



**Minnesota Pollution  
Control Agency**

520 Lafayette Road North  
St. Paul, MN 55155-4194

# Alum or Ferric Chloride Phosphorus Treatment System Form

Attachment to 2013 MS4 SWPPP  
Application for Reauthorization for the NPDES/SDS  
Small MS4 General Permit MNR040000  
Stormwater Pollution Prevention Program (SWPPP) Document

*Doc Type: Permit Application*

**Instructions:** Only complete this form if your Municipal Separate Storm Sewer System (MS4) uses an alum or ferric chloride phosphorus treatment system for stormwater. Refer to Part III.F. of National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Small MS4 General Permit MNR040000 with an effective date of August 1, 2013, for alum or ferric chloride phosphorus treatment system requirements. In-lake phosphorus treatment activities are not authorized under this application attachment to the 2013 MS4 SWPPP Application for Reauthorization (SWPPP Document).

**Submittal:** This form must be submitted electronically via e-mail to the Minnesota Pollution Control Agency (MPCA) at [ms4permitprogram.pca@state.mn.us](mailto:ms4permitprogram.pca@state.mn.us) from the person that is duly authorized to certify this form. Submit this form along with the 2013 MS4 SWPPP Application for Reauthorization (SWPPP Document). Title your form appropriately, such as: *MS4NameHere\_TreatmentSystem.doc*.

**Questions:** Contact Claudia Hochstein at 651-757-2881 or [claudia.hochstein@state.mn.us](mailto:claudia.hochstein@state.mn.us), Dan Miller at 651-757-2246 or [daniel.miller@state.mn.us](mailto:daniel.miller@state.mn.us), or call toll-free at 800-657-3864.

## General Information

1. Provide the geographic coordinates of the alum or ferric chloride phosphorus treatment system, in decimal degrees.  
(Approximate centroid of treatment system within five-foot accuracy):  
Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_
2. Provide the name or the position title of the individual(s) who is responsible for the operation of the treatment system:
3. If the system is constructed at the time the 2013 MS4 SWPPP Application for Reauthorization (SWPPP Document) is submitted to the MPCA, provide the following information:
  - a. Dates of operation: \_\_\_\_\_
  - b. Chemical(s) used for treatment: \_\_\_\_\_
  - c. Gallons of water treated: \_\_\_\_\_
  - d. Gallons of alum or ferric chloride treatment used: \_\_\_\_\_
  - e. Calculated pounds of phosphorus removed: \_\_\_\_\_
  - f. Any performance issue(s) and the corrective action(s), including the date(s) when corrective action(s) was taken:

## Alum or Ferric Chloride Phosphorus Treatment System Permit Requirements

Answer **yes** or **no** below to indicate if your alum or ferric chloride phosphorus treatment system meets the following requirements in the Permit (Part III.F.1.):

4. Minimum requirements of an Alum or Ferric Chloride Phosphorus Treatment System:

- a. Limitations

- 1) Is your treatment system **only used** for the treatment of phosphorus in stormwater (non-stormwater discharges shall not be treated by this system)?

☐ Yes ☐ No

\*If no, contact MPCA MS4 Permit Program staff for appropriate next steps.

- 2) Is your treatment system contained within the conveyances and structural stormwater Best Management Practices (BMPs) of a small MS4 (the utilized conveyances and structural stormwater BMPs shall not include any receiving waters)? ☐ Yes ☐ No

\*If no, contact MPCA MS4 Permit Program staff for appropriate next steps.

- 3) Does your treatment system utilize chemicals other than alum or ferric chloride? ☐ Yes ☐ No

\*If yes, you must receive written approval from the MPCA. Contact MPCA MS4 Permit Program staff for appropriate next steps.

- 4) Does your treatment system include in-lake phosphorus treatment activities? ☐ Yes ☐ No

\*If yes, in-lake phosphorus treatment is not authorized under this permit. Contact MPCA MS4 Permit Program staff for appropriate next steps.

b. Treatment system design

- 1) Is your treatment system constructed in a manner that diverts the stormwater flow away from the main conveyance system for treatment? ☐ Yes ☐ No

- 2) Is a High Flow Bypass part of the inlet design for your treatment system? ☐ Yes ☐ No

- 3) Does your treatment system include a flocculent storage/settling area incorporated into the design, and adequate maintenance access provided (minimum of eight-feet wide) for the removal of accumulated sediment? ☐ Yes ☐ No

If you answered **no** to any of the above permit requirements in 4.b.1) – 3) (Treatment System Design), describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

Answer **yes** or **no** below to indicate if your alum or ferric chloride phosphorus treatment system meets the following requirements in the Permit:

c. Monitoring

- 1) During operation, does your treatment system have a designated responsible person performing visual monitoring of the treatment system for proper performance at least once every seven (7) days, and within 24 hours after a rainfall event greater than 2.5 inches in 24 hours? ☐ Yes ☐ No

- 2) Following visual monitoring which occurs within 24 hours after a rainfall event, do you conduct the next visual monitoring of your system seven (7) days after that rainfall event? ☐ Yes ☐ No

- 3) Does your treatment system utilize three benchmark monitoring stations? Table B-1(Monitoring Parameters During Operation) in the Permit shall be used for the parameters, units of measure, and frequency of measurement for each station. ☐ Yes ☐ No

- 4) Do you collect grab samples or flow-weighted 24-hour composite samples at your treatment system? ☐ Yes ☐ No

- 5) Are your treatment system samples, excluding pH samples, analyzed by a certified laboratory by the Minnesota Department of Health and or the MPCA? ☐ Yes ☐ No

- (a) Do your sample preservation and test procedures for the analysis of pollutants conform to 40 CFR Part 136 and Minn. R. 7041.3200? ☐ Yes ☐ No

- (b) Are your detection limits for dissolved phosphorus, dissolved aluminum, and dissolved iron at a minimum of 6 micrograms per liter (µg/L), 10 µg/L, and 20 µg/L, respectively? ☐ Yes ☐ No

- (c) Do you measure pH within 15 minutes of sample collection using properly calibrated and maintained equipment? ☐ Yes ☐ No

- 6) In the following situations, will you perform corrective actions and immediately notify the Minnesota Department of Public Safety Duty Officer, if:

- (a) The pH of the discharged water is not within the range of 6.0 and 9.0? ☐ Yes ☐ No

- (b) There are any indications of toxicity or measurements exceeding water quality standards? ☐ Yes ☐ No

- (c) There is a spill, as defined in Minn. Stat. § 115.01, subd. 13, of alum or ferric chloride. ☐ Yes ☐ No

If you answered **no** to any of the above permit requirements in 4.c.1) – 6), describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

Answer **yes** or **no** to indicate whether you have a record of the following design parameters on-site:

5. On-Site recordkeeping

- a. Do you have site-specific jar testing conducted using typical and representative water samples in accordance with ASTM D2035-08 (2003) at your treatment system location? ☐ Yes ☐ No
- b. Do you have baseline concentrations of the following parameters in the influent and receiving waters at your treatment system location?
- 1) Aluminum or iron. ☐ Yes ☐ No
- 2) Phosphorus. ☐ Yes ☐ No
- c. Do you have the following system parameters and how each was determined on-site at your treatment system?
- 1) Flocculent settling velocity. ☐ Yes ☐ No
- 2) Minimum required retention time. ☐ Yes ☐ No
- 3) Rate of diversion of stormwater into the system. ☐ Yes ☐ No
- 4) The flow rate from the discharge of the outlet structure. ☐ Yes ☐ No
- 5) Range of expected dosing rates. ☐ Yes ☐ No
- d. Treatment System Management. Site-specific procedures shall be developed and a copy kept on-site.
- 1) Do you have a copy of procedures on-site for the installation, operation, and maintenance of all pumps, generators, control systems, and other equipment? ☐ Yes ☐ No
- 2) Do you have a copy of procedures on-site for determining when the solids must be removed from the system and how the solids will be handled and disposed of? ☐ Yes ☐ No
- 3) Do you have a copy of procedures on-site for cleaning up and/or containing a spill of each chemical stored on site? ☐ Yes ☐ No

If you answered **no** to any of the above permit requirements in 5.a. – d., describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

**Add any Additional Comments**

---