

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-0002348

Owner: OM Group, Inc.
Address: 127 Public Square, 1500 Key Tower, Cleveland, OH 44114

Continuing Authority: EaglePicher Technologies, LLC
Address: PO Box 47, Joplin, MO 64801

Facility Name: EaglePicher Technologies, LLC
Address: C & Porter Street, Joplin, MO 64801

Legal Description: See page two
UTM Coordinates: See page two

Receiving Stream: See page two
First Classified Stream and ID: See page two
USGS Basin & Sub-watershed No.: See page two

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

FACILITY DESCRIPTION

See Page Two (2)

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

November 15, 2010 September 25, 2013
Effective Date Modified Date



Sarah Parker Pauley, Director, Department of Natural Resources

November 14, 2015
Expiration Date



John Madras, Director Water Protection Program

Facility Description (continued)

Outfall #001 – Industry - SIC #3691, 3692

Stormwater runoff from battery manufacturing plant.

Design flow is 3.5 MGD.

Actual flow is precipitation dependent.

Legal Description: NE ¼, SW ¼, NW ¼, Sec. 03, T27N, R33W, Jasper County

UTM Coordinates: x= 364617; y= 4106688

Receiving Stream: Lone Elm Creek (U)

First Classified Stream and ID: Turkey Creek (P)(03216) 303(d)

USGS Basin & Sub-watershed No.: (11070207-160020)

Outfall S1- Receiving Stream Monitoring Location

Downstream Monitoring Location on NW Murphy Blvd and Lone Elm Creek Bridge

Legal Description: SE ¼, NW ¼, NE ¼, Sec. 03, T27N, R33W, Jasper County

UTM Coordinates: x= 364665; y= 4106877

Receiving Stream: Lone Elm Creek (U)

First Classified Stream and ID: Turkey Creek (P)(03216) 303(d)

USGS Basin & Sub-watershed No.: (11070207-160020)

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 interim effluent limitations shall become effective upon issuance and remain in effect until three (3) years 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 LIMITS			MONITORING REQUIREMENTS	
		Daily Maximum	Weekly Average	Monthly Average	Monitoring Frequency	Sample Type
Outfall 001 (Note 1)						
Total Suspended Solids	mg/L	*		*	once/month	grab
Cadmium, Total Recoverable	µg/L	*		*	once/month	grab
Copper, Total Recoverable	µg/L	*		*	once/month	grab
Lead, Total Recoverable	µg/L	80			once/month	grab
Silver, Total Recoverable	µg/L	*		*	once/month	grab
Zinc, Total Recoverable	µg/L	1180			once/month	grab

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

FINAL EFFLUENT LIMITS FOR OUTFALL 001 ARE BELOW.

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 three (3) years from the effective date of this permit 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 LIMITS			MONITORING REQUIREMENTS	
		Daily Maximum	Weekly Average	Monthly Average	Monitoring Frequency	Sample Type
Outfall 001 (Note 1)						
Total Suspended Solids	mg/L	100		50	once/month	grab
Cadmium, Total Recoverable	µg/L	15		7.5	once/month	grab
Copper, Total Recoverable	µg/L	25.8		12.8	once/month	grab
Lead, Total Recoverable	µg/L	653.8		325.8	once/month	grab
Silver, Total Recoverable	µg/L	13.3		6.6	once/month	grab
Zinc, Total Recoverable	µg/L	290.6		144.8	once/month	grab

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE December 28, 2013. 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.

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 LIMITS			MONITORING REQUIREMENTS	
		Daily Maximum	Weekly Average	Monthly Average	Monitoring Frequency	Sample Type
Outfall 001 (Note 1)						
Flow	MGD	*		*	once/month	24 hr. estimate
pH	SU	**		**	once/month	grab
Oil & Grease	mg/L	15		10	once/month	grab
Hardness as CaCO ₃	mg/L	*		*	once/month	grab
Precipitation	inches	*		*	once/month	24 hr. estimate

MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE December 28, 2010. 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 #12	once/year in June	grab
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MONITORING REPORTS SHALL BE SUBMITTED ANNUALLY; THE FIRST REPORT IS DUE JULY 28, 2011.

Instream Monitoring- In Lone Elm Creek, below outfall, concurrent with effluent sampling

Hardness as CaCO ₃	mg/L	*	*	once/month	grab
Lead, Total Recoverable	µg/L	*	*	once/month	grab
Zinc, Total Recoverable	µg/L	*	*	once/month	grab

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

B. STANDARD CONDITIONS

IN ADDITION TO THE 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

Note1- Storm water samples shall be collected within the first 60 minutes of storm events of 0.1 inches or greater, that result in a discharge. Storm events include rainfall as well as run-off from the melting of frozen precipitation.

C. SPECIAL CONDITIONS

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

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

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

3. 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) To the extent required by law, 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.

C. SPECIAL CONDITIONS

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 issuance of coverage under this permit. The SWPPP must be kept on-site and should not be sent to DNR unless specifically requested. 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:

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.

The SWPPP must include the following:

- (a) An assessment of all storm water discharges associated with this facility. This must include a list of potential contaminants and an annual estimate of amounts that will be used in the described activities.
- (b) 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.
- (c) The SWPPP must include a schedule for monthly site inspections and a brief written report. The inspections must include observation and evaluation of BMP effectiveness, deficiencies, and corrective measures that will be taken. The Department must be notified within fifteen (15) days by letter of any corrections of deficiencies. Deficiencies that consist of minor repairs or maintenance must be corrected within seven (7) days. Deficiencies that require additional time or installation of a treatment device to correct should be detailed in the written notification. Installation of a treatment device, such as an oil water separator, may require a construction permit. Inspection reports must be kept on site with the SWPPP. These must be made available to DNR personnel upon request.
- (d) A provision for designating an individual to be responsible for environmental matters.
- (e) 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 solid waste from entry into waters of the state.
- (e) Provide sediment and erosion control sufficient to prevent or control sediment loss off of the property.

8. The purpose of the SWPPP and the BMPs listed therein is to prevent pollutants from entering waters of the state. A deficiency of a BMP means it was not effective in preventing pollution [10 CSR20-2.010(56)] of waters of the state, or failed to achieve compliance with benchmarks. Corrective action 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 all hydrocarbon parameters listed in Effluent Limitations and Monitoring Requirements. Water shall be taken to a WWTP for treatment before release if it does not meet state requirements.

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.

C. SPECIAL CONDITIONS

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

SUMMARY OF ACUTE WET TESTING FOR THIS PERMIT				
OUTFALL	AEC	FREQUENCY	SAMPLE TYPE	MONTH
001	100%	once/year	grab	June

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

(a) Test Schedule and Follow-Up Requirements

- (1) Perform a MULTIPLE-dilution acute WET test in the months and at the frequency specified above. For tests which are successfully passed, submit test results using the Department's WET test report form #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
 - (a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
 - (b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
 - (c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
 - (d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
 - (e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
 - (f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
 - (h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.
 - (i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
 - (j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
 - (k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
 - (l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
 - (m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.
- (2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
- (3) If the effluent fails the test, a multiple dilution test shall be performed for BOTH test species within 30 calendar days and biweekly thereafter (for storm water, tests shall be performed on the next and subsequent storm water discharges as they occur, but not less than 7 days apart) until one of the following conditions are met:
 - (a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
 - (b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
- (4) Failure of at WET tests is a violation of this permit.

C. SPECIAL CONDITIONS

12. WET tests (continued)

- (5) 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.
 - (6) 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.
 - (7) 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.
 - (8) 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.
 - (9) Submit a concise summary in tabular format of all WET test results with the annual report.
- (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 LC₅₀ 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. Failure of one multiple-dilution test may be considered an effluent limit violation.
- (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) 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, ½ AEC and ¼ 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.

D. SCHEDULE OF COMPLIANCE

The facility shall attain compliance with final effluent limitations as soon as reasonably achievable or no later than **3 years** of the effective date of this permit.

1. Within six months of the effective date of this permit, the permittee shall report progress made in attaining compliance with the final effluent limits.
2. The permittee shall submit interim progress reports detailing progress made in attaining compliance with the final effluent limits every 12 months from issuance date.
3. Within **3 years** of the effective date of this permit, the permittee shall attain compliance with the final effluent limits.

Please submit progress reports to the Missouri Department of Natural Resources, Southwest Regional Office, 2040 W. Woodland Blvd, Springfield, Missouri, 63901.

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 MODIFICATION
OF
MO-0002348
NEW EAGLE PICHER TECHNOLOGIES

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: IND-Stormwater
Facility SIC Code(s): 3691, 3692

Application Date: 12/13/2007
Expiration Date: 05/01/2008
Last Inspection: 07/14/2009 Non-Compliance
05/21/2010 In-Compliance

Facility Description:

EaglePicher Technologies, LLC is a producer of batteries and energetic devices for the defense, space and commercial industries. EaglePicher Technologies, LLC produces the following types of batteries at the subject facility: lithium thionyl chloride; silver zinc; and, thermal. In addition, EaglePicher Technologies, LLC fabricates custom battery assemblies at the subject facility.

As a battery manufacturer, the permittee is subject to EPA's Effluent Limit Guidelines in 40 CFR 461. Process and domestic wastewater from the facility goes to the City of Joplin Turkey Creek Wastewater Treatment Plant (MO- 0103349) under Joplin's pretreatment program. The facility produces batteries that are subject to different sections of 40 CFR 461, as it is divided by subcategories. However, 40 CFR 461 is for process wastewater and does not provide an allowance for stormwater run-off. Best professional judgment, the ELGs, and Missouri Water Quality Standards were used to develop monitoring parameters and effluent limits. As this is a stormwater only permit, acute criteria was used to develop water quality based effluent limits (WQBEL), unless only chronic criteria exist. Please see the Derivation and Discussion section for the discussion of how the monitoring requirement and/or effluent limit was developed.

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

In 2005, EPA approved a total maximum daily load (TMDL) on Turkey Creek for zinc. In the TMDL, Eagle Picher was assigned a wasteload allocation (WLA), which was not incorporated into the 2006 modification. Also since the previous permit was issued, water quality standards have changed for the majority of the metals present in the stormwater runoff. In 2008, Turkey Creek was placed on the Missouri 303(d) list for lead and cadmium impairments, which are metals present at the facility. In 2010, Lone Elm was placed on the 2010 Missouri 303(d) list for metals. Lone Elm Creek and Turkey Creek are tributaries to Spring River, which has an EPA approved TMDL in Kansas for cadmium, copper, lead and zinc (June 26, 2005).

In the previous permit, there were two special conditions included that were removed in this renewal. Note 1 stated, "In the event that upstream concentrations collected concurrently with effluent sampling, exceeds water quality criteria for lead or zinc, these data shall be considered by the Department of Natural Resources in determining the significance of noncompliance with permit conditions." When evaluating noncompliance with permit conditions, the Department may look at precipitation data and other information available in determining the significance of noncompliance, but this requirement is not appropriate permit condition.

Note 2 stated, “Effluent lead concentrations exceeding 0.5 mg/L shall be allowed if concurrent monitoring at the downstream monitoring point does not exceed the instream acute criteria for dissolved lead at concurrent water hardness.” This permit condition did not meet the requirement of 10 CSR 20-7.031(4)(B). 10 CSR 20-7.031(4)(B)7A states the acute criteria shall not be exceeded at any time except in those waters for which the department has allowed a zone of initial dilution (ZID). This requirement is applicable to all pollutants of concern that have water quality based effluent limits. As EaglePicher discharges to an unclassified stream, mixing zones and zones of initial dilution are not allowed per 10 CSR 20-7.031(4)(A)4B(I). EaglePicher must meet the water quality based effluent limits at discharge.

Upstream monitoring was removed from the permit, however downstream monitoring remains as Lone Elm flows into an impaired stream. The previous permit had effluent limits for lead and zinc that varied depending on the stream hardness. Upon review of the previous five years of discharge monitoring reports and when subjecting the total hardness to the 25th percentile, the difference between the upstream and downstream 25th percentiles was 0.5 mg/L. To calculate water quality based effluent limits for hardness dependant metals, such as lead, the department used the 25th percentile of the upstream data.

In accordance with the federal anti-backsliding rules, Ammonia, Boron, Chemical Oxygen Demand, Chromium, Nickel, and Sulfate plus Chlorides were removed from monitoring following review of the discharge monitoring reports, as there is not reasonable potential to exceed water quality standards. Temperature monitoring requirement was removed in conjunction with the Ammonia monitoring requirement. Settleable Solids effluent limits were removed as there was not reasonable potential to exceed limits and as the proposed TSS effluent limits would be more stringent. Stream conductivity is affected by inorganic solids, such as chloride, sulfate, and nitrogen. With the ammonia, sulfate, and chloride not showing reasonable potential to exceed water quality standards, the requirement to monitor for specific conductivity is not required. The previous five years of stream conductivity shows that the conductivity is on the low end for stream conductivity in US streams, <http://www.epa.gov/volunteer/stream/vms59.html>. The May 21, 2010 inspection showed the removal of these parameters was reasonable, as the facility has worked to clean up the property, stores the majority of items inside without exposure to precipitation.

2013 Modification

As part of a settlement agreement Eagle-Picher conducted a Metals Translator Study to derive site-specific metals criteria for this permit. The results of that study are incorporated in this modification.

OUTFALL(S) TABLE:

OUTFALL	DESIGN FLOW (CFS)	TREATMENT LEVEL	EFFLUENT TYPE	DISTANCE TO CLASSIFIED SEGMENT (MI)
001	5.4	BMPs	Stormwater	1.2

Outfall #001 – Industry - SIC #3691 & 3692

Stormwater runoff from battery manufacturing facility.
 Legal Description: NE ¼, SW ¼, NW ¼, Sec. 03, T27N, R33W, Jasper County
 UTM Coordinates: x= 364617; y= 4106688
 Latitude/Longitude: +37.0967220/-094.52344
 Receiving Stream: Tributary to Lone Elm Creek (U)
 First Classified Stream and ID: Turkey Creek (P) (03216)
 USGS Basin & Sub-watershed No.: (11070207-160020)
 Design flow is 3.5 MGD.
 Mean flow based on 2005-2010 precipitation events: 1.1 MGD
 Actual flow is precipitation dependant. Outfall does not discharge except during precipitation events.

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

- Lead exceedances over hardness dependant criteria, but not exceeding the 0.5 mg/L condition in previous permit: 08/2008; 03/2008; 11/2006; 07/2006; 10/2005; 09/2005. Lead exceedances over 0.5 mg/L condition in previous permit: 03/2009; 02/2008
- pH exceedance: 10/2005
- Settleable Solids exceedance: 07/2005
- WET test failures: 06/2008; 06/2007

Part II – 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 seven (7) categories. Each category lists effluent limitations for specific parameters, which are presented in each outfall's Effluent Limitation Table and further discussed in the Derivation & Discussion of Limits section.

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

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**
Lone Elm Creek	U	--	General Criteria	11070207	Ozark/ Neosho
Turkey Creek	P	03216	AQL, LWW, WBC(B)***		

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

** - Ecological Drainage Unit

*** - UAA has not been conducted.

RECEIVING STREAM(S) LOW-FLOW VALUES TABLE:

RECEIVING STREAM (U, C, P)	LOW-FLOW VALUES (CFS)		
	1Q10	7Q10	30Q10
Lone Elm (U)	0.0	0.0	0.0

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

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

RECEIVING STREAM MONITORING REQUIREMENTS:

Receiving stream monitoring requirements were in previous permit. Upstream monitoring is not being required in this permit, however, downstream monitoring is retained. The receiving stream is a 303(d) stream with impairments based on lead, zinc, and cadmium due to the facility being located in a historic mining district and/or previous uses of these compounds at the facility.

Site 01 (Downstream)

PARAMETER(S)	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
Hardness as CaCO ₃ (mg/L)	once/month	grab	Lone Elm Creek approx. 200 ft from Lone Elm Road x= 364665; y= 4106877
Lead, Total Recoverable (µg/L)	once/month	grab	
Zinc, Total Recoverable (µg/L)	once/month	grab	

Part III – 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. In accordance with the federal anti-backsliding rules, Ammonia, Boron, Chemical Oxygen Demand, Chromium, Nickel, and Sulfate plus Chlorides were removed from monitoring following review of the discharge monitoring reports, as there is not reasonable potential to exceed water quality standards. Temperature monitoring requirement was removed in conjunction with the Ammonia monitoring requirement. Settleable Solids effluent limits were removed as there was not reasonable potential to exceed limits and as the proposed TSS effluent limits would be more stringent. Stream conductivity is affected by inorganic solids, such as chloride, sulfate, and nitrogen. With the ammonia, sulfate, and chloride not showing reasonable potential to exceed water quality standards, the requirement to monitor for specific conductivity is not required. The metals limits were calculated using new information from the Site-Specific metals translator study. Also, the water quality standard for zinc was changed in 2010, 4 years after the TMDL was approved. Therefore, the new water quality standard and the new metals translators were used to calculate zinc and as well as other metals limits for outfall 001. The previous five years of stream conductivity shows that the conductivity is on the low end for stream conductivity in US streams, <http://www.epa.gov/volunteer/stream/vms59.html>. The May 21, 2010 inspection showed the removal of these parameters was reasonable, as the facility has worked to clean up the property, stores the majority of items inside without exposure to precipitation.

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.

BIO-SOLIDS, SLUDGE, & SEWAGE SLUDGE:

Bio-solids are solid materials resulting from wastewater treatment that meet federal and state criteria for beneficial uses (i.e. fertilizer). Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. Sewage sludge is solids, semi-solids, or liquid residue generated during the treatment of domestic sewage in a treatment works; including but not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in a treatment works.

Not Applicable : This condition is not applicable to the permittee for this specific 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.

Not Applicable : The permittee, at this time, is not required to have a Pretreatment Program or does not have an approved pretreatment program. Eagle Picher is covered under the City of Joplin's Pretreatment Program for its domestic and process wastewater.

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

Not Applicable : An RPA was not conducted for this facility. Using best professional judgment and independent application, effluent limits were required for the majority of the pollutants. Also, under the categorical standards of 40 CFR 461, the majority of the pollutants are required to be monitored for.

REMOVAL EFFICIENCY:

Removal efficiency is a method by which the Federal Regulations define Secondary Treatment and Equivalent to Secondary Treatment, which applies to Biochemical Oxygen Demand 5-day (BOD₅) and Total Suspended Solids (TSS) for Publicly Owned Treatment Works (POTWs)/municipals. Please see the United States Environmental Protection Agency's (EPA) website for interpretation of percent removal requirements for National Pollutant Discharge Elimination System Permit Application Requirements for Publicly Owned Treatment Works and Other Treatment Works Treating Domestic Sewage @ www.epa.gov/fedrgstr/EPA-WATER/1999/August/Day-04/w18866.htm.

Not Applicable : Influent monitoring is not being required to determine percent removal.

SANITARY SEWER OVERFLOWS (SSOs), BYPASSES, INFLOW & INFILTRATION (I&I) – PREVENTION/REDUCTION:

Sanitary Sewer Systems (SSSs) are municipal wastewater collection systems that convey domestic, commercial, and industrial wastewater, and limited amounts of infiltrated groundwater and storm water (i.e. I&I), to a POTW. SSSs are not designed to collect large amounts of storm water runoff from precipitation events.

Untreated or partially treated discharges from SSSs are commonly referred to as SSOs. SSOs have a variety of causes including blockages, line breaks, sewer defects that allow excess storm water and ground water to overload the system, lapses in sewer system operation and maintenance, inadequate sewer design and construction, power failures, and vandalism. A SSOs is defined as an untreated or partially treated sewage release from a SSS. SSOs can occur at any point in an SSS, during dry weather or wet weather. SSOs include overflows that reach waters of the state. SSOs also include overflows out of manholes and onto city streets, sidewalks, and other terrestrial locations. SSSs can back up into buildings, including private residences. When sewage backups are caused by problems in the publicly-owned portion of an SSS, they are considered SSOs.

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.

Applicable : The time given for effluent limitations of this permit listed under Interim Effluent Limitation and Final Effluent Limitations were established in accordance with [10 CSR 20-7.031(10)]. Interim Effluent Limits are effective for a year to allow the permittee time to develop and implement the SWPPP and to make other changes to decrease metals present in the stormwater runoff. The previous permit had effluent limits for lead and zinc that varied based on stream hardness. For the interim limits, the previous permit limits for hardness less than 125 mg/L were used, based on the review of the discharge monitoring reports upstream and downstream of the outfall.

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.

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.

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. This facility was previously covered under a variance from 1992-1995 for lead and zinc effluent limits.

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:

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

Where C = downstream concentration
 C_s = upstream concentration
 Q_s = upstream flow
 C_e = effluent concentration
 Q_e = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration). 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) [TSD]. Section 5.5.3, pp.107-110 stipulate that when sampling frequency is once per month or less, a value of at least $n = 4$ to identify the LTA Multiplier that will be used for calculating Average Monthly Limits.

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 all facilities meeting the following criteria:**

- Facility has Water Quality-based Effluent Limitations for toxic substances (other than NH_3). This is a stormwater permit; however the facility had WET tests in their previous permits and did fail a number of WET tests, thus the annual WET test requirement remains.

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 : Turkey Creek is listed on the 2008 Missouri 303(d) List for bacteria, cadmium, lead, and zinc. Lone Elm Creek is on the 2010 Missouri 303(d) list for metals.

- This facility is considered to be a source of or has the potential to contribute to the above listed pollutant(s). EPA approved a Missouri TMDL for zinc on January 26, 2005. Eagle Picher is identified in the TMDL as a point source for the zinc impairment. The department is in the process of updating the TMDL to include cadmium, lead and zinc. Bacteria is believed to be from non-point sources. Information on the TMDL is available on the department's website: <http://dnr.mo.gov/env/wpp/tmdl/info/3216-3217-turkey-ck-info.pdf> and <http://dnr.mo.gov/env/wpp/tmdl/3203-center-3216-3217-turkey-cks-tmdl.pdf>. Turkey Creek flows into Kansas, which has an approved EPA TMDL for cadmium, copper, lead and zinc. The Kansas TMDL is available online: http://www.kdheks.gov/tmdl/download/spring_metals.pdf

Part IV – 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 supercedes the terms and conditions, including effluent limitations, of this operating permit.

EFFLUENT LIMITATIONS TABLE:

PARAMETER	UNIT	DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MODIFIED	PREVIOUS PERMIT LIMITATIONS
Flow	MGD	*		*	No	
Total Suspended Solids	mg/L	100		50	YES	*/*
pH	SU	**		**	YES	6.0-9.0
Oil & Grease	mg/L	15		10	No	
Precipitation	inches	*		*	YES	***
Cadmium, Total Recoverable	µg/L	15		7.5	YES	*/*
Copper, Total Recoverable	µg/L	25.8		12.8	YES	*/*
Lead, Total Recoverable	µg/L	653.8		325.8	YES	†
Silver, Total Recoverable	µg/L	13.3		6.6	YES	*/*
Zinc, Total Recoverable	µg/L	290.6		144.8	YES	†
WHOLE EFFLUENT TOXICITY (WET) TEST	% Survival	Please see WET Test in the Derivation and Discussion Section below.				

* - 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.

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

† - Previous effluent limits for lead and zinc varied based on stream hardness

OUTFALL #001 – DERIVATION AND DISCUSSION OF LIMITS:

- **Flow.** In accordance with [40 CFR Part 122.44(i)(1)(ii)] the volume of effluent discharged from each outfall is needed to assure compliance with permitted effluent limitations. If the permittee is unable to obtain effluent flow, then it is the responsibility of the permittee to inform the Department, which may require the submittal of an operating permit modification.
- **Total Suspended Solids (TSS).** 40 CFR 461 is the effluent limit guidelines for the battery manufacturing industry, which gives an effluent limit based on production for total suspended solids. The effluent limit guidelines do not provide an allowance for stormwater. Using best professional judgment, in conjunction with the TSS requirement in 40 CFR 461 and consistent with other stormwater permits in the state, the effluent limits are: Maximum daily limit of 100 mg/L and Average Monthly limit of 50 mg/L.
- **pH.** 10 CSR 20-7.031(4)(E) requires that discharges be between 6.5-9.0 standard units.
- **Oil & Grease.** There is an ELG in 40 CFR 461 for oil and grease in production process wastewater. There is not an ELG allowance for stormwater. In 10 CSR 20-7.031 Table A, there is an effluent limit provided for oil and grease, as it is a conventional pollutant. The effluent limitations for protection of aquatic life are 10 mg/L monthly average, 15 mg/L daily maximum.
- **Hardness as CaO₃.** Monitoring requirement only. Cadmium, Copper and Lead are hardness dependant.
- **Precipitation.** This discharge is dependant on precipitation received and thus is intermittent.

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 water hardness = 90.95 mg/L.

The permittee collected site-specific in-stream data for total recoverable metals, dissolved metals, hardness, and total suspended solids with which to calculate site-specific metals translators. The department’s Water Quality Monitoring and Assessment Section reviewed the study and approved the results.

METAL	TRANSLATORS
Cadmium	0.261
Copper	0.428
Iron	NA
Lead	0.080
Silver	0.185
Zinc	0.335

Conversion factors for Cd, Cu and Pb are hardness dependent. Values calculated using equation found in Section 1.3 of EPA 823-B-96-007 and hardness = 90.95 mg/L. Stream hardness is the 25th percentile of the upstream, in-stream monitoring performed by Eagle Picher Technologies from 2005-2010.

- **Cadmium, Total Recoverable.** 40 CFR 461 is the effluent limit guidelines for the battery manufacturing industry, which gives an effluent limit based on production for cadmium. The ELG does not provide a stormwater allowance for cadmium, thus the department used the WQS for effluent limits. The receiving stream is on the Missouri 2008 303(d) list for cadmium impairment. There is an approved TMDL in Kansas for Spring River and its tributaries, including Turkey Creek, for cadmium. Protection of Aquatic Life Chronic Criteria = 0.23 µg/L, Acute Criteria = 4.3 µg/L. Stormwater permit, acute criteria applicable. No mixing considerations allowed; therefore, WLA_a = appropriate criterion. A 10 % margin of safety (MOS) is being considered to account for any errors associated with field sampling and laboratory analysis.

$$\text{Acute} = 4.35/0.261 = 16.67 \text{ } \mu\text{g/L}$$

$$\text{MOS} = 16.67 (0.9) = 15.00$$

$$\text{LTA}_a = 15 (0.321) = 4.82 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 4.82 (3.11) = 15 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 4.82 (1.55) = 7.5 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Copper, Total Recoverable.** 40 CFR 461 is the effluent limit guidelines for battery manufacturing industry, which gives an effluent limit based on production for copper. The ELG does not provide a stormwater allowance for copper, thus the department used WQS for effluent limits and monitoring frequency. There is an approved TMDL in Kansas for Spring River and its tributaries, including Turkey Creek, for copper. Protection of Aquatic Life Chronic Criteria = 8.26 µg/L, Acute Criteria = 12.3 µg/L. Stormwater permit, acute criteria applicable. No mixing considerations allowed; therefore, WLA_a = appropriate criterion. A 10 % margin of safety (MOS) is being considered to account for any errors associated with field sampling and laboratory analysis.

$$\text{Acute} = 12.29/0.428 = 28.71 \text{ } \mu\text{g/L}$$

$$\text{MOS} = 28.71 (0.9) = 25.84$$

$$\text{LTA}_a = 25.84 (0.321) = 8.29 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 8.29 (3.11) = 25.8 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 8.29 (1.55) = 12.8 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Lead, Total Recoverable.** 40 CFR 461 is the effluent limit guidelines for battery manufacturing industry, which gives an effluent limit based on production for lead. The ELG does not provide a stormwater allowance for lead, thus the department used the WQS for effluent limits. The receiving stream is on the Missouri 2008 303(d) list for lead impairment. There is an approved TMDL in Kansas for Spring River and its tributaries, including Turkey Creek, for lead. Protection of Aquatic Life Chronic Criteria = 2.27 µg/L, Acute Criteria = 58.2 µg/L. Stormwater permit, acute criteria applicable. No mixing considerations allowed; therefore, WLA_a = appropriate criterion. A 10 % margin of safety (MOS) is being considered to account for any errors associated with field sampling and laboratory analysis.

$$\text{Acute} = 58.21/0.080 = 727.63 \text{ } \mu\text{g/L}$$

$$\text{MOS} = 727.63 (0.9) = 654.87$$

$$\text{LTA}_a = 654.87 (0.321) = 210.21 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 210.21 (3.11) = 653.8 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 210.21 (1.55) = 325.8 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Silver, Total Recoverable.** 40 CFR 461 is the effluent limit guidelines for battery manufacturing industry, which gives an effluent limit based on production for silver. The ELG does not provide a stormwater allowance for silver, thus the department used WQS for effluent limits. Protection of Aquatic Life Acute Criteria = 2.74 µg/L. Stormwater permit, acute criteria applicable. No mixing considerations allowed; therefore, WLA_a = appropriate criterion. A 10 % margin of safety (MOS) is being considered to account for any errors associated with field sampling and laboratory analysis.

$$\text{Acute} = 2.74/0.185 = 14.81 \text{ } \mu\text{g/L}$$

$$\text{MOS} = 14.81 (0.9) = 13.33$$

$$\text{LTA}_a = 13.33 (0.321) = 4.28 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{MDL} = 4.28 (3.11) = 13.3 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 99^{\text{th}} \text{ Percentile}]$$

$$\text{AML} = 4.28 (1.55) = 6.6 \text{ } \mu\text{g/L}$$

$$[\text{CV} = 0.6, 95^{\text{th}} \text{ Percentile}, n = 4]$$

- **Zinc, Total Recoverable.** 40 CFR 461 is the effluent limit guidelines for battery manufacturing industry, which gives an effluent limit based on production for zinc. The ELG does not provide a stormwater allowance for zinc, thus the department used WQS for effluent limits. The water quality standard for zinc has changed since the previous permit and Missouri TMDL was issued. There is an approved TMDL in Kansas for Spring River and its tributaries, including Turkey Creek, for zinc. Protection of Aquatic Life Chronic Criteria = 108.4 µg/L, Acute Criteria = 108.4 µg/L. Stormwater permit, acute criteria applicable. No mixing considerations allowed; therefore, WLA_a = appropriate criterion. A 10 % margin of safety (MOS) is being considered to account for any errors associated with field sampling and laboratory analysis.

Acute = 108.35/0.335 = 323.43 µg/L

MOS = 323.43 (0.9) = 291.09

LTA_a = 291.09 (0.321) = 93.43 µg/L

MDL = 93.43 (3.11) = 290.6 µg/L

AML = 93.43 (1.55) = 144.8 µg/L

[CV = 0.6, 99th Percentile]

[CV = 0.6, 99th Percentile]

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

- **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 is designated as a Major facility or has a design flow ≥ 1.0 MGD.

Facility has Water Quality-based effluent limitations for toxic substances (other than NH₃).

Allowable Effluent Concentrations (AECs) for facilities that discharge to unclassified streams are 100%, 50%, 25%, 12.5%, & 6.25%.

- **Minimum Sampling and Reporting Frequency Requirements.** Monitoring and sampling frequency have been retained from previous operating permit.

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

- The Public Notice period for this operating permit was from August 9, 2013 to September 9, 2013. There were no comments received.

DATE OF FACT SHEET: MAY 29, 2013

COMPLETED BY:

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