60	once/quarter***	grab****
Biochemical Oxygen Demand ₅	mg/L	45		30	once/quarter***	grab****
Total Suspended Solids (Outfall #002)	lbs/day	1621		810	once/quarter***	grab****
Total Suspended Solids (Outfall #003)	lbs/day	1621		810	once/quarter***	grab****
pH	SU	*****		*****	once/quarter***	grab****
Settleable Solids	mL/L/hr	1.5		1.0	once/quarter***	grab****
Chloride + Sulfate	mg/L	1000		1000	once/quarter***	grab****
Benzene	µg/L	*		*	once/quarter***	grab****
Ethylbenzene	µg/L	*		*	once/quarter***	grab****
Toluene	µg/L	*		*	once/quarter***	grab****
Total Xylene	µg/L	*		*	once/quarter***	grab****
Iron, Total Recoverable	µg/L	1600		800	once/quarter***	grab****
Zinc, Total Recoverable	µg/L	215.2		107.3	once/quarter***	grab****
Oil & Grease	mg/L	15		10	once/quarter***	grab****
Ammonia as N	mg/L	*		*	once/quarter***	grab****
Temperature	°C	*		*	once/quarter***	grab****
Nitrate as N	mg/L	*		*	once/quarter***	grab****
Total Phosphorous	mg/L	*		*	once/quarter***	grab****
Chloride	mg/L	*		*	once/quarter***	grab****
Sulfate	mg/L	*		*	once/quarter***	grab****
Fluoride	mg/L	*		*	once/quarter***	grab****
Total Hardness	mg/L	*		*	once/quarter***	grab****
Antimony, Total Recoverable	µg/L	*		*	once/quarter***	grab****

Parameters continued on next page.

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PERMIT NUMBER MO-0108774

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OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfalls #002 and #003</u>						
Arsenic, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Barium, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Beryllium, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Boron, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Cadmium, Total Recoverable	µg/L	9.6		4.8	once/quarter***	grab****
Chromium (III), Total Recoverable	µg/L	*		*	once/quarter***	grab****
Chromium (VI), Total Dissolved	µg/L	*		*	once/quarter***	grab****
Cobalt, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Copper, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Lead, Total Recoverable (Outfall #002)	lbs/day	.33		.16	once/quarter***	grab****
Lead, Total Recoverable (Outfall #003)	lbs/day	.12		.06	once/quarter***	grab****
Manganese, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Mercury, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Nickel, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Selenium, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Silver, Total Recoverable	µg/L	*		*	once/quarter***	grab****
Thallium, Total Recoverable	µg/L	*		*	once/quarter***	grab****

MONITORING REPORTS SHALL BE SUBMITTED Quarterly; THE FIRST REPORT IS DUE October 28, 2010. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

<u>Outfalls #004 and #005 – Instream</u>						
<u>Monitoring</u>						
Flow	MGD	*		*	once/quarter***	grab****
Total Suspended Solids	mg/L	*		*	once/quarter***	grab****
Total Hardness	mg/L	*		*	once/quarter***	grab****
Lead, Total Recoverable	µg/L	*		*	once/quarter***	grab****

MONITORING REPORTS SHALL BE SUBMITTED Quarterly; THE FIRST REPORT IS DUE October 28, 2010. 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 Parts I, STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

- * Monitoring requirement only.
- ** 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.
- ***

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

- **** A representative grab sample shall be taken 30 to 60 minutes after stormwater discharge begins.
- ***** 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.

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. 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.
 - (c) That the effluent limit established in part A of the permit will be exceeded.
4. Report as no-discharge when a discharge does not occur during the report period.
 5. 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;

D. SPECIAL CONDITIONS- (continued)

- (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.
6. The permittee shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared within 30 days and implemented within 90 days of permit issuance. The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. The SWPPP must be reviewed and updated, if needed, every five (5) years or as site conditions change. The permittee shall select, install, use, operate, and maintain the Best Management Practices prescribed in the SWPPP in accordance with the concepts and methods described in the following document:

Storm Water Management For Industrial Activities, Developing Pollution Prevention Plans and Best Management Activities, (Document number EPA 832-R-92-006) published by the United States Environmental Protection Agency (USEPA) in September 1992.

The SWPPP must include the following:

- (a) A listing of specific Best Management Practices (BMPs) and a narrative explaining how BMPs will be implemented to control and minimize the amount of potential contaminants that may enter storm water. Minimum BMPs are listed in SPECIAL CONDITIONS #7 below.
 - (b) The SWPPP must include a schedule for a bi-monthly site inspection and a brief written report. The inspections must include observation and evaluation of BMP effectiveness. Deficiencies must be corrected within seven (7) days and the actions taken to correct the deficiencies shall be included with the written report, including photographs. Any corrective measure that necessitates major construction may also need a construction permit. Inspection reports must be kept on site with the SWPPP and maintained for a period of five (5) years. These must be made available to DNR personnel upon request.
 - (c) A provision for designating an individual to be responsible for environmental matters.
 - (d) A provision for providing training to all personnel involved in material handling and storage, and housekeeping of maintenance and cleaning areas. Proof of training shall be submitted on request of DNR.
7. Permittee shall adhere to the following minimum Best Management Practices:
- (a) Prevent the spillage or loss of fluids, oil, grease, fuel, etc. from vehicle maintenance, equipment cleaning, or warehouse activities and thereby prevent the contamination of storm water from these substances.
 - (b) Provide collection facilities and arrange for proper disposal of waste products including but not limited to petroleum waste products, and solvents.
 - (c) Store all paint, solvents, petroleum products and petroleum waste products (except fuels), and storage containers (such as drums, cans, or cartons) so that these materials are not exposed to storm water or provide other prescribed BMP's such as plastic lids and/or portable spill pans to prevent the commingling of storm water with container contents. Commingled water may not be discharged under this permit. Provide spill prevention control, and/or management sufficient to prevent any spills of these pollutants from entering waters of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.
 - (d) Provide good housekeeping practices on the site to keep trash from entry into waters of the state.
 - (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property. This could include the use of straw bales, silt fences, or sediment basins, if needed, to comply with effluent limits.

D. SPECIAL CONDITIONS- (continued)

8. The purpose of the SWPPP and the BMPs listed herein is the prevention of pollution of waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR 20-2.010(56)] of waters of the state, and corrective actions means the facility took steps to eliminate the deficiency.
9. All fueling facilities present on the site shall adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers, including spill prevention, control and counter measures.
10. Before releasing water that has accumulated in secondary containment areas it must be examined for hydrocarbon odor and presence of a sheen. When the presence of hydrocarbons is indicated, and at a minimum of once/quarter, this water must be tested for Total Petroleum Hydrocarbons (TPH). The suggested analytical method for testing TPH is non-Halogenated Organic by Gas Chromatography method 8015 (also known as OA1 and OA2). However, if the permittee so desires to use other approved testing methods (i.e. EPA 1664), they may do so. If the concentration for TPH exceeds 10mg/L, the water shall be taken to a permitted wastewater treatment plant for treatment.
11. Substances, regulated by federal law under the Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERLA), that are transported, stored, or used for maintenance, cleaning or repair, shall be managed according to RCRA and CERLA.

REPORTING OF EFFLUENT VIOLATIONS

If any of the sampling results from any of the outfalls show any violation of the permit discharge limitations, written notification shall be made to the Department of Natural Resources within five (5) days of notification of analytical results. Notification shall indicate the date(s) of sample collection, the analytical results, and permit number, and shall include a statement concerning the revisions or modifications in management practices that are being implemented to address the violation of the limitations that occurred.

After a violation has been reported, a sample of storm water runoff resulting from the next rainfall greater than 0.1 inches shall be collected at outfall(s) for which the violation occurred. Analytical results of this sample shall be submitted in writing to the Department of Natural Resources (this paragraph supersedes Part I, Section B: e.A. Noncompliance Notification).

**MISSOURI DEPARTMENT OF NATURAL RESOURCES
FACT SHEET
INDUSTRIAL STORM WATER RUNOFF FROM LANDFILL ACTIVITIES
STANDARD INDUSTRIAL CLASSIFICATION (SIC): 4953
FOR THE PURPOSE OF RENEWAL
OF
MO-0108774
ST. FRANCOIS ENVIRONMENTAL CORPORATION**

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 (MCWL)" 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 Fact Sheet 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 Fact Sheet is not an enforceable part of an operating permit.

Part A – Applicability & Facility Description

Landfill are to obtain a MSOP in accordance the MCWL, documented above, and its implementing regulations 10 CSR 20-6.010(1)(A); 10 CSR 20-6.010(5)(A); and 10 CSR 20-6.200(1)(A). Storm water runoff from landfills are considered Industrial activities in accordance with 10 CSR 20-6.200(2)(B)3.B. Closed landfills may also be required to maintain a MSOP in accordance with 10 CSR 20.600(1)(B)10.

Facility Description:

Outfall #001 – Eliminated.

Outfall #002 - Closed Sanitary Waste Landfill/Transfer Station/Stormwater runoff- SIC # 4953-No Certified Operator Required.

Outfall #003 - Closed Sanitary Waste Landfill/Stormwater runoff- SIC # 4953-No Certified Operator Required.

Outfall #004 - Upstream Instream Monitoring Point-No Certified Operator Required.

Outfall #005 - Downstream Instream Monitoring Point -No Certified Operator Required.

Leachate Storage Tanks – “No discharge authorized”

Actual flow is dependent upon precipitation.

Leachate cannot be discharged. Stormwater that has come into contact with leachate is considered leachate and cannot be discharged. Leachate and stormwater that has come into contact with leachate must be managed in accordance with the provisions contained in the Missouri Solid Waste Management Laws, regulations and Sanitary Landfill Operating Permit; and Hazardous Waste Program (if applicable).

Facility contact: Alan Aubuchon (573) 431-4768

Part B – Outfall Information & Descriptions

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	Eliminated			
002	Variable	BMP*	Industrial – Storm water runoff	.4
003	Variable	BMP*	Industrial – Storm water runoff	.6
004	Varibale	N/A	Upstream Instream Monitoring Point	0
005	Varibale	N/A	Downstream Instream Monitoring Point	0

* - BMP means Best Management Practices

Outfall #001 - Eliminated.

Outfall #002 - Sanitary Waste Landfill/Stormwater runoff- SIC # 4953-No Certified Operator Required.

Legal Description: SE ¼, NW ¼, Sec 36, T37N, R4E St. Francois County
Latitude/Longitude: +3752241/-090032423
Receiving Stream: Unnamed Tributary to Big River (U)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

Outfall #003 - Sanitary Waste Landfill/Stormwater runoff- SIC # 4953-No Certified Operator Required.

Legal Description: SE ¼, NW ¼, Sec 36, T37N, R4E St. Francois County
Latitude/Longitude: +3752267/-090032287
Receiving Stream: Unnamed Tributary to Big River (U)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

Outfall #004 - Upstream Monitoring Point-No Certified Operator Required.

Legal Description: SW ¼, NW ¼, Sec 36, T37N, R4E St. Francois County
Latitude/Longitude: +3752316/-09033004
Receiving Stream: Big River (P) (02080) (303 d)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

Outfall #005 - Downstream Monitoring Point-No Certified Operator Required.

Legal Description: SW ¼, SE ¼, Sec 26, T37N, R4E St. Francois County
Latitude/Longitude: +3753042/-09033169
Receiving Stream: Big River (P) (02080) (303 d)
First Classified Stream and ID: Big River (P) (02080) (303 d)
USGS Basin & Sub-watershed No.: 07140104-010006

Leachate Storage Tanks – “No discharge authorized”

Water Quality History:

The Big River (WBID # 02080) is listed on the 2002 Missouri 303(d) List for Non-volatile Suspended Solids (NVSS) and Lead from the Old Lead Belt AML. A Total Maximum Daily Load for Big River (TMDL) has been developed and limitations included in this permit.

Part C – 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 list 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 1st classified receiving stream’s beneficial water uses to be maintained are located in the Receiving Stream Table located below in accordance with [10 CSR 20-7.031(3)].

RECEIVING STREAM(S) TABLE:

WATERBODY NAME	CLASS	WBID	DESIGNATED USES*	8-DIGIT HUC	EDU**
Unnamed Tributary to Big River	U	---	General Criteria	07140104	Ozark/Meramec Drainage
Big River	P	02080	LWW, AQL, IND, WBC(A)***		

* - 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

*** - UAA has not been conducted.

RECEIVING STREAM MONITORING REQUIREMENTS:

Per the Big River TMDL, Section 7.0 Monitoring Plan, “Facilities that have been determined to cause or contribute to sediment and/or metals loading to impaired segments will be required to measure in-stream pollutant concentrations to determine the efficiency of their control measures”. Therefore, this facility shall implement a Receiving Stream Monitoring Requirement in their operating permit as established in the tables below:

Outfall # 004. (Upstream of all outfalls)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Flow MGD	Once/quarter	Grab	Legal Description: SW ¼, NW ¼, Sec 36, T37N, R4E St. Francois County Latitude/Longitude: +3752316/-090033004
TSS	Once/quarter	Grab	
Total Hardness	Once/quarter	Grab	
Lead, Total Recoverable	Once/quarter	Grab	

Outfall #005. (1/4 Mile Downstream of all outfalls)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Flow MGD	Once/quarter	Grab	Legal Description: SW ¼, SE ¼, Sec 26, T37N, R4E St. Francois County Latitude/Longitude: +3753042/-090033169
TSS	Once/quarter	Grab	
Total Hardness	Once/quarter	Grab	
Lead, Total Recoverable	Once/quarter	Grab	

Part D – Rationale and Derivation of Effluent Limitations & Permit Conditions**ANTI-BACKSLIDING:**

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

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

ANTIDEGRADATION:

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

As per [10 CSR 20-7.031(2)(D)], the three (3) levels of protection provided by the antidegradation policy in subsections (A), (B), and (C) of this section shall be implemented according to procedures developed by the department. On April 20, 2007, the Missouri Clean Water Commission approved *Missouri Antidegradation Rule and Implementation Procedure* (Antidegradation Rule), which is applicable to new or upgraded/expanded facilities. The implementation of the Antidegradation Rule occurred on August 31, 2008. Any construction permit application or other applicable permit applications (i.e. renewals, etc...) submitted prior to August 31, 2008, will not be required to have an Antidegradation Review. Renewals are not subject to the Antidegradation Rule.

- Renewal no degradation proposed and no further review necessary.

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.

FLOW BASED PERMITTING:

A standard mass-balance equation cannot be calculated for storm water from this facility because the flow from the facility and flow in the receiving stream cannot be determined for conditions on any given day. The amount of storm water discharged from the facility will vary based on previous rainfall, soil saturation, humidity, detention time, BMPs, surface permeability, etc. Flow in the receiving stream will vary based on similar climactic conditions, size of watershed, amount of surfaces with reduced permeability (houses, parking lots, and the like) in the watershed, hydrogeology, topography, etc.

It is likely that sufficient rainfall to cause a discharge for four continuous days from a facility will also cause some significant amount of flow in the receiving stream. Chronic WQSs are based on a four-day exposure (except Ammonia, which is based on a thirty day exposure). In the event that discharge does occur from this facility for four continuous days, some amount of flow will occur in the receiving stream. This flow will dilute storm water discharges from a facility. For these reasons, most industrial storm water facilities have limited potential to cause a violation of chronic water quality standards in the receiving stream.

Sufficient rainfall to cause a discharge for one hour or more from a facility would not necessarily cause significant flow in a receiving stream. Acute WQSs are based on a one hour of exposure, and must be protected at all times in unclassified streams, and within mixing zones of class P streams [10 CSR 20-7.031(3) and (4)]. Therefore, industrial storm water facilities with toxic contaminants do have the potential to cause a violation of acute WQSs if those toxic contaminants occur in sufficient amounts.

It is due to the items stated above that staff drafting this fact sheet are unable to perform statistical Reasonable Potential Analysis and calculate Wasteload Allocations via a mass-balance equation for effluent limit determination. However, staff may use their best professional judgment in determining if a facility has a potential to violate Missouri's Water Quality Standards. Effluent limitations are based on actual criteria that are subjected to Long Term Averages and then converted into Maximum Daily Limits or Average Monthly Limits.

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 where established in accordance with [10 CSR 20-7.031(10)] to allow the permittee to develop more appropriate BMPs.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP):

A plan to schedule activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. The plan may include, but is not limited to, treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Applicable ;

A SWPPP shall be developed and implemented for each site and shall incorporate required practices identified by the department with jurisdiction, incorporate erosion control practices specific to site conditions, and provide for maintenance and adherence to the plan.

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 to 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:

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

Where C = downstream concentration
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).

WLA MODELING:

Not Applicable ;

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

WATER QUALITY STANDARDS:

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

WHOLE EFFLUENT TOXICITY (WET) TEST:

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

Not Applicable ;

At this time, the permittee is not required to conduct WET test for this facility.

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 ;

The Big River (WBID # 02080) is listed on the 2002 Missouri 303(d) List for Non-volatile Suspended Solids (NVSS) and Lead from the Old Lead Belt AML.

– Per the Total Maximum Daily Load for Big River (TMDL), this facility is considered to be a source of or has the potential to contribute to the above listed pollutant(s).

The original 1998 303(d) impairment of sediment was changed for the 2002 303(d) list from sediment to NVSS. NVSS results from soil erosion or erosion of mine waste materials or stockpiles and include silt, sand and gravel. Missouri has no numeric standard for NVSS. Excessive deposits of sediment (in particular NVSS) in waters of the state are interpreted as violations of the general (narrative) criteria of the Water Quality Standards found at 10 CSR 20-7.031(3). Total Suspended Solids (TSS) equals volatile (organic) suspended solids (VSS) plus NVSS (mineral, non-volatile). Assuming that the ratio of VSS to NVSS is constant, then NVSS parallels TSS in amplitude (as TSS increases, so does NVSS). Therefore, for the purpose of this TMDL, TSS was used as a surrogate target for NVSS. A TSS target concentration can be derived from either the 75th percentile of the reference data or the 25th percentile of all existing data, whichever is more appropriate. The 75th percentile of the reference data was used to calculate the TSS target for the Big River TMDL. Chronic water quality criteria were used to establish the TMDL targets for Lead

Per the TMDL, *"The St. Francois County Environmental Corporation is a contributor of TSS to the Big River... The facility contributes TSS to the water quality impairment in conjunctions with discharge from the Vessel Mineral Products facility. During low-flow conditions, it is reasonable to allocate the entire loading capacity of a pollutant as wasteload allocations due to the lack of pollutant contributions from precipitation induced surface water runoff. Because the facility and Vessel Mineral Products facilities*

both discharge TSS to Big River, the two facilities should share the loading capacity for TSS during low-flow conditions. Therefore, the combined TSS wasteload allocation for these facilities during low-flow conditions is 1,115 kg/day.”

The below calculations are for each outfalls maximum TSS load in lbs/day.

1115 kg/day = 2458 lbs/day (per the TMDL)
 St. Francois design flow = 4.5 MGD (per WQIS and TMDL)
 Vessel Mineral design flow = 0.5 MGD (per WQIS and TMDL)
 Total design flow = 5.0 MGD

St. Francois ratio = 90%
 Vessel Mineral = 10%

2458 lbs/day x 90% = 2212 lbs/day

Outfall #001 = was 2.1 MGD but has been eliminated during the drafting of this operating permit due to inspection.

Outfall #002 = 3.3 MGD

Outfall #003 = 1.2 MGD

Ratio for #002 = 73.3%; thus 2212 lbs/day x 73.3% = 1621.4 lbs/day

Ratio for #003 = 26.6%; thus 2212 lbs/day x 26.6% = 588.4 lbs/day

Additionally, the TMDL established a Lead WLA, which is implemented in the derivation and discussion section of Part E, below.

Part E – Effluent Limits Determination

Outfalls #002 and #003 – Effluent Limitation Table:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
FLOW	gpd	1	*		*	NO	S
RAINFALL	Inches	9	*		*	NO	S
COD	mg/L	9	90		60	YES	120-90
BOD	mg/L	9	45		30	NO	60-45
TSS (OUTFALL #002 & #003)	Lbs/day	1/10	1621		810	YES	80-60 MG/L
PH	SU	1	6.5 – 9.0		6.5 – 9.0	YES	6-9
SETTLABLE SOLIDS	mL/L/hr	1/9	1.5		1.0	NO	S
CHLORIDE + SULFATES	mg/L	1/2/9	1000		1000	NO	S
OIL & GREASE	mg/L	1/2/9	15		10	NO	S
TOTAL AMMONIA AS N	mg/L	1/5/9	*		*	NO	S
TEMPERATURE	°C	9	*		*	YES	**
NITRATE AS N	mg/L	1/9	*		*	NO	S
TOTAL PHOSPHORUS	mg/L	1/9	*		*	NO	S
CHLORIDE	mg/L	1/9	*		*	YES	**
SULFATE	mg/L	1/9	*		*	NO	S
FLUORIDE	mg/L	1/9	*		*	NO	S
BENZENE	µg/L	1/9	*		*	YES	TOTAL BETX
ETHYLBENZENE	µg/L	1/9	*		*	YES	TOTAL BETX
TOLUENE	µg/L	1/9	*		*	YES	TOTAL BETX
TOTAL XYLENE	µg/L	1/9	*		*	YES	TOTAL BETX
TOTAL HARDNESS	mg/L	9	*		*	NO	*
ANTIMONY, TR	µg/L	1/9	*		*	NO	S
ARSENIC, TR	µg/L	1/9	*		*	NO	S
BARIUM, TR	µg/L	1/9	*		*	NO	S
BERYLLIUM, TR	µg/L	1/9	*		*	NO	S
BORON, TR	µg/L	1/9	*		*	NO	S
CADMIUM, TR	µg/L	1/9	9.6		4.8	YES	17-17 MG/L
CHROMIUM (III), TR	µg/L	1/9	*		*	YES	TOTAL CHROMIUM

CHROMIUM (VI), TR	µg/L	1/9	*		*	YES	TOTAL CHROMIUM
COBALT, TR	µg/L	1/9	*		*	NO	S
COPPER, TR	µg/L	1/9	*		*	NO	S
IRON, TR	µg/L	1/3/9	1600		800	YES	*
LEAD, TR (OUTFALL #002)	Lbs/day	1/2/3/10	.33		.16	YES	29-29 MG/L
LEAD, TR (OUTFALL #003)	Lbs/day	1/2/3/10	.12		.06	YES	29-29 MG/L
MANGANESE, TR	µg/L	1/9	*		*	NO	S
MERCURY, TR	µg/L	1/9	*		*	NO	S
NICKEL, TR	µg/L	1/9	*		*	NO	S
SELENIUM, TR	µg/L	1/9	*		*	NO	S
SILVER, TR	µg/L	1/9	*		*	NO	S
THALLIUM, TR	µg/L	1/9	*		*	NO	S
ZINC, TR	µg/L	1/3/9	215.2		107.3	YES	440-440 MG/L
MONITORING FREQUENCY	Please see Minimum Sampling and Reporting Frequency Requirements in the Derivation and Discussion Section below.						

* - Monitoring requirement only

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

TR – means Total Recoverable

BETX – means that the parameter of BETX has been speciated into each individual parameter of Benzene, Ethylbenzene, Toluene, and Total Xylene. The previous BETX limit was 0.75 µg/L.

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 | |

OUTFALLS #002 AND #003 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** Monitoring only requirement 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 to determine an alternate location for flow monitoring. Monitoring frequency is being retained from the previous permit.
- **Rainfall.** Monitoring only requirement. Precipitation data obtained from DMRs is used to aid in the determination of this facilities specific runoff coefficient and theoretical loading in the watershed. Data is also useful in correlating effectiveness of Best Management Practices. Monitoring frequency is being retained from the previous permit.
- **Chemical Oxygen Demand (COD).** Effluent limitations of 90 mg/L as a Daily Maximum and 60 mg/L as a Monthly Average are applicable to this facility and are consistent with other landfill operating permits. Monitoring frequency is being retained from the previous permit.
- **Biochemical Oxygen Demand (BOD₅).** Effluent limitations of 45 mg/L as a Daily Maximum and 30 mg/L as a Monthly Average are applicable to this facility and are consistent with other landfill operating permits. Monitoring frequency is being retained from the previous permit.
- **Total Suspended Solids (TSS).** Per the TMDL for Big River, “*The St. Francois County Environmental Corporation is a contributor of TSS to the Big River... The facility contributes TSS to the water quality impairment in conjunction with discharges from the Vessel Mineral Products facility. During low-flow conditions, it is reasonable to allocate the entire loading capacity of a pollutant as wasteload allocations due to the lack of pollutant contributions from precipitation induced surface water runoff. Because the facility and Vessel Mineral Products facilities both discharge TSS to Big River, the two facilities should share the loading capacity for TSS during low-flow conditions. Therefore, the combined TSS wasteload allocation for these facilities during low-flow conditions is 1,115 kg/day.*”

Outfall #001 - eliminated

Outfall #002

WLA = 1621.4 lbs/day

Conversion from lbs/day to mg/L:

8.34 (lb/million gallons)/(mg/L) is the conversion factor from lbs/day to mg/L.

[Concentration (mg/L)] = [Load(lbs/day)] ÷ [Flow(MGD) * 8.34 (lb/MG)/(mg/L)]

MDL = [(1621.4 lbs/day) ÷ (3.3 MGD x 8.34)] = 58.9 mg/L rounded up to **59 mg/L** (1621 LBS/DAY)

AML = MDL/2 = **30 mg/L** [per staff best professional judgment via TSD 5.4.2 (EPA/505/2-90-001)] (810 LBS/DAY)

Outfall #003

WLA = 588.4 lbs/day

Conversion from lbs/day to mg/L:

8.34 (lb/million gallons)/(mg/L) is the conversion factor from lbs/day to mg/L.

[Concentration (mg/L)] = [Load(lbs/day)] ÷ [Flow(MGD) * 8.34 (lb/MG)/(mg/L)]

MDL = [(588.4 lbs/day) ÷ (1.2 MGD x 8.34)] = 58.8 mg/L rounded up to **59 mg/L** (1621 LBS/DAY)

AML = MDL/2 = **30 mg/L** [per staff best professional judgment via TSD 5.4.2 (EPA/505/2-90-001)] (810 LBS/DAY)

Monitoring frequency is being retained from the previous permit.

- **pH.** Effluent limitation range is from 6.5 to 9.0 Standard pH Units (SU), as per [10 CSR 20-7.031(4)(E)]. pH is not to be averaged. Monitoring frequency is being retained from the previous permit.
- **Settleable Solids.** Effluent limitations of 1.5 mL per L per hour as a Daily Maximum and 1.0 mL per L per hour as a Monthly Average are applicable and are consistent with other landfill operating permits. Monitoring frequency is being retained from the previous permit.
- **Chlorides + Sulfate.** Effluent limitation of 1000 mg/L as a Daily Maximum is applicable as per [10 CSR 20-7.031(L)1.]. Monitoring frequency is being retained from the previous permit.
- **Benzene.** Monitoring of Total BETX is to be performed for the individual components of Benzene, Ethylbenzene, Toluene, and Xylene so that a direct comparison of results can be made to the water quality standards. Monitoring is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Monitoring frequency is being retained from the previous permit.
- **Ethylbenzene.** Monitoring of Total BETX is to be performed for the individual components of Benzene, Ethylbenzene, Toluene, and Xylene so that a direct comparison of results can be made to the water quality standards. Monitoring is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Monitoring frequency is being retained from the previous permit.
- **Toluene.** Monitoring of Total BETX is to be performed for the individual components of Benzene, Ethylbenzene, Toluene, and Xylene so that a direct comparison of results can be made to the water quality standards. Monitoring is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Monitoring frequency is being retained from the previous permit.
- **Total Xylene.** Monitoring of Total BETX is to be performed for the individual components of Benzene, Ethylbenzene, Toluene, and Xylene so that a direct comparison of results can be made to the water quality standards. Monitoring is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Monitoring frequency is being retained from the previous permit.
- **Oil & Grease.** Conventional pollutant, effluent limitation for protection of aquatic life; 10 mg/L monthly average, 15 mg/L daily maximum. Monitoring frequency is being set to quarterly to be consistent with the rest of the parameters in the permit. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Total Ammonia Nitrogen, Temperature.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to

exceedances of the receiving stream’s water quality. Monitoring for temperature and ammonia are included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

- **Nitrate as N.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream’s water quality. Monitoring for Nitrate as N is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Phosphorous.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream’s water quality. Monitoring for phosphorus is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Chlorides.** Monitoring only requirement is being placed into the permit to be consistent with other landfill operating permits. Monitoring for Chlorides are included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Sulfate.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream’s water quality. Monitoring for sulfate is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Fluoride.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream’s water quality. Monitoring for fluoride is included to determine whether “reasonable potential” to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

Metals

Effluent limitations for total recoverable metals were developed using methods and procedures outlined in 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 hardness of 200 mg/L. (per the TMDL for Big River).

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
Arsenic	1.0
Cadmium	0.916
Chromium III	0.316
Chromium VI	0.982
Copper	0.960
Lead	0.690
Mercury	0.85
Nickel	0.998
Silver	0.85
Zinc	0.978

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 = 200 mg/L.

- **Iron, Total Recoverable.** Submitted DMRs from this facility document exceedances of the Protection of AQL Iron criteria for each outfall. Therefore, this facility has a reasonable potential to cause or contribute to exceedances of the receiving stream's water quality. Thus effluent limitations are applicable. Protection of AQL Chronic Criteria = 1.0 mg/L, no Acute Criteria. No mixing allowed – please see Part D – Flow Based Permitting. No conversion factor for Iron from dissolved to total recoverable. The CCC = WLA. Monitoring frequency is being retained from the previous permit.

$$WLA_c = 1.0 \text{ mg/L}$$

$$LTA_c = 1.0 \text{ mg/L} (0.527) = 0.53 \text{ mg/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 0.53 \text{ mg/L} (3.11) = 1.6 \text{ mg/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 0.53 \text{ mg/L} (1.55) = 0.8 \text{ mg/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Zinc, Total Recoverable.** The previous operating permit contained Zinc, Total Recoverable (Zn) effluent limitations. Due to the fact there was insufficient DMR data for each outfall, staff was unable to determine if the reduction of limits to a monitoring only or removal of the parameter is appropriate. Therefore, limitations for ZN are applicable. Protection of Aquatic Life Acute Criteria (CMC) The Big River TMDL establishes that this (and other) facilities shall have a Zinc, Total Recoverable effluent limitation. The TMDL also establishes that Lead effluent limitations shall be based on Chronic Criteria to protect aquatic life for both acute and chronic toxicity. Thus effluent limitations are applicable. Protection of AQL Chronic Criteria = 211 µg/L. No mixing allowed – please see Part D – Flow Based Permitting. The CMC = WLA. Monitoring frequency is being increased to quarterly due to the lowering of effluent limitations from the previous permit. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

$$\text{Conversion for CMC} = 211/0.978 = 215.7 \text{ } \mu\text{g/L}$$

$$WLA_c = 215.7 \text{ mg/L}$$

$$LTA_c = 215.7 \text{ mg/L} (0.321) = 69.2 \text{ mg/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$MDL = 69.2 \text{ mg/L} (3.11) = 215.2 \text{ mg/L} \quad [CV = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$AML = 69.2 \text{ mg/L} (1.55) = 107.3 \text{ mg/L} \quad [CV = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Total Hardness.** Monitoring only requirement due to the fact that Metals toxicity varies by hardness. Monitoring frequency is being increased to quarterly due to the lowering of multiple metals effluent limitations from the previous permit. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Antimony, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for antimony is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Arsenic, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for arsenic is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Barium.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for barium is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Beryllium.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to

determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for beryllium is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

- **Boron**. Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for boron is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Cadmium, Total Recoverable**. The previous operating permit contained Cadmium, Total Recoverable (Cd) effluent limitations. Due to the fact there was an insufficient DMR data for all outfalls, staff was unable to determine if the reduction of limits to a monitoring only or removal of the parameter is appropriate. Therefore, limitations for Cd are applicable. Protection of Aquatic Life Acute Criteria (CMC) = 9.0 µg/L. No mixing allowed – please see Part D – Flow Based Permitting. The CMC = the WLA (after conversion). Monitoring frequency is being increased to quarterly due to the lowering of effluent limitations from the previous permit. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

Conversion for CMC = $9.0/0.915 = 9.8 \mu\text{g/L}$

$\text{WLA}_a = 9.8 \mu\text{g/L}$

$\text{LTA}_a = 9.8 \mu\text{g/L} (0.321) = 3.1 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]

$\text{MDL} = 3.1 \mu\text{g/L} (3.11) = 9.6 \mu\text{g/L}$

[CV = 0.6, 99th Percentile]

$\text{AML} = 3.1 \mu\text{g/L} (1.55) = 4.8 \mu\text{g/L}$

[CV = 0.6, 95th Percentile, n = 4]

- **Chromium (III), Total Recoverable**. The previous permit contained a monitoring requirement for Total Chromium; however, in December 2005, the department promulgated the revised Missouri Water Quality Standards. This revision included the speciation of Total Chromium to Chromium (III) and Chromium (VI). A monitoring only requirement will be established in the operating permit to determine the fate of this pollutant for future operating permits for this facility. Monitoring is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Chromium (VI), Total Recoverable**. The previous permit contained a monitoring requirement for Total Chromium; however, in December 2005, the department promulgated the revised Missouri Water Quality Standards. This revision included the speciation of Total Chromium to Chromium (III) and Chromium (VI). A monitoring only requirement will be established in the operating permit to determine the fate of this pollutant for future operating permits for this facility. Monitoring is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Cobalt, Total Recoverable**. Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for cobalt is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Copper, Total Recoverable**. Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be retained to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for temperature and ammonia are included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Lead, Total Recoverable**. The Big River TMDL establishes that this (and other) facilities shall have a Lead, Total Recoverable effluent limitation. The TMDL also establishes that Lead effluent limitations shall be based on Chronic Criteria to protect aquatic life for both acute and chronic toxicity. Protection of AQL Chronic Criteria = 5 µg/L (per the TMDL). No mixing allowed – please see Part D – Flow Based Permitting. The CCC = WLA. Monitoring frequency is being increased to quarterly due to the

lowering of effluent limitations from the previous permit. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

All Outfalls

Conversion for CCC = $5.0/0.690 = 7.2 \mu\text{g/L}$

$WLA_c = 7.2 \text{ mg/L}$

$LTA_c = 7.2 \text{ mg/L} (0.527) = 3.8 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

MDL = $3.8 \text{ mg/L} (3.11) = 11.8 \text{ mg/L}$

[CV = 0.6, 99th Percentile]

AML = $3.8 \text{ mg/L} (1.55) = 5.9 \text{ mg/L}$

[CV = 0.6, 95th Percentile, n = 4]

Outfall #001 - Eliminated

Outfall #002

MDL in lbs/day = $((0.0118 \text{ mg/L}) \times (8.34 \text{ cf}) \times (3.3 \text{ MGD})) = 0.325 \text{ lbs/day}$; rounded up to **0.33 lbs/day**

AML in lbs/day = $((0.0059 \text{ mg/L}) \times (8.34 \text{ cf}) \times (3.3 \text{ MGD})) = 0.162 \text{ lbs/day}$; rounded up to **0.16 lbs/day**

Outfall #003

MDL in lbs/day = $((0.0118 \text{ mg/L}) \times (8.34 \text{ cf}) \times (1.2 \text{ MGD})) = 0.118 \text{ lbs/day}$; rounded down to **0.12 lbs/day**

AML in lbs/day = $((0.0059 \text{ mg/L}) \times (8.34 \text{ cf}) \times (1.2 \text{ MGD})) = \mathbf{0.06 \text{ lbs/day}}$

- **Manganese, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for manganese is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Mercury, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for mercury is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Nickel, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for nickel is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Selenium, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for selenium is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Silver, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for silver is included to determine whether "reasonable potential" to exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.
- **Thallium, Total Recoverable.** Monitoring only requirement is being retained for this operating permit. Insufficient DMR data for all outfalls to determine if limitations or removal of this pollutant parameter is appropriate. Therefore, the monitoring frequency shall be increased to quarterly to determine the fate of this pollutant and if it is causing or contributing to exceedances of the receiving stream's water quality. Monitoring for thallium is included to determine whether "reasonable potential" to

exceed water quality standards exists after the discharge begins. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

- **Total Dissolved Solids, Total Organic Carbon, Calcium, Conductivity, Magnesium, and Vanadium**. No numeric water quality standards in 10 CSR 20-7.031. Parameters are being removed from the permit.
- **Cadmium, Total Recoverable**. Parameter is being removed from the permit and replaced by Chromium (III) and Chromium (VI) for direct comparison to the water quality standards.
- **Minimum Sampling and Reporting Frequency Requirements**. The previous state operating permit contained once per quarter and once per year sampling. Pollutant parameters with the once per quarter minimum sampling requirement will retain this frequency. The pollutant parameters with once per year sampling will be modified to once per quarter minimum sampling requirement to determine the fate of each given pollutant parameter. Quarterly sampling is the minimum frequency to yield sufficient data points to perform a reasonable potential analysis at the end of the permit cycle.

Part F – 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:

As per the Missouri Clean Water Law, the Missouri Clean Water Commission, and the federal Clean Water Act, persons wishing to comment on Missouri State Operating Permits are directed to do so by a department approved Public Notice coversheet. This Public Notice coversheet is attached to a Missouri State Operating Permit during the Public Notice period.

DATE OF FACT SHEET: MAY 21, 2009

COMPLETED IN COOPERATION WITH CENTRAL OFFICE WATER POLLUTION CONTROL PERMITTING STAFF AND BY:

**MICHAEL HEFNER,
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