**Dry Well**

**Dry Well #\_\_\_ on the Location Map**

Development Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Township, County: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Location of Dry Well: X: \_\_\_\_\_\_; Y: \_\_\_\_\_\_ (or N: \_\_\_\_\_\_; E :\_\_\_\_\_)

Location Description: e.g., Northwest corner of the development, near County RT 531

Location Map

|  |
| --- |
| N  E  County Route 531  **Discharge**  Grass Swale #1  Basin #1  Drywell #1  Corporation Road  Building  Parking  Lot    Vegetative Filter strip #1  Drywell #2  Access  Grass Swale #2 |

Example Map: Use aerial photo, site plan, or other graphics showing the locations of BMPs

**NOTE**

**This Field Manual is intended to be editable and adjustable in accordance with the design of stormwater management measures, the site conditions, and the special needs of responsible party. The Engineer should supplement information and best management practice to assist the responsible party to perform maintenance.**

Blue text indicates information may be deleted and or replaced as necessary.

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# Dry Well Overview

**Functionality**

A dry well is a subsurface storage facility that receives and temporarily stores stormwater runoff from roofs of structures. Discharge of this stored runoff from a dry well occurs through infiltration into the surrounding soils. A dry well may be either a structural chamber and/or an excavated pit filled with aggregate. Due to the relatively low level of expected pollutants in roof runoff, a dry well cannot be used to directly comply with the suspended solids and nutrient removal requirements contained in the NJDEP Stormwater Management Rules at N.J.A.C. 7:8. However, due to its storage capacity, a dry well may be used to reduce the total stormwater quality design storm runoff volume that a roof would ordinarily discharge to downstream stormwater management facilities.

Dry wells can be used to reduce the increased volume of stormwater runoff caused by roofs of buildings. While generally not a significant source of runoff pollution, roofs are one of the most important sources of new or increased runoff volume from land development sites. Dry wells can also be used to indirectly enhance water quality by reducing the amount of stormwater quality design storm runoff volume to be treated by the other, downstream stormwater management facilities. Dry wells can also be used to meet the groundwater recharge requirements of the NJDEP Stormwater Management Rules.

**Proper care and attention in the long-term maintenance of the stormwater management measure is critically important to the safety and health of the public.**

**Type of BMP – Dry Stormwater Management Measure / Infiltration Only**

A dry well is a type of **dry** stormwater management measure. Dry stormwater management measures must fully drain within 72 hours of the most recent rainfall. Standing water in excess of 72 hours is a sign of failure. It may also contribute to mosquito breeding and other health and safety issues. The design drain time shall be closely monitored to ensure that potential failure is recognized early.

Dry wells can detain, infiltrate, and recharge stormwater runoff; however, dry wells not designed to treat stormwater runoff for water quality; therefore, no TSS removal is assigned to a dry well.

# Basic Design Information

This section shall be filled out by the design engineer.

**Hydrology Design Targets**

1. This dry well is designed with a subsoil permeability rate of \_\_\_\_\_\_\_\_\_ inches/hour (pre-construction) and \_\_\_\_\_\_\_\_\_\_ inches/hour (post-construction - tested on

(MM) / (DD) / (YYYY) ).

1. The design drain time is \_\_\_\_\_\_\_\_\_\_ hours.
2. The elevation of the seasonal high water table of this dry well was observed on

(MM) / (DD) / (YYYY) and it was \_\_\_\_\_\_\_\_\_ feet below the dry well bottom surface, at EL.\_\_\_\_\_\_\_ feet.

**Hydraulic Design Targets**

1. This dry well is designed to infiltrate the runoff from the (Water Quality Design Storm / groundwater recharge storm), which generates \_\_\_\_\_\_\_\_\_\_ cubic feet of runoff.

**Dry well Configuration Targets**

1. The dimensions of the dry well are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (width, length (or diameter), depth).
2. The perforated pipe is \_\_\_\_\_\_\_\_ inches in diameter. The perforations are \_\_\_\_\_ inches in diameter and are arranged \_\_\_\_\_ inches center to center, \_\_\_\_\_\_ perforations per row, and \_\_\_\_\_\_\_ rows of perforations per pipe.
3. The stone fill uses crushed stone \_\_\_\_\_\_\_ inches in diameter.

**Critical Maintenance Features**

1. Check downspout and bypass frequently and remove leaves and other debris immediately.
2. Check inspection port for excessive sediment.
3. (Others to be added by the design engineer, if necessary)

**Attach the following Disturbance Notices, if applicable to the site:**

**Wetland Disturbance Notice**:

Maintenance of this BMP may disturb a wetland area. Contact NJDEP Division of Land Use Regulation for guidance and any required permit(s) before performing maintenance.

**Wildlife Disturbance Notice**:

Maintenance of this BMP may disturb or remove vegetation in an area designated to endangered and/or threatened species. Contact NJDEP Division of Fishing and Wildlife for guidance and any required permit(s) before performing maintenance.

# Visual Aid for Dry Well Inspection

**No photos are currently available. Photos will be updated upon availability.**

# Reference Documents

Documents to be placed in this field manual should include the following:

* As-built Drawings (or specifications if a manufactured dry well is used) with Drainage Plans
* Operation and Maintenance Manual, if a manufactured dry well is used
* Permeability Test (Pre-construction)
* Permeability Test (Post-construction)
* Fabric Specifications and Maintenance Information
* Groundwater Mounding Analysis

**Attach Reference Documents Here**

# Inspection Checklist / Maintenance Actions

**Dry Well**

**Checklist** (circle one)**:** Quarterly / Annual / Monthly / Special Event Inspection

**Checklist No.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Inspection Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Date of most recent rain event: \_\_\_\_\_\_\_\_\_\_**

**Rain Condition** (circle one):

Drizzle / Shower / Downpour / Other \_\_\_\_\_\_\_\_\_\_\_\_\_

**Ground Condition** (circle one):

Dry / Moist / Ponding / Submerged / Snow accumulation

**The inspection items and preventative/corrective maintenance actions listed below represent general requirements. The design engineer and/or responsible party shall adjust the items and actions to better meet the conditions of the site, the specific design targets, and the requirements of regulatory authorities.**

|  | **For Inspector** | | | **For Maintenance Crew** |
| --- | --- | --- | --- | --- |
| **Component No. Component Name** | **Inspection Item and Inspection Item No.** | | **Result** | **Preventative / Corrective Maintenance Actions** |
| A  Dry Well | 1 | The cap of the inspection port is loose, damaged, or missing. | Y\_\_  N\_\_ | Fix, repair, or replace the cap  Work Order #\_\_\_\_\_\_\_\_\_\_ |
| 2 | Standing water is present after the design drain time  The observed drain time is approximately \_\_\_\_\_\_\_\_\_ hours. | Y\_\_  N\_\_ | Recheck to determine if there is standing water after 72 hours  If standing water is present longer than 5 days, report to mosquito commission. |
| Remove any sediment buildup and replace the stone fill if necessary  Check the perforated pipe for clogging and clean it if necessary  Check the perforated pipe for damage and repair it if necessary  Check subsoil permeability and replace subsoil if necessary  Work Order #\_\_\_\_\_\_\_\_\_\_ |
| 3 | Excessive sediment or debris present in the inspection port | Y\_\_  N\_\_ | Clear and remove sediment or debris |
| Note: | | | | |
| A  Dry Well | 4 | Little or no flow into the dry well | Y\_\_  N\_\_ | Check whether the gutter, inlet pipe, downspout, or flow diverter is clogged  Clear and remove debris |
| 5 | Downspout or Overflow pipe is clogged | Y\_\_  N\_\_ | Clear the clog |
| 6 | Odor present | Y\_\_  N\_\_ | Clear and remove sediment and debris  Investigate the roof and gutters |
| 7 | Overflow from the top of the dry well | Y\_\_  N\_\_ | Clear and remove sediment and debris  Check the bypass pipe if any clog  Remove any sediment buildup and replace the stone fill if necessary  Check the perforated pipe for clogging and clean it if necessary  Check the perforated pipe for damage and repair it if necessary  Check subsoil permeability and replace subsoil if necessary |
| Note: | | | | |

**Follow Up Items: (Component No. / Inspection Item No.):**

(e.g., A/1, A/2)

**Associated Work Orders: # \_\_\_\_\_\_, # \_\_\_\_\_\_, # \_\_\_\_\_\_, # \_\_\_\_\_\_, # \_\_\_\_\_**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Inspector Name Signature Date

**Report issues to the local authority and mosquito commission as required by local ordinances and regulatory authorities.**

**File this checklist in the Maintenance Log after performing maintenance.**

# Preventative Maintenance Record

Corresponding Checklist No. \_\_\_\_\_\_\_\_

Component No.\_\_\_\_\_\_\_, Inspection Item No.\_\_\_\_\_\_\_\_

**Work Logs**

|  |  |  |
| --- | --- | --- |
| **Activities** | **Components** | **Date Completed** |
| Sediment/debris removal  **Sediment removal should take place when the dry well is thoroughly dry.** | 1. Dry Well |  |
|  |  |
|  |  |
|  |  |
|  |  |  |
| (List additional tasks, if applicable) |  |  |

Debris, sediment, and trash are handled (onsite / by \_\_\_\_\_\_\_\_\_\_\_\_ (contractor name) to disposal site \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). (See Part I: Maintenance Plan – Disposal Plan Section)

Crew member:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_

(name/ signature)

Supervisor:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_

(name/ signature)

**File this Preventative Maintenance Record in the Maintenance Log after performing maintenance.**

# Corrective Maintenance Record

1. **Work Order #** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date Issued** \_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Issue to be resolved**:

(e.g., damaged cap)

1. The issue was from **Corresponding Checklist No. \_\_\_\_\_\_\_\_, Component No.** (e.g., A – Dry Well), **Inspection Item No.**  (e.g., 2, 3)  **.**
2. **Required Actions**

|  |  |  |
| --- | --- | --- |
| **Actions** | **Planned Date** | **Date Completed** |
| Repair cap |  |  |
| Repair perforated pipe |  |  |
| Repair fabric |  |  |
| Repair bypass pipe |  |  |
| Repair downspout |  |  |
| (If there are additional tasks, list them here.) |  |  |

1. **Responsible person(s):**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Special requirements**
   * Time of the season or weather condition:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Tools/equipment:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Subcontractor (name or specific type):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Approved by** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date** \_\_\_\_\_\_\_\_\_\_\_\_\_

(name/signature)

**Verification of completion by** \_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_ **Date** \_\_\_\_\_\_\_\_\_\_\_\_\_

(name/signature)

**File this Corrective Maintenance Record in the Maintenance Log after performing maintenance.**