

Maintenance Plan for Permanent Water Quality  
Best Management Practices (BMP's) within the  
Meadows at Chandler Creek MUD

**Construction and Acceptance of Improvements:**

Upon construction completion of water quality facilities by the Developer and subsequent acceptance by Meadows at Chandler Creek MUD, the District will be responsible for the operations and maintenance of such facilities.

**Contact Information for Party Responsible for BMP's**

Meadows at Chandler Creek MUD

Inframark

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**Basin Maintenance**

A common sign of failure of some BMPs is standing water long after the rain event ends. This is especially true in detention basins. In addition, wet ponds may also need to be drained for maintenance purposes. The water in each of these systems can be pumped into the storm drain conveyance system downstream of the BMP as long as it has been at least 48 hours since the last rain event. This delay usually provides sufficient time for most of the pollutants to settle out of the standing water; however, the discharge of sediment laden water is not allowed at any time.

**Sediment Disposal**

Stormwater pollutants include a variety of substances that are deposited on pervious and impervious surfaces and then transported by the next rainfall. In addition, there may be connections to the stormwater system that should go to the sanitary sewer system in older urbanized areas. Consequently, a variety of contaminants that may be classified as hazardous or toxic may enter stormwater management systems. These contaminants include heavy metals, petroleum hydrocarbons, pesticides, and a variety of organic chemicals. Consequently, several federal and state laws and regulations may apply to the disposal of sediments which accumulate in stormwater systems or which are captured by street sweepers (Livingston et al., 1997).

## Detention

Detention basins have moderate to high maintenance requirements, depending on the extent to which future maintenance needs are anticipated during the design stage. Responsibilities for both routine and nonroutine maintenance tasks need to be clearly understood and enforced. If regular maintenance and inspections are not undertaken, the basin will not achieve its intended purposes.

There are many factors that may affect the basin's operation and that should be periodically checked. These factors can include mowing, control of pond vegetation, removal of accumulated bottom sediments, removal of debris from all inflow and outflow structures, unclogging of orifice perforations, and the upkeep of all physical structures that are within the detention pond area. One should conduct periodic inspections and after each significant storm. Remove floatables and correct erosion problems in the pond slopes and bottom. Pay particular attention to the outlet control perforations for signs of clogging. If the orifices are clogged, remove sediment and other debris. The generic aspects that must be considered in the maintenance plan for a detention facility are as follows:

- *Inspections.* Basins should be inspected at least twice a year (once during or immediately following wet weather) to evaluate facility operation. When possible, inspections should be conducted during wet weather to determine if the pond is meeting the target detention times. In particular, the extended detention control device should be regularly inspected for evidence of clogging, or conversely, for too rapid a release. If the design drawdown times are exceeded by more than 24 hours, then repairs should be scheduled immediately. The upper stage pilot channel, if any, and its flow path to the lower stage should be checked for erosion problems. During each inspection, erosion areas inside and downstream of the BMP should be identified and repaired or revegetated immediately.
- *Mowing.* The upper stage, side slopes, embankment, and emergency spillway of an extended detention basin must be mowed regularly to discourage woody growth and control weeds. Grassy areas in and around basins should be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing of grass is performed, a mulching mower should be used, or grass clippings should be caught and removed.
- *Debris and Litter Removal.* Debris and litter will accumulate near the extended detention control device and should be removed during regular mowing operations and

inspections. Particular attention should be paid to floating debris that can eventually clog the control device or riser.

- *Erosion Control.* The pond side slopes, emergency spillway, and embankment all may periodically suffer from slumping and erosion, although this should not occur often if the soils are properly compacted during construction. Regrading and revegetation may be required to correct the problems. Similarly, the channel connecting an upper stage with a lower stage may periodically need to be replaced or repaired.

- *Structural Repairs and Replacement.* With each inspection, any damage to the structural elements of the system (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. These repairs should include patching of cracked concrete, sealing of voids, and removal of vegetation from cracks and joints. The various inlet/outlet and riser works in a basin will eventually deteriorate and must be replaced. Public works experts have estimated that corrugated metal pipe (CMP) has a useful life of about 25 yrs, whereas reinforced concrete barrels and risers may last from 50 to 75 yrs.

- *Nuisance Control.* Standing water (not desired in a detention basin) or soggy conditions within the lower stage of the basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing, debris removal, clearing the outlet control device).

- *Sediment Removal.* When properly designed, dry detention basins will accumulate quantities of sediment over time. Sediment accumulation is a serious maintenance concern in extended detention dry ponds for several reasons. First, the sediment gradually reduces available stormwater management storage capacity within the basin. Second, sediment accumulation can make dry extended detention basins very unsightly. Third, and perhaps most importantly, sediment tends to accumulate around the control device. Sediment deposition increases the risk that the orifice will become clogged, and gradually reduces storage capacity reserved for pollutant removal. Sediment can also be resuspended if allowed to accumulate over time and escape through the hydraulic control to downstream channels and streams. For these reasons, accumulated sediment needs to be removed from the lower stage when sediment buildup fills 20% of the volume of the basin or at least every 10 years.

### **Hazardous Material Spills**

- *Hazardous Material Spills.* Non-storm water discharges are not expected from this site. After construction, in case of a hazardous material spill, the District's Operator, Inframark LLC., will be required to close valves from the discharge lines. A valve key shall be carried in all maintenance vehicles operating in the District at all times. The valve shall be fully shut-off. Shut-off is in the counter-clockwise direction.

## **MAINTENANCE FORMS**



FACILITY: Meadows At Chandler Creek MUD	PAGE: 1 of 3	REVISION NUMBER:
MANUAL NAME: Inframark LLC		REVISION DATE:
DOCUMENT TITLE: SWMP Training Requirements for Annual Reporting in Accordance of TPDES General Permit NO. TXR040000		ORIGINATION DATE: 1-24-2019
DOCUMENT NO: MCC-AUSTIN-TX-WWOPS-003	DOCUMENT AUTHOR: Tobin J Hurley	APPROVER: Bill Fry

## SWMP Training Requirements for Annual Reporting in Accordance of TPDES General Permit No. TXR040000

### PURPOSE

The purpose of the annual report is to inform TCEQ of the status of compliance with permit conditions including, the appropriateness of selected best management practices (BMPs) and the progress towards achieving the measurable goals for each BMP.

### SCOPE

This procedure shall apply to all office and field staff working for MCC MUD. The definitions and procedures must be followed to ensure compliance with SWMP permit.

### DEFINITIONS

Annual report – Within 90 days of the end of each reporting year, the general manager must submit an annual report to the Texas Commission on Environmental Quality (TCEQ). An annual report must be submitted even if the SWMP has not yet been approved by the TCEQ or tasks are not yet complete.

- a. The reporting timeline for MCC MUD follows the calendar year which is January 1 to December 31. Refer to chart below for times periods and report submittal dates.

Annual Report Time Periods	Report Must be Submitted by:
1/1/2019	<b>12/31/2025</b>

Training – Storm Water Management training is to be conducted as follows:

- a. Review of the permit with field staff is to be completed bi-annually at a weekly safety meeting. Any staff that is not in attendance will receive training the following week as their work schedule permits.
- b. All newly hired staff performing tasks in the District will be trained by the Manager of the District.
- c. Office Administration who perform tasks for the District will be trained on the reporting requirements that relate to resident inquires. This is to include slide

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Presentations, statement inserts, information posted on the website and marketing materials.

## RESPONSIBILITY

The District Management Company is responsible for:

- a. Ensure all employees working in the District receive training related to annual reporting procedures.
- b. Conduct a goal setting meeting with the Stormwater Committee to achieve all the requirement defined in the Storm Management Plan.
- c. Report on the status and any compliance issues monthly to the Stormwater Committee and Board meetings.
- d. The Manager of the District will meet with the field staff annually review the Stormwater management Program (SWMP) in conjunction with the preparation of the annual report.
- e. Each year, the Management Company will sign certify the annual report in accordance with 30 TAC §305.128.

## PROCEDURES FOR ANNUAL REPORTING

- 1) Provide a brief description on the status of complying with permit conditions according to Part V of the permit. Include compliance with the SWMP that TCEQ approved, compliance with record keeping and reporting requirements, and compliance with permit eligibility requirements.
- 2) Assess the appropriateness of the BMPs in reducing the discharge of pollutants to the maximum extent practicable (MEP). Provide a general assessment of the appropriateness of the selected BMPs, including whether any of the selected BMPs are not appropriate.
- 3) Describe progress towards reducing the discharge of pollutants. Summarize any information used to evaluate reductions in the discharge of pollutants. This information can be included in a tabular format.
- 4) Provide a general evaluation of the success of the implementation of the measurable goals, including any obstacles or challenges in meeting the SWMP schedule, etc.
- 5) If applicable, explain in the worksheets or attach a summary of any activates taken to address any discharges to impaired systems (include the source of the date) and a summary of the small MS4's BMPs used to address the pollutant of concern.



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- a) Data may be acquired from TCEQ, local river authorities, partnerships, and/or other local efforts as appropriate.
  - b) Indicate information about implementing targeted controls.
  - c) Report the benchmark and assessment activities. Annual reports should include the benchmark and the year(s) during the permit term that the MS4 conducted additional sampling or other assessment activities.
  - d) Add and analysis of how the selected BMPs will be effective in contributing to achieving the benchmark.
- 6) If changes have been made or are proposed to the SWMP, those modifications must be addressed in the annual report if the TCEQ has notified The District in writing that changes to the SWMP are necessary, those changes must be included in the report. Provide the following information in the explanation: 1. Describe changes made to or proposed for the SWMP during the reporting year, including changes to BMPs, measurable goals, dates, contacts, procedures or details during the permit year. 2. If changes include additions or substitutions of BMPs, include a written analysis explaining why the original BMP is expected to achieve the goals of the original BMP.
  - 7) Provide the number of construction projects in the jurisdiction of the MS4 where the permittee was not the construction site operator (as provided in submittals to the MS4 operator via notices of intent or site notices).
  - 8) The annual report must be certified and signed by a principal executive officer or ranking elected official, or by a duty authorized representative as referenced in 30 TAC §305.128.
  - 9) A cover letter must be included with the submittal of the annual report. Refer to the information provided by the online TCEQ website for information that is to be included in the cover letter:  
[https://www.tceq.texas.gov/assets/public/assistance/sblga/ms4\\_annual\\_report.pdf](https://www.tceq.texas.gov/assets/public/assistance/sblga/ms4_annual_report.pdf)

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## REFERNCE MATERIALS AND EXAMPLES

Updated samples and additional information regarding the SWMP reporting process can be found online:

[https://www.tceq.texas.gov/assets/public/assistance/sblga/ms4\\_annual\\_report.pdf](https://www.tceq.texas.gov/assets/public/assistance/sblga/ms4_annual_report.pdf)

Exhibit A – Annual Reporting Requirement for Phase II (Small) MS4s TPDES General permit Number TXR040000

Exhibit B – Example of a status report for BMP

Exhibit C – Builders Construction violation Report

Exhibit D – Best Management Practices within MCC MUD

Exhibit E – Storm Water Plan for Williamson Counties Municipal Utility District No. 1 Permit Number TXR040000

Exhibit F – Notice of Intent for MCC MUD