**VEHICLE WASH FACILITY**

## **OPERATIONS AND MAINTENANCE MANUAL**

**TEMPLATE**

*(PERMITTEES DO NOT NEED TO USE THIS TEMPLATE. THEY MAY USE THEIR OWN FORMAT AS LONG AS ALL THE ITEMS IN PART I B 13 OF THE PERMIT ARE ADDRESSED)*

**INTRODUCTION**

The facility’s Operations and Maintenance (O&M) Manual is intended to provide personnel with all the information necessary to ensure compliance with the VPDES permit. Therefore, the O&M Manual must be a self-sufficient document, not requiring reference to other documents to understand the Manual’s contents. It is not intended that the preparation of an O&M Manual be ` the facility. Furthermore, the information in the Manual should be stated in a manner that all personnel at the facility can comprehend and use in their day-to-day work.

This document is a guideline that the writer can use in preparing the Manual to ensure that the minimum contents per the permit are included per the permit in Part I B 13.

The O&M Manual is a regulatory document that the DEQ can use to enforce compliance with the permit and must be made available to DEQ upon request.

If you have any questions or problems in preparing the Manual, the Regional Office of DEQ is available for assistance.

<https://www.deq.virginia.gov/get-involved/about-deq/contact-us>

A. Title Page

Include the name of the facility, date of Manual preparation,

**EXAMPLE**

OPERATIONS AND MAINTENANCE MANUAL

FOR

COVERAGE UNDER THE VPDES GENERAL PERMIT FOR

XXX CAR WASH

ADDRESS

DATE

(INCLUDE REVISION DATES - MUST AT A MINIMUM BE REVIEWED ANNUALLY)

B. Table of Contents

List each chapter or section and the beginning page number of each.

C. Emergency Phone Numbers

List emergency phone numbers, including:

1. Va. Department of Environmental Quality (DEQ) - (varies by region - check here:

https://www.deq.virginia.gov/get-involved/about-deq/contact-us

2. Va. Dept. of Emergency Management - 24-hour (800)468-8892

3. Chemical Manufacturers

4. Medical

5. Sheriff

6. Other, as appropriate (include corporate personnel to be called in an emergency)

D. Introduction

Briefly describe the organization, location (note this can be a computer generated map or USGS topographic map with notes to indicate the building, treatment units, outfall location and receiving stream), the wastewater treatment and purpose of the Manual.

**EXAMPLE**

XXX Car Wash is located in XXX, VA. See Appendix # for location map identifying the property, the building(s), treatment units, outfall location and receiving stream. The facility serves as three stall self-service high pressure wand type car washes. Existing wastewater treatment consists of an oil water separator.

This manual is to provide procedures for efficient operation and maintenance of the car wash, wastewater treatment system and monitoring procedures of the effluent. Through the procedures in this manual, the requirement of the Virginia Pollutant Discharge Elimination System (VPDES) should be met. All facility personnel will be familiar with the contents of the Manual and trained upon hiring and thereafter on an annual basis. This manual shall be reviewed and updated annually or more often as needed to maintain permit limits and the health of the receiving stream.

E. Description of the Wastes and Treatment Facility

1. Describe the waste water

2. Describe the treatment units, operation and critical spare parts inventory (if treatment system is in use e.g., oil/water separator).

3. Describe the stormwater inlet protection measure directions (if stormwater inlet protection is in use).

4. Include water balance (flow sheet) as an attachment or appendix.

5. Show sample locations and outfall(s) as an attachment or appendix. Can be shown on a topographic, computer generated or hand drawn map.

6. Include photos and diagrams.

7. Include in this section a list of all chemicals used (trade names and chemical compositions). You may refer to Material Safety Data Sheets (MSDS) in an appendix.

**EXAMPLE FOR WASTEWATER TREATMENT SYSTEM**

Through the process of high pressure cleaning of automobiles and trucks in combination with a bio-degradable non-phosphate soap and cold water, a waste consisting of small amounts of solids (mud, sand, clay, and gravel) and oil is generated. Flow is provided by a high pressure (800-1500 psi) wand (nozzle) and pump system. Flow through the wand is less than 3 gallons per minute. Pre-soak, soap (wash and foam brush), rinse and wax functions are provided and will be incorporated in the waste water. There are no tire or engine cleaner options. A sign is placed in each bay to instruct washers not to use these products on the property or to rinse or wash off hazardous materials. Two vacuum stations are located on the edge of the property and do not usually add solids to the waste stream. Two large trashcans with lids are provided for customer use.

Approximately 100 cars are cleaned per week.

The waste water flows first through 1" grates, then through a 3/4" finer screen and via gravity into a down gradient oil/water separator. The first compartment is separated from the second compartment by a baffle which allows water from within the tank below the surface to flow into subsequent compartments of the separator. The X,000 gallon tank is large enough to hold water long enough for the particles to drop out. The oils on the surface are captured in the first compartment. This process is followed by water polishing as sand filtration removes fine suspended solids. Gravity flow is insured by changes in elevations of tanks and piping. See Appendix # for diagram. The water is discharged through a single 6" PVC pipe into X STREAM.

Monitoring occurs at the end of the PVC pipe for permit limit compliance.

See Appendix # for photos of the site, treatment system, outfall and receiving stream.

Chemicals used at the site include X soap, X wax, X conditioner, etc…. OR See Appendix # for MSDS sheets or list of chemicals.

Critical spare parts include: 5 gallons spill adsorbent, X lbs filter media, 1 spare pump???

**EXAMPLE FOR STORMWATER INLET PROTECTION MEASURES**

A spray nozzle is kept on the water hose that immediately shuts water off when the handle is released. The washing area is swept before and after washing each day (morning and closing or 5 pm). All visible trash noted during washing is picked up immediately so as not to enter the storm drain. Biodegradable (or citrus based) soaps and cleaners are in use (see MSDS Appendix #), and directions on product are as follows:

Add X cups/tablespoons/ounces per X gallons water. Leftover wash water is disposed of in sink/toilet on grass. A storm drain rubber (describe product) is placed over storm drain each day of washing and removed at when washing is completed and wash water appears to have evaporated. The storm drain cover is removed at the threat of rain and vehicles are not washed during rain events. A filter sock (insert name and model) designed to adsorb oils, metals and deflect solids is also in use and may be left in place routinely and not removed during rain events.

The filter sock is observed daily for wear and tears to the sock and maintenance is recorded weekly in the log in Appendix #. The instructions for its maintenance and life span are included in Appendix # as well. A spare filter sock is kept in the maintenance closet of the business with the cleaning products and is replaced within a reasonable time period of the manufacturer’s instructions depending on wear (punctures, loss of filter sock contents) due to weather and number of vehicles washed. The filter sock is typically used in addition to the storm drain cover depending on weather. The storm drain cover is not in use during predicted or actual rain events.

F. Maintenance

1. Include schedules for routine (preventative) maintenance tasks to be performed on a daily, weekly, or other periodic basis;

2. Other best management practices; and

3. Appropriate checklists should be developed and included as attachments or appendices.

**EXAMPLE**

Trash cans are emptied daily into a dumpster. The fine grates are inspected daily and cleaned out as needed. Waste is put in dumpster. Dumpster is emptied once a month by NAME OF WASTE MANAGEMENT COMPANY located at ADDRESS.

Floors, walls and building exterior are cleaned when necessary and wash water goes through treatment system or is evaporated.

Grit, solids and oil buildup are inspected weekly by the manager. Grit and solids from the bottom of the separator are pumped out approximately X times per X, dewatered and delivered to the local landfill by NAME OF COMPANY who follows disposal practices under the Resource Conservation and Recovery Act (RCRA). Oil is removed by the same company approximately X times per X using reusable adsorbent materials (state material used). NAME OF COMPANY recycles the oil at LOACATION WHERE RECYCLING OCCURS. NAME OF COMPANY also notifies the manager when critical spare parts may need to be replaced. Critical spare parts include: coalescers, baffles, a pump and a X,000 gallon storage container in the event of a failure of the oil water separator. Contact information for NAME OF COMPANY is NAME AND CONTACT INFORMATION.

The manager is present on site during periods of grit and oil recovery by NAME OF COMPANY and once a day to empty trash receptacles, make visual observations of the site and treatment equipment, fill out maintenance logs, refill product, and be present when effluent samples are taken (ONCE OR TWICE a year effluent sampling occurs).

In periods of heavy rain and potential flooding of the bays, the business is closed and floor drains are blocked with a rubber storm drain mat to avoid flooding the oil water separator.

The sand filter is controlled by monthly inspection of sand contamination and bed condition by the manager. The bed is inspected for hydraulic overloading (uneven sand distribution), sand contamination (visual or laboratory analytical if needed, puddling, and depth. Sand is replaced on an as needed frequency.

The recordkeeping log for solids and oil recovery is in Appendix # and is kept on site and maintained by the operator.

G. Visual Examinations of Effluent

1. Include weekly example schedule log for visual examination of the effluent for sheens, floating solids or visible foam in the effluent. Log should contain examination date, time, personnel doing examination, presence of a discharge and the visual quality results (see Appendix #).
2. Include location of actual log with written results.

H. Spill Management Procedures

1. Discuss step-by-step measures to be taken to contain and store liquid product in the event of a leak, rupture, or other spill. This section shall list procedures specific to the chemicals, which may be spilled at the site. The VA DEQ should be immediately notified of all chemical or wastewater spills that directly enter surface water or the separate storm sewer.

2. Material Handling & Storage (procedures to keep materials from exposure and from discharge to state waters).

**EXAMPLE**

Spills from fuel, coolant, solvent, oil, or paint spills are cleaned up as soon as they are noticed during twice daily inspections of the site with dry methods (LIST PRODUCTIONS USED TO CLEAN UP SPILLS – ADSORBENTS, ETC...) and disposed of such that no discharge to state waters except as authorized by VAG75XXXX (INSERT PERMIT NUMBER) occurs. All washing and waxing products used at the site are stored in a locked shed on the property and refilled as needed. All spills are cleaned up as much as possible with dry methods (LIST PRODUCTS USED TO CLEAN UP SPILLS OF WASHING AND WAXING PRODUCT). Any small remaining washing or waxing product will be washed with a hose or one of the high pressure washers into the treatment system.

I. Effluent Monitoring Requirements

1. Include name, address, and telephone number of firm(s) contracted to sample the outfall. Also include frequency of sampling and list of parameters to be monitored.

2. If any samples are to be collected by plant personnel, detail the procedures and materials used in obtaining and preserving samples, and the maximum holding times.

3. Note in the manual that copies of the lab analysis reports will be mailed to the DEQ, X Regional Office, with the corresponding signed monitoring report (Appendix # (blank DMR)).

**EXAMPLE**

NAME OF LAB collects representative samples (normal discharge flow while vehicles are being washed ONCE OR TWICE a year at designated outfall). NAME OF LAB will collect pH sample and analyze within 15 minutes on site. Other samples collected for TSS and oil and grease are collected, preserved and analyzed in accordance with the Code of Federal Regulations (CFR) 40CFR136 methods. NAME OF LAB is certified in accordance with 1VAC30-46, Accreditation for Commercial Environmental Laboratories for the permit limit parameters as per Part II A 4 of VPDES permit VAG75XXXX. NAME OF LAB contact information is INSERT CONTACT INFORMATION.

Samples are collected once every six months during a calendar year. Samples shall be collected by December 31 and June 30 of each year and reported on the facility's Discharge Monitoring Report (DMR in Appendix #) and submitted to the DEQ at (INSERT DEQ REGIONAL ADDRESS). DMRs shall be submitted by January 10 and July 10 of each year. Oil and grease and pH are grab samples taken during a representative discharge event (vehicle washing waste water is being discharged from outfall). TSS is a composite consisting of five grab samples collected evenly spaced over an 8 hour period or 5 grab samples evenly spaced for the duration of the discharge, if less than 8 hours in length. Flow is estimated as gallons per day. If no discharges occur in the six month period, the DMR will have "No Discharge" written upon it.

J. Personnel

List facility personnel and their roles. Either the owner or the operator may sign the DMRs. If the operator is assigned the signatory authority you must attach a copy of the letter from the owner that the operator is duly authorized to sign DMRs per Part II K 2 of the permit. This letter should be sent to DEQ.

**EXAMPLE**

All reports shall be signed and dated by a signatory authority per Part II K 2 of the permit. The following indicates the authorities of plant personnel:

NAME - Owner, financier and permit holder. Develops operations and maintenance (O&M) manual with input from operator. Reviews O&M manual annually with input from operator.

NAME – Operator or local contact - direct contact to DEQ, manager of day to day operations, monitoring coordinator (contact lab, observes sampling), fills out DMR, signs DMR (attach copy of letter from owner that operator is duly authorized to sign DMRs per Part II K 2 of the permit). Notifies owner if O&M manual needs to be revised. This is a self-service facility so no other personnel are present.

K. Records

Include a statement and ensure that all records for facility maintenance, sampling and testing shall be maintained for a minimum of three years and shall be available for inspection by the owner, manager and DEQ upon request.

L. SWCB Permits or Certificates

Include a copy of the VPDES permit in the Appendix # of the manual.

M. References (if any)

**EXAMPLE**

Water Effluent and Solid Waste Characteristics in the Professional Car Wash Industry, A Report for the International Carwash Association, Brown C., December, 2002

## APPENDIX #

Location Map (topographic, computer generated or hand drawn) to show treatment unit, outfall locations and wastewater receiving stream

## APPENDIX #

WASTEWATER TREATMENT DIAGRAM

**EXAMPLE**

Loading Rate XX GPD/Sq. Ft.

Det. Time X Days

(Floor Drain 1)

1,000 GPD

Car Wash Bay 1

XC

3,000 GPD

Private Well

3,000 GPD

Sand Filter

Oil Water Separator

(Floor Drain 3)

(Floor Drain 2)

1,000 GPD

Car Wash Bay 3

Car Wash Bay 2

Ca

1,000 GPD

3,000 GPD

Outfall 001 Sampling Location

STREAM

## APPENDIX #

PHOTOS

1. Business Property

2. Treatment System

3. Outfall

4. Receiving Stream

## APPENDIX #

Material Safety Data Sheet(s) or List of Chemicals

## APPENDIX #

MAINTENANCE LOG TREATMENT UNITS

**EXAMPLE**

| **FLOOR DRAINS** | | | **OIL/WATER SEPARATOR** | | | **SAND FILTER** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Inspected Date | Cleaned Date | Comment | Inspected Date | Cleaned Date | Comment | Inspected Date | Cleaned/Sand Added Date | Comment |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

## APPENDIX #

MAINTENANCE LOG STORMWATER MANAGEMENT INLET PROTECTION MEASURES AND

ATTACHED PRODUCT INSTRUCTIONS

WEEKLY OBSERVATIONS

| Date | Filter Sock Condition | Filter Sock Replaced | Other Best Management Practices in Use this Week | Comments |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## APPENDIX #

VISUAL EFFLUENT EXAMINATION WEEKLY LOG

| Date | Time | Personnel | Sheens | Floating Solids | Foam | Presence of a Discharge | Other |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

## APPENDIX #

VPDES Permit