ILLICIT DISCHARGE DETECTION AND ELIMINATION

EMPLOYEE HANDBOOK

Harker Heights
The Bright Star Of Central Texas

CITY OF HARKER HEIGHTS
2014

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Purpose of the Employee Handbook

The Public Works Department is committed to excellent customer service and improvement of our city's infrastructure. Public Works includes the following six divisions: Water, Waste Water, Street, Storm Drainage, Sanitation and Fleet Maintenance. Our greatest asset is our employees. This handbook is for the use of both new and experienced employees. The purpose of this Handbook is to provide employees with a general knowledge and a better understanding of illicit discharges and the harm they can cause to the environment and waterways. The Employee Handbook is provided for informational purposes only. It is designed to provide employees with the basic knowledge of illicit discharges, acronyms associated with illicit discharges, definitions associated with illicit discharges, and ways of identifying illicit discharges. The City of Harker Heights has the right to change, modify, or add policies and procedures to this handbook. The City of Harker Heights will notify the employees about any changes to this handbook. It is your responsibility as an employee to read this handbook. If further explanation or understanding is necessary, please talk with your supervisor and your supervisor will contact the necessary department for assistance.

ACROYNYMS

BMP	Best Management Practice
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	Environmental Protection Agency
NOC	Notice of Change
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
SWMP	Storm Water Management Program
TCEQ	Texas Commission on Environmental Quality
WQD	Water Quality Division

Introduction

According to the Environmental Protection Agency (EPA) identifying and eliminating non-storm water discharges to storm sewers is an important and very cost-effective Best Management Practice (BMP) for improving runoff water quality. Non-storm water discharges can include discharges of process water, air conditioner condensate, non-contact cooling water, vehicle wash water, or sanitary wastes, and are typically the result of unauthorized connections of sanitary or process wastewater drains to storm sewers.

These connections are common, yet often go undetected. Typically these discharges are significant sources of pollutants, and, unless regulated by an NPDES permit, they are also illegal. Environmental impact evaluations have shown that the elimination of non-storm water discharges is an effective BMP, because such discharges may contain a significant loading of pollutants. Several studies exist on the contents of non-storm water discharges. Pitt and Shawley (1982) reported that non-storm water discharges were found to contribute substantial quantities of a variety of pollutants, even though the individual concentrations of each pollutant were not high.

Therefore, it is anticipated that elimination of non-storm water discharges will be a highly effective BMP. Identifying and eliminating non-storm water discharges has rarely been done at industrial facilities. Part of the problem is education: many facility operators are unaware of what constitutes a non-storm water discharge and what the potential environmental impacts of these discharges are. Compliance with NPDES permit requirements for the presence of non-storm water discharges will greatly improve the implementation of this BMP.

Definitions

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Clean Water Act (CWA) - The Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972,

Conveyance - Curbs, gutters, man-made channels and ditches, drains, pipes, and other constructed features designed or used for flood control or to otherwise transport storm water runoff.

Discharge - When used without a qualifier, refers to the discharge of storm water runoff or certain non-storm water discharges as allowed under the authorization of this general permit.

Environmental Protection Agency (EPA) – is an agency of the U.S. federal government which was created for the purpose of protecting human health and the environment by writing and enforcing regulations based on laws passed by Congress. The EPA was proposed by President Richard Nixon and began operation on December 2, 1970, after Nixon signed an executive order.

Ground Water Infiltration - groundwater that enters a municipal separate storm sewer system (including sewer service connections and foundation drains) through such means as defective pipes, pipe joints, connections, or manholes.

Illicit Connection - Is a connection of any type of man-made conveyance that is connecting an illicit discharge directly to a municipal separate storm sewer.

Illicit Discharge - Any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges pursuant to this general permit or a separate authorization and discharges resulting from emergency firefighting activities.

Large Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, and original purpose of a ditch, channel, or other similar storm water conveyance. Large construction activity does not include the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.

National Pollutant Discharge Elimination System (NPDES - As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES)

permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

Notice of Change (NOC) - Written notification from the permittee to the executive director providing changes to information that was previously provided to the agency in a notice of intent.

Notice of Intent (NOI) - A written submission to the executive director from an applicant requesting coverage under this general permit.

Outfall - For the purpose of this permit, a point source at the point where a municipal separate storm sewer discharges to waters of the United States (U.S.) and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the U.S. and are used to convey waters of the U.S.

Point Source - any obvious, confined, and discrete passage, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant(s) of Concern - Include biochemical oxygen demand (BOD), sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation),

pathogens, oil and grease, and any pollutant that has been identified as a cause of impairment of any water body that will receive a discharge.

Small Construction Activity - Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, and original purpose of a ditch, channel, or other similar storm water conveyance. Small construction activity does not include the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities.

Storm Drain Marker - Drain messages are usually a simple phrase to remind passersby that the storm drains connect to local waterbodies and that dumping in drains pollutes these waters. Sometimes, the drains specify the body of water where drain water eventually flows

Storm Sewer System – refers to a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

Storm Water Associated with Construction Activity - Storm water runoff from an area where there is either a large construction activity or a small construction activity.

Storm Water and Storm Water Runoff - Rainfall runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Management Program (SWMP) - A comprehensive program to manage the quality of discharges from the municipal separate storm sewer system.

Structural Control (or Practice) - A pollution prevention practice that requires the construction of a device, or the use of a device, to capture or prevent pollution in storm water runoff. Structural controls and practices may include but are not limited to: infiltration basins, storm water wetlands, silt fences, earthen dikes, drainage swales, vegetative lined ditches, vegetative filter strips, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the Texas - Lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals.

Texas Commission on Environmental Quality (TCEQ) - The Texas Commission on Environmental Quality is an agency that strives to protect our state's public health and natural resources consistent with sustainable economic development. Our goal is clean air, clean water, and the safe management of waste."

Urban Area (UA) – Describes an area of high population density.

Water Quality Division (WQD) -The Water Quality Division is responsible for protecting the quality of water in Texas. The Water Quality Division is a part of the TCEQ.

What is an illicit discharge?

The Texas Commission on Environmental Quality (TCEQ) defines an illicit discharge as any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges pursuant to this general permit or a separate authorization and discharges resulting from emergency firefighting activities.

Types of Illicit Discharges

DUMPING OIL CONTAINERS DOWN STORM DRAINS

WASHING OR BLOWING LEAVES THE DRAINS

DRAINS ARE FOR RAIN NOT PAINT

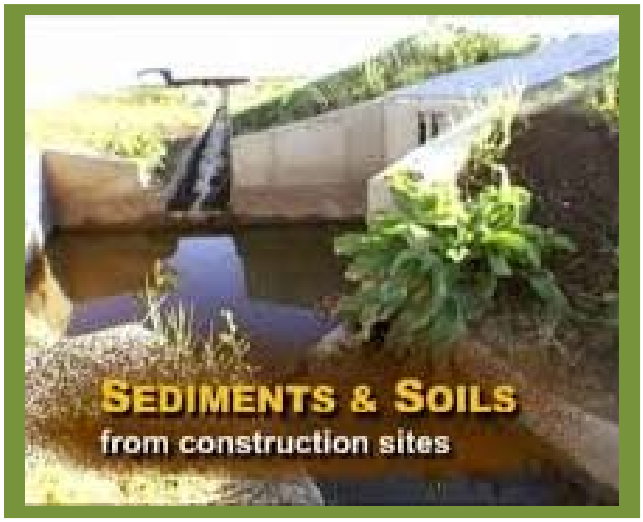
THROWING GARBAGE INTO CREEKS OR STREAMS

DUMPING CHEMICALS DOWN STORM DRAINS

BAD DEVELOPERS

OVERFLOWING MANHOLES

BLOWING OR WASHING GRASS CLIPPINGS DOWN THE DRAINS

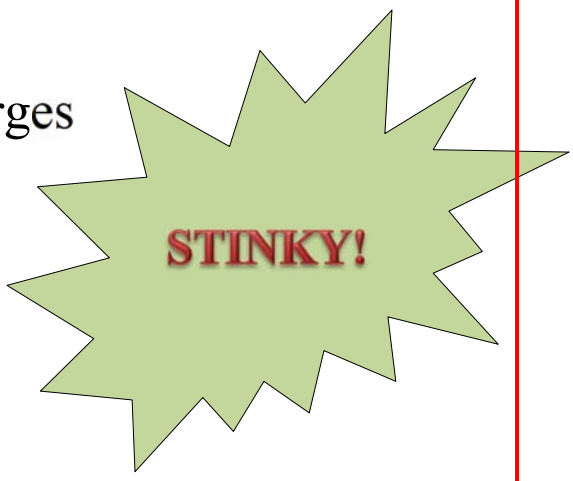


BADLYMANAGED CONSTRUCTION SITES

WATER MAIN BREAKS

DRAINING SWIMMING POOLS INTOTHE STREET

Identifying Illicit Discharges



Does the discharge have a distinct odor?

Some smells coming from an outfall pipe are an immediate indicator of an illicit discharge for-example, a sewage, gasoline, or chemical smell should be reported.

Is the water cloudy or full of sediment?

Gray water that should be treated at a sewage treatment plant may cause a cloudy appearance in the discharged water. A construction site without proper stormwater best management practices could be discharging sediment to a storm drain. These conditions should be reported.

What is floating in the discharge?

Soap suds and oil sheens are examples of floatables that may be found in an illicit discharge. These conditions should be reported.

What color is the discharge?

An abnormally colored discharge is a good indication that there is an illicit connection to the stormwater conveyance system. However if an abnormal color is coupled with another one of the characteristics listed here (odor, floatables, cloudiness, vegetative growth), it should be reported.

Excessive vegetation around the outfall pipe?

Excessive vegetation around the outfall pipe as opposed to the surrounding area is an indication of increased nutrients in the stormwater discharge. This could be from fertilizers or sewage in the discharge and should be reported.

Identifying Illicit Discharges

Accident spills are significant sources of illicit discharges.

Spills can occur at many industrial, commercial, and transport related sites. A very common example is an oil or gas spill from an accident that then travels across the road and into the storm drain system.

Improper Adjustment of Sprinklers is sources of illicit discharges.

In some instances, non-target irrigation can produce unacceptable loads of nutrients, organic matter or pesticides. The most common example is a discharge from commercial landscaping areas adjacent to parking lots connected to the storm drain system.

Disposing of Cleaning Buckets /Mop Water is an Illicit Discharge.

Disposing cleaning water and or mop buckets into the drain can be harmful to the environment. These type of waters contain chemicals that can cause the water in lakes and streams to be contaminated.

Tracing Illicit Discharges

Manhole Observations

A technique is to follow lines in manholes upstream. This can be accomplished doing the following steps:

- Consult the sewer system map.
- Check the next "upstream" manholes and look at all inlets to see if there is evidence of discharge.
- Keep checking manholes until an inlet is found with no evidence of discharge; the discharge source is likely to be located between the inlets with no evidence of discharge and the next downstream manhole
- Pay attention to the surrounding area and look for water in gutters and streets.

Video Inspection

Mobile video cameras can be guided remotely through storm sewer lines to observe possible illegal connections into storm sewer systems and record observations on a DVD. Public works staff can observe the videos and observe any illegal connections. This technique is time-consuming and the most expensive.

Tracing Illicit Discharges

Smoke Testing

This involves dropping non-toxic smoke bombs that react to water the using forced air to push the smoke into storm drains or sewer lines. Operators then observe for signs of smoke from sanitary sewer vents on buildings and houses or from cracks and leaks in the storm sewer lines. Prior to performing this test, it is necessary to inform owners and occupants in the area in advance and the police and fire departments

Dye Testing

This technique involves using non-toxic dye into manholes, storm drains, toilets and sinks and having operators positioned at certain areas to observe the presence of water that is changing to the color of the dye.

SEWER USE REQUIREMENTS; DISCHARGES

Bookmark§ 53.20 PROHIBITED DISCHARGES.

(A) No person may discharge any waste which by itself or by interaction with other wastes may:

(1) Overload, injure or interfere with wastewater treatment processes or facilities;

(2) Constitute a hazard to humans or animals; or

(3) Create a hazard in receiving waters of the wastewater treatment plant effluent.

(B) All discharges shall conform to requirements of this chapter.

(Ord. 2011-01, passed 1-25-11) Penalty, see § 53.99

pproving authority specifying conditions of pretreatment, concentrations, volumes, and other applicable provisions.

Bookmark§ 53.23 PARTICULATE SIZE.

(A) No person may discharge garbage or other solids into public sewers unless it is shredded to a degree that all particles can be carried freely under the flow conditions normally prevailing in public sewers.

(B) The approving authority is entitled to review and approve the installation and operation of any garbage grinder equipped with a motor of 3/4 horse-power (0.76 hp metric) or greater. A garbage grinder shall be designed and installed to ensure that ground particles shall not exceed 1/2-inch in any dimension.

(Ord. 2011-01, passed 1-25-11) Penalty, see § 53.99

Bookmark§ 53.24 STORMWATER AND OTHER UNPOLLUTED DRAINAGE.

(A) No person may make any new connections from inflow sources, or discharge to public sanitary sewers:

(1) Unpolluted stormwater, surface water, groundwater, roof runoff, or subsurface drainage;

(2) Unpolluted cooling water;

(3) Unpolluted industrial process waters; or

(4) Other unpolluted drainage.

(B) In compliance with applicable law, the approving authority may designate storm sewers and other watercourses into which unpolluted drainage described in division (A) of this section may be discharged.

Conclusion

Whether you work in the Water Department or at the Transfer Station it is the responsibility of all employees to report an illicit discharge that can harm the to the environment and waterways. By following this Employee Handbook the employee can save the City of Harker Heights time and money and prevent illegal dumping of trash, debris, and liquids in the city.

Report any Suspicious Looking Discharges

(254) 953-5649 City Hall

(254) 702-4893 Waste Water On Call