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-0108472
Owner:	Front Street Remedial Action Corporation
Address:	8900 Front Street, Kansas City, MO 64120
Continuing Authority:	Same as above
Address:	1400 Commerce Bank Bldg, 1000 Walnut Street, Kansas City, MO 64106
Facility Name:	Conservation Chemical Company, Groundwater Treatment Facility
Facility Address:	8900 Front Street, Kansas City, MO 64120
Legal Description:	SW ¼, Sec. 23, T50N, R32W, Jackson County
UTM Coordinates:	X= 372660, Y= 4332412
Receiving Stream:	Missouri River (P)
First Classified Stream and ID:	Missouri River (P) (356)
USGS Basin & Sub-watershed No.:	10300101010070

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 - Industry - SIC #9999
Groundwater remediation facility consisting of equalization, hydroxide metal precipitation, biological treatment, activated carbon, pH adjustment and filtration.
Design flow is 0.432 MGD.
Average flow is 0.216 MGD.

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.

October 7, 2011
Effective Date

Sara Parker Pauley, Director, Department of Natural Resources

October 6, 2016
Expiration Date

John Madras, Director, Water Protection Program

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective 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
Outfall #001(Note 1)						
Flow	MGD	*		*	once/quarter***	24 hour total
Metals						
Arsenic	µg/L	*		*	once/quarter***	grab
Copper, Total Recoverable	µg/L	*		*	once/quarter***	grab
Beryllium	µg/L	*		*	once/quarter***	grab
Cadmium, Total Recoverable	µg/L	*		*	once/quarter***	grab
Chromium III, Total Recoverable	µg/L	*		*	once/quarter***	grab
Chromium VI, Total Dissolved	µg/L	*		*	once/quarter***	grab
Nickel, Total Recoverable	µg/L	*		*	once/quarter***	grab
Zinc, Total Recoverable	µg/L	*		*	once/quarter***	grab
Lead, Total Recoverable	µg/L	*		*	once/quarter***	grab
Mercury	µg/L	*		*	once/quarter***	grab
Cyanide, Amenable to Chlorination	µg/L	*		*	once/quarter***	grab
Cyanide, Total	µg/L	*		*	once/quarter***	grab
Conventional						
Biochemical Oxygen Demand$_5$	mg/L		*	*	once/quarter***	grab
Chemical Oxygen Demand	mg/L		*	*	once/quarter***	grab
pH – Units	SU	**		**	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE January 28, 2012. 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 Part I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective 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:

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		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001 (Note 1) (continued)						
Volatile Organics						
Trichloroethylene	µg/L	*		*	once/quarter***	grab
Dichloroethanes	µg/L	*		*	once/quarter***	grab
Trichloroethanes	µg/L	*		*	once/quarter***	grab
1,1-dichloroethylene	µg/L	*		*	once/quarter***	grab
1,2-dichloroethylene	µg/L	*		*	once/quarter***	grab
Chloroform	µg/L	*		*	once/quarter***	grab
Carbon tetrachloride	µg/L	*		*	once/quarter***	grab
Methylene chloride	µg/L	*		*	once/quarter***	grab
Pesticides						
Demeton	µg/L	*		*	once/quarter***	grab
Malathion	µg/L	*		*	once/quarter***	grab
Endosulfan	µg/L	*		*	once/quarter***	grab
Parathion	µg/L	*		*	once/quarter***	grab
Guthion	µg/L	*		*	once/quarter***	grab
Phenols						
Phenols, total	µg/L	1,100		335	once/quarter***	grab
2,4-dichlorophenol	µg/L	*		*	once/quarter***	grab
2,4,6-trichlorophenol	µg/L	22.0		7.0	once/quarter***	grab
2,4-dimethylphenol	µg/L	*		*	once/quarter***	grab
4 methylphenol	µg/L	*		*	once/quarter***	grab
2 methylphenol	µg/L	*		*	once/quarter***	grab

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		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001 (Note 1) - Persistent, Bioaccumulative Substances and Potential Carcinogens						
2,3,7,8 – TCDD	µg/L	*		*	once/quarter***	grab
PCB's	µg/L	*		*	once/quarter***	grab
Endrin	µg/L	*		*	once/quarter***	grab
Aldrin	µg/L	*		*	once/quarter***	grab
Dieldrin	µg/L	*		*	once/quarter***	grab
Heptachlor	µg/L	*		*	once/quarter***	grab
Methoxychlor	µg/L	*		*	once/quarter***	grab
Mirex	µg/L	*		*	once/quarter***	grab
Toxaphene	µg/L	*		*	once/quarter***	grab
Lindane	µg/L	*		*	once/quarter***	grab
a,b,d - BHC	µg/L	*		*	once/quarter***	grab
Acrylonitrile	µg/L	*		*	once/quarter***	grab
Hexachlorobenzene	µg/L	*		*	once/quarter***	grab
Hexachloroethane	µg/L	*		*	once/quarter***	grab
3,3-dichlorobenzidine	µg/L	*		*	once/quarter***	grab
1,2-diphenylhydrazine	µg/L	*		*	once/quarter***	grab
bis-(2)-chloroethylether	µg/L	*		*	once/quarter***	grab
Hexachlorobutadiene	µg/L	*		*	once/quarter***	grab
n-nitrosodimethylanine	µg/L	*		*	once/quarter***	grab
Others						
Ammonia as N	mg/L	*		*	once/quarter***	grab
Ethyl benzene	µg/L	*		*	once/quarter***	grab
Benzene	µg/L	*		*	once/quarter***	grab
Total phthalates	µg/L	*		*	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE January 28, 2012. 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 Part I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective 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
Outfall 001 (Note 1), Others (continued)						
Halogenated benzene	µg/L	*		*	once/quarter***	grab
Vinyl chloride	µg/L	*		*	once/quarter***	grab
PAH's	µg/L	*		*	once/quarter***	grab
Toluene	µg/L	*		*	once/quarter***	grab
Acetone	µg/L	*		*	once/quarter***	grab
2 butanone	µg/L	*		*	once/quarter***	grab
4 methyl-2-pentanone	µg/L	*		*	once/quarter***	grab
Benzoic acid	µg/L	*		*	once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE January 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

Whole Effluent Toxicity (WET) test	% Survival	See Special Condition #8	once/year in June	24 hr. composite

MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE July 28, 2012. 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 Part 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 6.5-9.0 pH units.
*** See table below for quarterly sampling.

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

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

Note 1 – Any variations that exceed the previous sample by more than 50% shall be investigated and the causes for the increase determined and reported to the Missouri Department of Natural Resources with the next monitoring report.

C. INFLUENT MONITORING REQUIREMENTS

The monitoring requirements shall become effective upon issuance and remain in effect until expiration of the permit. To determine removal efficiencies, the influent wastewater shall be monitored by the permittee as specified below:

SAMPLING LOCATION AND PARAMETER(S)	UNITS	MONITORING REQUIREMENTS	
		MEASUREMENT FREQUENCY	SAMPLE TYPE
Influent Ground Water Monitoring Parameter – All parameters that have effluent limits and monitoring requirements.		once/quarter***	grab

MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE January 28, 2012. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

D. SPECIAL CONDITIONS

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

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

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

4. Changes in Discharges of Toxic Substances

   The permittee shall notify the Director as soon as it knows or has reason to believe:
   (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

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

D. SPECIAL CONDITIONS (continued)

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

7. The permittee shall comply with any applicable requirements listed in 10 CSR 20-8 and 10 CSR 20-9, unless the facility has received written notification that the Department has approved a modification to the requirements. The monitoring frequencies contained in this permit shall not be construed by the permittee as a modification of the monitoring frequencies listed in 10 CSR 20-9. If a modification of the monitoring frequencies listed in 10 CSR 20-9 is needed, the permittee shall submit a written request to the department for review and, if deemed necessary, approval.

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

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	10%	Annual	24 hr. composite	June

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

Dilution Series						
40% effluent	20% effluent	10% effluent	5% effluent	2.5% effluent	(Control) 100% upstream, if available	(Control) 100% Lab Water, also called synthetic water

   (a) Test Schedule and Follow-Up Requirements
      (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
         (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
         (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
         (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
         (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.

D. SPECIAL CONDITIONS (continued)

(e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.

(f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

(g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.

(h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.

(i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.

(j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.

(k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.

(l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.

(m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.

(2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.

(3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:

(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.

(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.

(4) The permittee shall submit a summary of all test results for the test series along with complete copies of the test reports as received from the laboratory to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.

(5) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.

(6) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.

(7) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.

(b) PASS/FAIL procedure and effluent limitations:
  (1) To pass a multiple-dilution test:
    (a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC) OF 30% OR LESS, the AEC must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; **OR**,
    (b) For facilities with an AEC greater than 30%, the LC50 concentration must be greater than 100%; **AND**,
    (c) All effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required.

(c) Test Conditions
  (1) Test Type: Acute Static non-renewal
  (2) All tests, including repeat tests for previous failures, shall include both test species listed below.
  (3) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.
  (4) Test period: 48 hours at the "Allowable Effluent Concentration" (AEC) specified above.
  (5) Upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.
  (6) Unless otherwise specified above, multiple-dilution tests will be run with:
    (a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;
    (b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and
    (c) Reconstituted water.
  (7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.
  (8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

SUMMARY OF TEST METHODOLOGY FOR ACUTE WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

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

Test conditions for Pimephales promelas:

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

Missouri Department of Natural Resources
FACT SHEET
FOR THE PURPOSE OF RENEWAL
OF
MO-0108472
CONSERVATION CHEMICAL COMPANY SITE
FRONT STREET REMEDIAL ACTION 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" Section 644 as amended). MSOPs are issued for a period of five (5) years unless otherwise specified.

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

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

This Factsheet is for a Industrial Facility ☒.

Part I – Facility Information

Facility Type: Industrial
Facility SIC Code(s): 9999

Facility Description:
The Conservation Chemical Company site, is a 6 acre site located in eastern Kansas City, formerly operated as a chemical storage and disposal facility from 1960 until 1980. The site is located in the 100-year flood plain of the Missouri River, about 500 feet away from the river's banks, and near its confluence with the Little Blue River. Ground water both on and off the site contains: metals, cyanide, phenolic compounds, and volatile organic compounds (VOCs). Surface and subsurface soils on the site contained all of the contaminants listed above, as well as dioxins and polychlorinated biphenyls (PCBs). The site operates ground water extraction and monitoring wells to keep contaminated ground water from moving away from the site. This ground water is treated via equalization, hydroxide metal precipitation, biological treatment, activated carbon, pH adjustment and filtration. The treated groundwater is then discharged to the Missouri River.

Have any changes occurred at this facility or in the receiving water body that effects effluent limit derivation?
☐ - Yes; (please provide simple description or reference appropriate location in the Fact Sheet.
☒, - No.

Application Date: 02/09/2011
Expiration Date: 03/16/2011
Last Inspection: 05/18/2010 In Compliance ☒; Non-Compliance ☐

Front Street Remediation Action Corporation was found to be in compliance with the Missouri Clean Water Law, the Clean Water Commission Regulations, and Missouri State Operating Permit MO-0108472, based upon the observations made at the time of the last inspection.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	0.67	Advanced	Treated Groundwater	0.0

Outfall #001
Legal Description: SW ¼, Sec. 23, T50N, R32W, Jackson County
UTM Coordinates: X= 372660, Y= 4332412
Receiving Stream: Missouri River (P)
First Classified Stream and ID: Missouri River (P) (356)
USGS Basin & Sub-watershed No.: 10300101-010070

Receiving Water Body's Water Quality & Facility Performance History:
Front Street Remediation Action Corporation is a pump and treat facility that extracts groundwater from the subsurface at the former Conservation Chemical Company site. Subsurface cleanup consists of two extraction wells drawing groundwater into the site creating an inward gradient toward the wells. Front Street Remediation Action Corporation maintains control flow meters based on differential to monitor to maintain this inward gradient. Piezometers are placed through the site to monitor the groundwater levels. There are twelve monitoring wells based on the decree of the consent order to monitor the concentrations of chemicals still in the groundwater. The onsite groundwater treatment plant includes aerated equalization, metals precipitation, filtration, biological treatment, and activated carbon absorption. Sludge from the biological tower and filter presses are not required to be characterized as long as they are transported to a hazardous waste landfill capable of maintaining the type of waste produced at the plant. Hazardous waste and sludge are loaded inside of a container and transported to the landfill. Nothing is stored outside of the building.

The Receiving water body for this facility is the Missouri river.

Part II – Operator Certification Requirements

As per [10 CSR 20-6.010(8) Terms and Conditions of a Permit], permittees shall operate and maintain facilities to comply with the Missouri Clean Water Law and applicable permit conditions and regulations. Operators or supervisors of operations at regulated wastewater treatment facilities shall be certified in accordance with [10 CSR 20-9.020(2)] and any other applicable state law or regulation. As per [10 CSR 20-9.010(2)(A)], requirements for operation by certified personnel shall apply to all wastewater treatment systems, if applicable, as listed below:

Not Applicable ☒; This facility is not required to have a certified operator.

Part III – Receiving Stream Information

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

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

10 CSR 20-7.031 Missouri Water Quality Standards, the Department defines the Clean Water Commission water quality objectives in terms of "water uses to be maintained and the criteria to protect those uses." The receiving stream and/or 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**
Missouri River	P	356	AQL, DWS, IND, IRR, LWW, SCR, WBC-B***	10280202	Central Plains /Blackwater /Lamine

* - 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(S) LOW-FLOW VALUES TABLE:
FLOW DATA WAS OBTAINED FROM USGS 06893000 MISSOURI RIVER AT KANSAS CITY, MO

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Missouri River (P)	6,720	8,429	13,611

MIXING CONSIDERATIONS TABLE:

MIXING ZONE (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(a)]		ZONE OF INITIAL DILUTION (CFS) [10 CSR 20-7.031(4)(A)4.B.(III)(b)]	
7Q10	30Q10	1Q10	7Q10
2107	3402	6.7	6.7

RECEIVING STREAM MONITORING REQUIREMENTS:

No receiving water monitoring requirements recommended at this time.

Part IV – Rationale and Derivation of Effluent Limitations & Permit Conditions

ALTERNATIVE EVALUATIONS FOR NEW FACILITIES:
As per [10 CSR 20-7.015(4)(A)], discharges to losing streams shall be permitted only after other alternatives including land application, discharges to a gaining stream and connection to a regional wastewater treatment facility have been evaluated and determined to be unacceptable for environmental and/or economic reasons.

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

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

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

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

☒ - Renewal no degradation proposed and no further review necessary.

AREA-WIDE WASTE TREATMENT MANAGEMENT & CONTINUING AUTHORITY:
As per [10 CSR 20-6.010(3)(B)], …An applicant may utilize a lower preference continuing authority by submitting, as part of the application, a statement waiving preferential status from each existing higher preference authority, providing the waiver does not conflict with any area-wide management plan approved under section 208 of the Federal Clean Water Act or any other regional sewage service and treatment plan approved for higher preference authority by the Department.

BIOSOLIDS & SEWAGE SLUDGE:
Biosolids are solid materials resulting from domestic wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works. Additional information regarding biosolids and sludge is located at the following web address: http://dnr.mo.gov/env/wpp/pub/index.html, items WQ422 through WQ449.

☒ Not applicable;
This condition is not applicable to the permittee for this facility.

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

Not Applicable ☒;
The permittee/facility is not currently under Water Protection Program enforcement action.

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

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

Several special conditions pertaining to the permittee's pretreatment program may be included in the permit, and are as follows:
- Implementation and enforcement of the program,
- Annual pretreatment report submittal,
- Submittal of list of industrial users,
- Technical evaluation of need to establish local limitations, and
- Submittal of the results of the evaluation

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

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

In accordance with [40 CFR Part 122.44(d)(iii)] if the permit writer determines that any give pollutant has the reasonable potential to cause, or contribute to an in-stream excursion above the WQS, the permit must contain effluent limits for that pollutant.

Applicable ☒;
A RPA was conducted on appropriate parameters. Please see **APPENDIX # A – RPA RESULTS.**

Limitations must control all pollutants or pollutant parameters that are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above the Missouri Water Quality Standards. For hardness dependant metals it was assumed that the receiving stream's hardness was 162 mg/L. For parameters that all data was reported as non-detects in the treated Leachate no reasonable potential existed for excursions above the Missouri Water Quality Standards, this data is not presented in Appendix A. For those parameters for which a water quality standard does not exists a monitoring only requirement has been establish or retained from the previous permit.

REMOVAL EFFICIENCY:
Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD_5) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals.

Not Applicable ☒;
This facility is not a POTW and Influent monitoring is not being required to determine percent removal.

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

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

☒ - Not applicable. This facility is not required to develop or implement a program for maintenance and repair of the collection system; however, it is a violation of Missouri State Environmental Laws and Regulations to allow untreated wastewater to discharge to waters of the state.

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.

Not Applicable ☒;
This permit does not contain a SOC.

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

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

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

Not Applicable ☒;
At this time, the permittee is not required to develop and implement a SWPPP.

VARIANCE:
As per the Missouri Clean Water Law § 644.061.4, variances shall be granted for such period of time and under such terms and conditions as shall be specified by the commission in its order. The variance may be extended by affirmative action of the commission. In no event shall the variance be granted for a period of time greater than is reasonably necessary for complying with the Missouri Clean Water Law §§644.006 to 644.141 or any standard, rule or regulation promulgated pursuant to Missouri Clean Water Law §§644.006 to 644.141.

Not Applicable ☒;
This operating permit is not drafted under premises of a petition for variance.

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

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

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

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

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

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

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

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

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

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

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

Applicable ☒;
Under the federal Clean Water Act (CWA) §101(a)(3), requiring WET testing is reasonably appropriate for site-specific Missouri State Operating Permits for discharges to waters of the state issued under the National Pollutant Discharge Elimination System

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

☐ Facility is a designated Major.
☐ Facility continuously or routinely exceeds its design flow.
☐ Facility (industrial) that alters its production process throughout the year.
☐ Facility handles large quantities of toxic substances, or substances that are toxic in large amounts.
☒ Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3)
☐ Facility is a municipality or domestic discharger with a Design Flow ≥ 22,500 gpd.
☐ Other – please justify.

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

Not Applicable ☒;
This facility does not discharge to a 303(d) listed stream.

Part V – Effluent Limits Determination

Outfall #001 – Main Facility Outfall
Effluent limitations derived and established in the below Effluent Limitations Table are based on current operations of the facility. Future permit action due to facility modification may contain new operating permit terms and conditions that supersede the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	BASIS FOR LIMITS	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Flow	gpd	9	*		*	NO	*
1,1-dichloroethylene	µg/L	9	*		*	NO	10/5
1,2-dichloroethylene	µg/L	9	*		*	NO	10/5
1,2-diphenylhydrazine	µg/L	9	*		*	NO	1/1
2 butanone	µg/L	9	*		*	NO	*
2 methylphenol	µg/L	9	*		*	NO	*
2,3,7,8 – TCDD	µg/L	9	*		*	NO	1/1
2,4,6-trichlorophenol	µg/L	2	22		7	YES	100/50
2,4-dichlorophenol	µg/L	2	*		*	NO	*
2,4-dimethylphenol	µg/L	2	*		*	NO	*
3,3-dichlorobenzidine	µg/L	9	*		*	NO	1/1
4 methyl-2-pentanone	µg/L	9	*		*	NO	*
4 methylphenol	µg/L	9	*		*	NO	*
a,b,d - BHC	µg/L	9	*		*	NO	1/1
Acetone	µg/L	9	*		*	NO	*

Acrylonitrile	µg/L	9	*		*	NO	1/1
Aldrin	µg/L	9	*		*	NO	1/1
Ammonia as N	mg/L	2,5	*		*	NO	*
Arsenic	µg/L	2	*		*	YES	160/80
Benzene	µg/L	2	*		*	NO	*
Benzoic acid	µg/L	9	*		*	NO	*
Beryllium	µg/L	2	*		*	YES	40/20
Biochemical Oxygen Demand$_5$	mg/L	9		*	*	NO	*
bis-(2)-chloroethylether	µg/L	9	*		*	NO	1/1
Cadmium, Total Recoverable	µg/L	2	*		*	YES	100/50
Carbon tetrachloride	µg/L	2	*		*	NO	10/5
Chemical Oxygen Demand	mg/L	2,9		*	*	YES	4000/3000
Chloroform	µg/L	2	*		*	NO	10/5
Chromium, Total Recoverable	µg/L	2	Removed		Removed	YES	400/200
Chromium III, Total Recoverable	µg/L	2	*		*	YES	Not in Previous Permit
Chromium VI, Total Dissolved	µg/L	2	*		*	YES	Not in Previous Permit
Copper, Total Recoverable	µg/L	2	*		*	YES	100/50
Cyanide, Amenable to Chlorination	µg/L	2	*		*	YES	370/220
Cyanide, Total	µg/L	9	*		*	YES	1200/650
Demeton	µg/L	9	*		*	NO	*
Dichloroethanes	µg/L	9	*		*	NO	10/5
Dieldrin	µg/L	9	*		*	NO	1/1
Endosulfan	µg/L	9	*		*	NO	*
Endrin	µg/L	9	*		*	NO	1/1
Ethyl benzene	µg/L	2	*		*	NO	*
Guthion	µg/L	9	*		*	NO	*
Halogenated benzene	µg/L	2	*		*	NO	*
Heptachlor	µg/L	9	*		*	NO	1/1
Hexachlorobenzene	µg/L	9	*		*	NO	1/1
Hexachlorobutadiene	µg/L	9	*		*	NO	1/1
Hexachloroethane	µg/L	9	*		*	NO	1/1
Lead, Total Recoverable	µg/L	2	*		*	YES	100/50
Lindane	µg/L	9	*		*	NO	1/1
Malathion	µg/L	9	*		*	NO	*
Mercury	µg/L	2	*		*	YES	
Methoxychlor	µg/L	9	*		*	NO	1/1
Methylene chloride	µg/L	2	*		*	NO	10/5
Mirex	µg/L	9	*		*	NO	1/1
Nickel, Total Recoverable	µg/L	9	*		*	YES	3980/2380
n-nitrosodimethylanine	µg/L	9	*		*	NO	1/1
PAH's	µg/L	2,9	*		*	YES	30/15
Parathion	µg/L	9	*		*	NO	*

PCB's	µg/L	2,9	*		*	YES	1/1
pH – Units	SU	1	6.5-9.0		6.5-9.0	YES	6.0-9.0
Phenols, total	µg/L	2	1,100		335	YES	800/400
Toluene	µg/L	2	*		*	NO	*
Total phthalates	µg/L	9	*		*	NO	*
Toxaphene	µg/L	9	*		*	NO	1/1
Trichloroethanes	µg/L	2	*		*	NO	10/5
Trichloroethylene	µg/L	9	*		*	NO	10/5
Vinyl chloride	µg/L	2	*		*	NO	*
Zinc, Total Recoverable	µg/L	2	*		*	YES	2610/1480
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	11	**Please see WET Test in the Derivation and Discussion Section below.**				

* - Monitoring requirement only.

Basis for Limitations Codes:

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

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

An extensive review of Discharge Monitoring data from the previous permiting period took place during the renewal of this permit. The pollutants listed in the table below have a monitoring only requirement and have shown no reasonable potential to exceed Missouri's water quality standard or have been reported below detection limits of the approved analytical methods. This requirement has been established based on best professional judgment and where applicable Missouri's water quality standard. See appendix A for the results of reasonable potential analysis where applicable. A more detailed version including calculations of the RPA is available upon request.

Toluene	Guthion	4 methylphenol
Total phthalates	Halogenated benzene	a,b,d - BHC
Toxaphene	Heptachlor	Acetone
Trichloroethanes	Hexachlorobenzene	Acrylonitrile
Trichloroethylene	Hexachlorobutadiene	Aldrin
Vinyl chloride	Hexachloroethane	Ammonia as N
Zinc, Total Recoverable	Lead, Total Recoverable	Arsenic
Parathion	Lindane	Benzene
n-nitrosodimethylanine	Malathion	Benzoic acid
Chloroform	Mercury	Beryllium
Chromium III and VI	Methoxychlor	2,4-dichlorophenol
Copper, Total Recoverable	Methylene chloride	2 methylphenol
Cyanide, Amenable to Chlorination	Mirex	2,3,7,8 – TCDD
Cyanide, Total	Nickel, Total Recoverable	1,1-dichloroethylene
Demeton	bis-(2)-chloroethylether	1,2-dichloroethylene
Dichloroethanes	Cadmium, Total Recoverable	1,2-diphenylhydrazine
Dieldrin	Carbon tetrachloride	2 butanone
Endosulfan	2,4-dimethylphenol	PCB's
Endrin	3,3-dichlorobenzidine	PAH's
Ethyl benzene	4 methyl-2-pentanone	

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

- **Biochemical Oxygen Demand (BOD_5).** Based on DMR data from the previous operating permit period no potential exist for exceeding dissolved oxygen criteria via the discharge of BOD_5. Therefore the monitoring requirement has been retained from the previous permit.

- **Chemical Oxygen Demand (COD).** Based on DMR data from the previous operating permit period no potential exist for exceeding dissolved oxygen criteria via the discharge of COD. Therefore the monitoring requirement has been established in place of previously established numeric limitations.

- **pH**. Effluent limitations have been changed from 6.0-9.0 to 6.5-9.0

- **Total Phenol.** Protection of Aquatic Life CCC = 100 µg/L, CMC = 100 µg/L, Background Phenol = 0 µg/L

  Chronic WLA: $C_e = ((.67 + 2107)100 – (2107 * 0.0))/0.67$
  $C_e = 314{,}577$ µg/L

  Acute WLA: $C_e = ((.67 + 6.7)100 – (6.7 * 0.0))/.67$
  $C_e = 1{,}100$ µg/L

  $LTA_c = 314577\ (.137) = 43{,}097$ µg/L [CV = 3.199736, 99th Percentile]
  $LTA_a = 1{,}100\ (0.09) =$ **99** µg/L [CV = 3.199736, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 99 (11.11) = 1100 µg/L [CV = 3.199736, 99th Percentile]
  AML = 99 (3.38) = 335 µg/L [CV = 3.199736, 95th Percentile, n = 4]

- **2,4,6-trichlorophenol.** Protection of Drinking Water Supply CCC = 2 µg/L, CMC = 2 µg/L, Background = 0 µg/L

  Chronic WLA: $C_e = ((.67 + 2107)2 – (2107 * 0.0))/0.67$
  $C_e = 6291$ µg/L

  Acute WLA: $C_e = ((.67 + 6.7)2 – (6.7 * 0.0))/.67$
  $C_e = 22$ µg/L

  $LTA_c = 6291\ (.201) = 1264$ µg/L [CV = 2.036, 99th Percentile]
  $LTA_a = 22\ (0.116) =$ **2.5** µg/L [CV = 2.036, 99th Percentile]

  Use most protective number of LTA_c or LTA_a.

  MDL = 2.5 (8.65) = 22.0 µg/L [CV = 2.036, 99th Percentile]
  AML = 2.5 (2.81) = 7.0 µg/L [CV = 2.036, 95th Percentile, n = 4]

- **Chromium (III), Total Recoverable and Chromium VI.** Chromium III and VI have replaced Chromium, total recoverable as monitoring requirement for this permit. Missouri no longer has a Water Quality Standards for Total Chromium, but does have two species for Chromium as Trivalent and Hexavalent. Therefore, Chromium (III) and Chromium (VI) effluent limitations will replace the limitation for Total Chromium. A reasonable potential analysis for Chromium total recoverable was conducted and showed no reasonable potential to exceed the water quality standard for Chromium III or Chromium VI therefore a monitoring only requirement has been established to gather speciated data for the next permit renewal.

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

  ☒ No less than **ONCE/YEAR:**
  ☒ Facility has Water Quality-based effluent limitations for toxic substances (other than NH_3).

The default Mixing Considerations AEC% is determined as follows:

Acute AEC% = $((.67 + 6.7) / .67)^{-1}$ x 100 = 9%
10% minimum by default due to lack of diffuser.

- **Minimum Sampling and Reporting Frequency Requirements**. Sampling and reporting frequency requirements have been retained from previous state operating permit and are based on best professional judgment.

Part VI – Administrative Requirements

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

PUBLIC NOTICE:
The Department shall give public notice that a draft permit has been prepared and its issuance is pending. Additionally, public notice will be issued if a public hearing is to be held because of a significant degree of interest in and water quality concerns related to a draft permit. No public notice is required when a request for a permit modification or termination is denied; however, the requester and permittee must be notified of the denial in writing.

The Department must issue public notice of a pending operating permit or of a new or reissued statewide general permit. The public comment period is the length of time not less than 30 days following the date of the public notice which interested persons may submit written comments about the proposed permit.

For persons wanting to submit comments regarding this proposed operating permit, then please refer to the Public Notice page located at the front of this draft operating permit. The Public Notice page gives direction on how and where to submit appropriate comments.

☒ - The Public Notice period for this operating permit is tentatively schedule to begin in June 2011 or is in process.

DATE OF FACT SHEET: JUNE 13, 2011
COMPLETED BY:
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NPDES PERMITS UNIT
PERMITTING AND ENGINEERING SECTION
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Part VII – Appendices

APPENDIX # A – RPA RESULTS:

Parameter	CMC*	RWC Acute*	CCC*	RWC Chronic*	n**	CV***	RP Yes/No
Arsenic	340.0000	6.4459	20.0000	0.0225	128	0.5911	NO
Beryllium	4.0000	0.2317	4.0000	0.0008	98	0.6417	NO
Cadmium	8.2298	0.2318	0.3865	0.0008	98	0.6483	NO
Chromium	15.2749	0.8044	10.3950	0.0028	98	0.5396	NO
Copper	22.0483	0.9579	14.0884	0.0033	98	0.4818	NO
Iron	1000.0000	45.9826	1000.0000	0.1608	128	1.0201	NO
Lead	150.8162	0.8161	5.8809	0.0029	98	1.1998	NO
Mercury	2.8235	0.0230	0.5000	0.0001	98	0.3934	NO
Nickel	706.0976	7.4138	78.4989	0.0259	98	0.7732	NO
Total Cyanide	22.0000	12.1866	5.0000	0.0426	128	0.8809	NO
Zinc	173.1771	1.3465	180.3200	0.0047	98	0.7515	NO
Amenable Cyanide	22.0000	16.6783	5.0000	0.0583	98	1.3670	NO
1, 1 Dichloroethene	3.2000	0.2377	3.2000	0.0008	20	1.1827	NO
Benzene	5.0000	0.4296	5.0000	0.0015	20	1.3571	NO
Carbon Tetrachloride	5.0000	0.4032	5.0000	0.0014	20	1.2704	NO
Chloroform	5.7000	0.4187	5.7000	0.0015	20	1.3213	NO
Ethylbenzene	320.0000	0.4461	320.0000	0.0016	20	1.4112	NO
Halogenated Benzene	75.0000	0.2942	75.0000	0.0010	33	0.4801	NO
Methylene Chloride	4.7000	0.3806	4.7000	0.0013	20	1.1959	NO
Toluene	1000.0000	0.3832	1000.0000	0.0013	31	1.2044	NO
Trichloroethanes	0.5900	0.5173	0.5900	0.0018	17	1.4718	NO
Vinyl Chloride	2.0000	0.4087	2.0000	0.0014	20	1.2885	NO
2,4,6-Trichlorophenol	2.0000	8.9952	2.0000	0.0315	21	2.0363	**YES**
2,4-Dimethylphenol	540.0000	82.6203	540.0000	0.2889	21	3.5752	NO
2,4-Dichlorophenol	77.0000	2.4500	77.00000	0.0086	21	1.6202	NO
Total Phenol	100	255.1461154	100	0.892182775	20	3.1997361	**YES**
Dichloroethanes	5	0.033788316	5	0.000118149	15	0.5592774	NO
NH3Total Ammonia as Nitrogen (Summer) in mg/L	12.10	3.1261	1.50	0.01	10	0.9795658	NO
NH3Total Ammonia as Nitrogen (Winter) in mg/L	12.10	9.05	3.10	0.02	8	.6	NO

* - Units are (µg/L) unless otherwise noted.
** - If the number of samples is greater than 10, then the CV value must be used in the WQBEL for the applicable constituent.
*** - Coefficient of Variation (CV) is calculated by dividing the Standard Deviation of the sample set by the Mean of the same sample set.
RWC – Receiving Water Concentration. It is the concentration of a toxicant or the parameter toxicity in the receiving water after mixing (if applicable).
n – Is the number of samples.
RP – Reasonable Potential. It is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors including, as a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii).

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