City of Cold Spring

Stormwater Program

ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) (SOP) PROCESS MANUAL

Prepared by:

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ACRONYMS

BMP	Best Management Practice
GIS	Geographic Information System
GPS	Global Positioning System
IDDE	Illicit Discharge Detection and Elimination
KPDES	Kentucky Pollutant Discharge Elimination System
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NOV	Notice of Violation
SIC	Standard Industrial Classification
SOP	Standard Operating Procedure

REGULATORS / AGENCIES

EPA	U.S. Environmental Protection Agency
CWA	Clean Water Act
DEP	Department for Environment Protection
EEC	Energy and Environment Cabinet
KDOW	Kentucky Division of Water

CHAPTER 1 – KPDES PERMIT PROGRAM

1.0 INTRODUCTION

The 1972 Federal Clean Water Act (CWA) amended in 1978 is the cornerstone of stormwater and surface water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the Nation's waters so that they can support the protection of watersheds. To further reduce the adverse effects of stormwater runoff, the U.S. Environmental Protection Agency (EPA) instituted its Stormwater Phase II Final Rule on December 8, 1999.

2.0 PHASE II STORMWATER PROGRAM ADMINISTRATION

As authorized by the CWA, 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. The Phase II Stormwater Program is part of the EPA's NPDES program, which in the Commonwealth of Kentucky is managed and administrated by the Energy and Environment Cabinet, Department for Environment Protection, Division of Water (KDOW) with the mission "to manage, protect and enhance the quality of the Commonwealth's water resources for present and future generations through voluntary, regulatory and educational programs".

3.0 PHASE II STORMWATER PROGRAM REGULATIONS

The City of Cold Spring's Municipal Separate Storm Sewer System (MS4) is a system that discharges stormwater runoff to surface water, or waters of the state. Phase II regulates discharges from small MS4s located in "urbanized areas" (as delineated by the Census Bureau in the most recent census) and from additional small MS4s designated by the Energy and Environment Cabinet, Department for Environment Protection, Kentucky Division of Water (KDOW).

4.0 KPDES PHASE II PERMIT AND REGULATION BACKGROUND

This document and manual is the Standard Operating Procedure (SOP) plan that will serve as a plan and draft manual of rules and regulations and guide for the City of Cold Spring to fulfill certain requirements of the Municipal Separate Storm Sewer System (MS4) Permits. Implementation of an Illicit Discharge Detection and Elimination (IDDE) program is one of the third of six minimum control measures (MCM) of the permit's Storm Water Quality Program. This SOP is primarily directed at isolating, responding and documenting and reporting any illicit discharges in the compliance annual report to KDOW.

The City of Cold Spring's Storm Water Quality Program (SWQMP) has multiple BMP components of the IDDE Program including educating the public; the Illicit Discharge Detection and Elimination plan; The IDDE Ordinance (regulatory) the Stormwater System GIS Mapping, Public and Employee Illicit Discharge Information Program, the Identification of Known Storm Water Discharges and Flows and training for the City of Cold Spring Staff for the IDDE stormwater program.

5.0 THE ROLE OF ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) IN PHASE II STORMWATER

The EPA's Phase II rule specifies that permitting authorities (i.e., the KDOW) must issue general permits for small Kentucky MS4 communities. The rule required that the Kentucky MS4 communities apply for KPDES permit coverage within 90 days of permit issuance, and no later than March 10, 2003. USEPA's Stormwater Phase II Final Rule states that this stormwater management program must include the following six minimum control measures:

MCM#1 - Public education and outreach on stormwater impacts,

MCM#2 - Public involvement and participation,

MCM#3 - Illicit discharge detection and elimination (IDDE),

MCM#4 - Construction site stormwater runoff control,

MCM#5 - Post-construction practices (new and redevelopment, and

MCM#6 - Pollution prevention and good housekeeping for municipal operations.

As part of our application for permit coverage, the City of Cold Spring must identify the best management practices we will use to comply with each of these six minimum control measures and the measurable goals we have set for each measure **including the primary purpose of this paper the illicit discharge detection and elimination (IDDE) program**.

6.0 KPDES PHASE II STORMWATER EDUCATION

As reflected above, the City of Cold Spring, through the successful implementation of the six minimum control measures, provides stormwater education, including IDDE, to City of Cold Spring employees as well as the general public. This will involve the development of a citizen oversight group referred to as the Storm Water Advisory Committee (SWAC) comprised of City of Cold Spring key stakeholders, staff training, stormwater articles included in the newsletters mailed to 100% of the Cold Spring citizenry, fast sheets and updated and revised website.

7.0 PURPOSE OF THIS MANUAL

The intent of this IDDE process Draft SOP (Plan) and Draft Manual is to:

- Serve as a draft plan for the IDDE program as the City proceeds with developing the IDDE standard operating procedures (SOP)
- Serve as a draft IDDE manual that will begin the process and development of the IDDE standard operating procedures (SOP) and will certainly entail modifications and changes as the City proceeds forward with the MS4 program and specifically the IDDE SOP and program
- Review and provide background on the KPDES Permit Program
- Develop a Standard Operating Procedures (SOP) that represents the IDDE ordinance that was passed by City Council during the summer of 2014
- Provide a thorough understand for the need for an effective IDDE program,
- Identify who should be involved and to what extent,
- Define illicit discharges,
- Understand how to avoid, detect, investigate, eliminate, and report illicit discharges,
- Outline City of Cold Spring responsibilities within the IDDE Program and
- Define initial stages of a stormwater monitoring program.
- Automate the stormwater quality (IDDE) customer service process

8.0 ABOUT THIS MANUAL

This Manual has been designed to give an overview of the processes used by the City of Cold Spring to meet the requirements of the Phase II Stormwater Program for IDDE as follows:

- Chapter 2 explains the IDDE requirements of the KDOW's Phase II regulations.
- Chapter 3 reviews the procedure for mapping the MS4 within the City of Cold Spring.
- Chapter 4 identifies the priority areas within the City of Cold Spring and discusses the inspection schedule of the MS4.
- Chapter 5 references the enforcement mechanisms for illicit discharges and lists prohibited discharges.
- Chapter 6 specifically addresses the Standard Operating Procedures (SOPs) for Visual Inspections of the MS4 program.
- Chapter 7 specifically addresses the Standard Operating Procedures (SOPs) for Scheduled Visual Field Inspections of the MS4 program.
- Chapter 8 provides SOPs for Customer Service Reporting of the IDDE program.
- Chapter 9 provides the procedures for illicit discharge tracking, tracking and reporting and response by City of Cold Spring staff.
- Chapter 10 outlines tracking the IDDE Event.
- Chapter 11 outlines the SOPs for the Illicit Discharge Reporting.
- Chapter 12 outlines the SOPs for removing the source of the illicit

discharge.

- Chapter 13 outlines the SOPs for evaluating the illicit discharge program.
- Chapter 14 illustrates the MS4 outfall/receiving map.
- The Appendix includes the following information
    - City wide outfall map of 19 outfalls
    - Example of a detailed outfall map
    - Customer Service / IDDE inspection form
    - Illicit discharge observation form

9.0 WHO SHOULD BE INVOLVED AND TO WHAT EXTENT

Due to the difficult nature of observing and identifying the source of illicit discharges, the most effective aspect of an IDDE program becomes prevention and developing the SOP for the prevention program. In order to promote pollution prevention and increase the chances for discovering illicit discharges education of City Staff, County staff and SD1 if applicable, and the general public.

- Since City of Cold Spring staff is present on the streets, near drainage ways, in parks, and near sidewalks, they can provide current information about what is happening in the City. City staff should be properly trained to know and understand what to look for, what indicators can show that a discharge may be illicit (i.e., dry weather flows), and what reporting procedures to follow when they make an observation.

- Interdepartmental and interagency cooperation between the City Council and City administration, City staff, public works staff and the County will help decrease implication of response, increase the effectiveness of response, and improve the extent of reports.

- Citizens, community groups, and organizations that understand IDDE improves coverage for observations and reporting illicit discharges.

10.0 TITLES USED IN THIS DOCUMENT

City Administrator – means city administrator than will manage the program from the city perspective and work with the stormwater engineer and stormwater manager
Public Works Staff - means any public works employee other than supervisor
Administrative Staff - means any office staff including administrator, clerk, or assistant position
Stormwater Engineer – means SCM Engineering
Stormwater Manager – means ERC, Inc.

CHAPTER 2 – THE CITY OF COLD SPRING IDDE PROGRAM

DEFINITION OF AN ILLICIT DISCHARGE

The term "illicit discharge" is defined in the KDOW's Phase II Stormwater regulations as "any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to the Kentucky Pollutant Discharge Elimination System (KPDES) permit and discharges resulting from fire-fighting activities."

WHY ARE IDDE EFFORTS NECESSARY?

Discharges from MS4s often include wastes and wastewater from non-stormwater sources. Illicit discharges enter the MS4 through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to waters of the state. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

THE ELEMENTS OF AN IDDE PROGRAM

The KDOW's Phase II regulations state that an IDDE program must incorporate the following four elements:

- Develop an MS4 map showing the location of all outfalls, and the names and locations of all waters of the state that receive discharges from those outfalls;
- Develop and implement a plan to detect and address illicit discharges, including illegal dumping, to the system;
- To the extent allowable under state, tribal, or local law, effectively prohibit through ordinance, or other regulatory mechanism, illicit discharges into the MS4 and implement appropriate enforcement procedures and actions as needed; and
- Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

The City of Cold Spring has incorporated all of these elements within this Manual, or through implementation of our Phase II Permit requirements. Application of the above elements will be addressed throughout this IDDE SOP Manual.

The following is a list of departments to call for any future illicit discharges:

Emergency – 911
Storm Water Hotline 859-441-6863
City Administrator – 859-441-9604 (Hotline transfers to cell phone after hours)
Police Department – 859-441-6289
Fire Department – 859-441-6289
Public Works Department – 859-441-6289

Cold Spring investigates all reported illicit discharge incidents. If the area or address of the incident is not known by the Public Works Supervisor, the process begins with reviewing the City storm water program maps to determine the associated attribute (data) tables to determine flow paths and potential sources to and from the incident site.

Cold Spring has much of the stormwater system in digital mapping format with the SD1 and NKPAC (The Northern Kentucky Area Planning Commission, also known as NKAPC, is changing its name to Planning and Development Services of Kenton County, or simply PDS) Geographic Information System (GIS). This includes storm pipes, storm structures (retention and detention), channels, pipes, culverts and swales. The City has identified major outfalls and has entered that information into the GIS as a layer. Using GIS allows for easily accessed attribute information and layer isolation. In addition to City owned infrastructure, Cold Spring includes known non-city storm water infrastructure to show connectivity between systems. City maps and attribute tables will continuously be updated and verified as the field inspections proceeds. Examples of the GIS maps that have been integrated to assist in the IDDE process are shown in Appendix E.

In addition to responding to reports of illicit discharges by calls, it is recommended that the City also proactively inspects at least 20% of its outfalls each year to look for dry weather discharges for the next 5 years or until the entire system is inspected. An outfall inspection consists of a visual review of the end of the storm pipe, culvert, channel, or flume following the procedures in the Outfall Inspection SOP and gathering information outlined in the outfall inspection form (see Appendix F). If a dry weather discharge is identified while inspecting outfalls, the source of the discharge is documented and the SOP protocol is followed.

NON-STORMWATER DISCHARGES THAT THE CITY OF COLD SPRING'S IDDE PROGRAM NEED NOT ADDRESS

According to the KDOW's Phase II Stormwater regulations, facilities meeting any of the following criteria are not eligible for coverage under the KDOW MS4 regulations:

a) Those that have obtained or are required to obtain an individual KPDES permit for discharge of non-stormwater wastewaters;
b) Those that are subject to a promulgated national effluent guideline specific to stormwater discharges;
c) Those that propose a new or expanded discharge of pollutants of concern to a water body that is categorized as Impaired for those pollutants of concern and for

which an approved TMDL has been developed for those pollutants of concern; or

d) Those that KDOW has determined are more appropriately addressed by an individual KPDES permit or alternate KPDES general permit.

CHAPTER 3 – DEVELOPING AN MS4 MAP

INTRODUCTION TO THE CITY OF COLD SPRING STORMWATER GIS SYSTEM

NKPAC (The Northern Kentucky Area Planning Commission, also known as NKAPC, is changing its name to Planning and Development Services of Kenton County, or simply PDS) provided the stormwater infrastructure information for the entire Campbell County. In October of 2013, the City of Cold Spring assumed the stormwater KPDES water quality and water quantity responsibility from SD1 and began the development of a stormwater MS4 program including working with the PDS GIS System to address the KDOW's Phase II Regulations and the responsibility to identify the storm outfall locations and track with the GIS. Additionally, according to the Business Plan developed by the stormwater technical advisory committee (TAC), the stormwater program will begin provide maintenance assistance to certain drainage facilities within the City of Cold Spring as the funds are available.

Therefore, a decision was made by the City of Cold Spring TAC and consulting team to develop this IDDE process manual and to utilize the GIS information from SD1 and the PDS to create a map of existing drainage facilities within the City of Cold Spring. Each drainage outfall contains a unique facility identification number. This facility ID is contained in the Cold Spring GIS system. A copy of the City of Cold Spring's MS4 outfalls and receiving waters is located in Chapter 12 of this Manual.

MAPPING

Field Data Collection

PDS provided GIS and mapping data for Campbell County including the City of Cold Spring. The City of Cold Spring used the PDS GIS to build the IDDE map and to identify each outfall for the City of Cold Spring. A variety of data will be collected and field identified in the future.

As-Built Data Collection

As-built drawings provide location as well as feature information in a concise manner. The City of Cold Spring will require as-builts (electronic and mylars) to be submitted for all new development drainage infrastructure (including outfalls). The electronic information will be submitted to the City's GIS Department, which is used to update the Stormwater GIS System. This allows the City to maintain a mapping system that contains an accurate, current, and reliable source of information for storm outfalls. The map contained in Chapter 12 of this manual will have to be re-printed on an annual basis to account for new outfalls that have been constructed as a part of new development.

CHAPTER 4 – LOCATING PRIORITY AREAS

IDENTIFYING PRIORITY AREAS

The City of Cold Spring TAC will develop priority areas that are considered to be likely sources of illicit discharges. The following guidelines are considered while identifying priority areas for the City of Cold Spring:

a) Commercial/industrial areas have been found in some communities' IDDE programs to

   - Contain significant numbers of illicit connections and/or
   - Contain discharges with a high potential to affect water quality.

b) Older areas of the City may predate more stringent construction codes regarding illegal connections and may have deteriorating sanitary sewer and/or storm sewer infrastructure that can lead to infiltration problems.

c) Areas where there have been repeated complaints or where illegal dumping or apparently contaminated discharges have been reported are obvious priority targets

CHAPTER 5 – PROHIBITING ILLICIT DISCHARGES

ILLICIT DISCHARGE ORDINANCE

As KDOW'S guidance specifies, a municipal ordinance or other regulatory mechanism created to comply with Phase II regulations must include a prohibition of illicit discharges and an enforcement mechanism. The TAC has developed and approved such an IDDE ordinance in 2014 that includes the legal authority to inspect properties suspected of releasing contaminated discharges into the MS4 and the applicable enforcement mechanism that currently exists in the City of Cold Spring Municipal Code. Therefore, the City of Cold Spring is able to prohibit illicit discharges to the MS4, as well as enforce the elimination and mitigation of any illicit discharges that may occur, through the "Stormwater IDDE Ordinance #14-1002, prohibiting illicit discharges and illicit disconnections to the city's stormwater system approved by city council on April 28, 2014:

The City Council approved IDDE ordinance SECTION 7 DISCHARGE PROHIBITIONS of the City of Cold Spring Municipal Code", states, "No person, company, developer or any other entity shall discharge or cause to be discharged into the MS4 storm drainage system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water".

A. The commencement, conduct or continuance of any illegal discharge to the MS4 storm drain system is prohibited except as described as follows:

i. The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation , springs, non-commercial washing of vehicles, natural riparian habitat or wet-land flows, swimming pools (if dechlorinated - typically less than one PPM chlorine), firefighting activities and street wash water from municipal cleaning operations, and any other water source not containing Pollutants.

ii. Discharges specified in writing by the Code Enforcement Board as being necessary to protect public health and safety.

iii. Dye testing is an allowable discharge, but requires a verbal notification to the Code Enforcement Board prior to the time of the test.

iv. The prohibition shall not apply to any non-storm water discharge permitted under an KPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the United States Environmental Protection Agency (USEPA), provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

B. Prohibition of Illicit Connections.

i. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.

ii. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

iii. A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

iv. The City shall take all necessary steps to abate the nuisance, including all measures cited in Section 14 Enforcement and Penalties of the IDDE ordinance.

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EXAMPLES OF PROHIBITED MS4 DISCHARGES

The following are examples of illicit (illegal) discharges:

Sanitary wastewater sources such as:

- Sanitary wastewater (usually untreated) from improper sewerage connections, exfiltration or leakage;
- Effluent from improperly operating or improperly designed septic tanks; and
- Overflows of sanitary sewer systems.

Automobile maintenance and operation sources such as:

- Untreated (e.g., through a well maintained oil/water separator) commercial car wash wastewaters;
- Untreated radiator flushing wastewaters;
- Untreated engine degreasing wastes;
- Improper oil, gasoline, and other automotive fluids disposal;
- Leaky underground storage tanks; and
- Untreated leaking of oils, gasoline and other automotive fluids for automobiles.

Landscape irrigation sources such as:

- Direct spraying of fertilizers, pesticides or herbicides onto impervious surfaces; and
- Over-application of fertilizers, pesticides or herbicides onto landscaping.

Other sources such as:

- Laundry wastes;
- Non-contact cooling waters;
- Metal plating baths;
- Dewatering of construction sites;
- Washing of concrete ready-mix trucks;
- Contaminated sump pump discharges;
- Improper disposal of household toxic wastes;
- Spills from roadway and other accidents;
- Chemicals, hazardous materials, garbage, and sanitary sludge landfills and disposal sites;
- Commercial use of soaps and detergents; use in cleaning pavement, vehicles and equipment;
- Sediment from lack of or improper maintenance of erosion and sedimentation controls;
- Latex/oil-based paints & solvents;
- Trash and debris: littering and dumping, household or construction waste; and
- Restaurant grease: Improper disposal.

CHAPTER 6 – VISUAL INSPECTION OF THE MS4 – STANDARD OPERATING PROCEDURES (SOPs)

INTRODUCTION

The City Cold Spring's IDDE Outfall Visual Inspection Program (part of this document) has been developed with the purpose to work with the City Administrator and the Public Works Department and city staff to meet the KDOW KPDES permit program and regulations. The Stormwater Engineer and Stormwater Manager will train appropriate City staff to meet the MS4 IDDE program guidelines. The KPDES Permit requires that a program be developed to address the discharge of illicit (non-stormwater) pollutants into the MS4 and report any IDDE incident to KDOW and include in the annual report.

The quality of stormwater entering the waters of the state within the City of Cold Spring will rely on a variety of City staff that will visually monitor the City of Cold Spring MS4 infrastructure. City of Cold Spring staff will receive ongoing training in the detection of pollutants can prevent and help eliminate sources of impurities to the waterways**.** The program for routine inspection, as well as random reporting of illicit discharges by field staff, will be provided annually:

- Scheduled Inspection training for the MS4 infrastructure to meet the KPDES program.
- Scheduled training for random ad hoc reporting of MS4 Illicit Discharges to meet the KPDES program

TRAINING OF SOPs

Existing and new staff will be required to be trained as needed and after each election cycle beginning in 2015. Refresher / update trainings will also be scheduled with field staff to address any changes to and/or concerns with these programs as needed.

CHAPTER 7 – SCHEDULED INSPECTION OF THE MS4 – STANDARD OPERATING PROCEDURES (SOPs)

INTRODUCTION

The City of Cold Spring Stormwater Engineer and Stormwater Manager will work with the TAC to train the City Administrator, and pertinent City Staff to schedule Inspections of the MS4 to be developed to comply with the KDOW's KPDES permit and regulations. The KPDES Permit requires that a program be developed to address the discharge of illicit (non-stormwater) pollutants into the City of Cold Spring's MS4.

The quality of stormwater entering the waters of the state within the City of Cold Spring will rely heavily on the City Administrator, Public Works Departments, city clerk and administrative assistant) personnel with monitoring the stormwater drainage system. City of Cold Spring personnel will be trained in the detection of pollutants can prevent and help eliminate sources of impurities to the waterways. To establish a program for detecting pollutants in storm drain manholes, inlets, and outfalls, a standard procedure has been developed.

OUTFALL VISUAL INSPECTION RATIONALE

In most urban areas, the flow of water from a storm drain system is not a routine event during dry weather periods and, therefore, can be an indicator of illicit discharges (e.g., illegal dumping and unauthorized connections to a MS4). However, dry weather flows from an MS4 can be from other non-stormwater discharges that would not be considered an illicit discharge and are a normal event for some MS4 outfalls (depending on location). These non-stormwater discharges could include: groundwater infiltration into the storm sewer system, irrigation return flow, foundation drain discharges, etc.

Using the assumption that dry weather flows may not always be good indicators of possible illicit discharges in the City MS4, outfall inspections will be conducted focusing on visually conspicuous evidence of possible illicit discharges to the MS4.

The KDOW has provided guidance for the monitoring of an MS4 storm system as follows:

"The permittee shall develop an appropriate monitoring program that evaluates the effectiveness of the MS4 program and provides feedback for the permittee to change or improve the stormwater quality management program appropriately. The MS4 program monitoring plan shall be submitted to the Division of Water for approval before the end of the permit period. The MS4 program monitoring plan, as approved by the Division of Water, shall be implemented in the following permit period.

To be in compliance with this requirement, the monitoring program shall contain the following items at a minimum:

1. A brief narrative of the permittee' s proposed monitoring program.

2. A map of the Urbanized Area showing the outfalls to the waters of the Commonwealth including names of the receiving streams, if available.

3. Using the information contained in the most recent 303 (d) list, provide information on the water quality attainment status (i.e., fully supporting, partial supporting or non-supporting) of the local MS4 receiving streams including the pollutants of concern, if any.

4. An Inspection Checklist for visual monitoring of the outfalls which contains basic information such as date, time, lat/long, dry weather or wet weather, and presence of visual markers for pollution (i.e., excessive algae growth, oily deposits, and excessive sedimentation).

5. Documentation to verify performance of the visual monitoring including, but not limited to, completed Inspection Checklists and photographs.

6. Appendices that could include a glossary of standard procedures, and any reference materials cited

OUTFALL LOCATIONS

According to KDOW a municipal stormwater outfall means a point source where a municipal separate storm sewer discharges to Waters of the United States, but does not include open conveyances connecting two (2) municipal separate storm sewer, or pipes, tunnels or other conveyances which connect segments of the same stream or other Waters of the Commonwealth and are used to convey water of the United States

The City of Cold Spring is in the process of mapping the MS4 outfalls located within the corporate limits. This location information is kept in the Cold Spring's MS4/GIS System, along with other information pertaining to the Stormwater System. The Cold Spring MS4/GIS System is a part of the Planning and Development Services of Campbell County GIS System. As new outfalls are constructed as part of development or capital projects, electronic as-built information, including geo-spatial data, will be used to update the GIS database. For the purposes of this SOP, the terms "end-of-pipe" and "stormwater outfall" will be synonymous.

VISUAL INSPECTION OVERVIEW

This section contains an overview of major outfall visual inspections and inspection documentation procedures. Appendix 6-A contains the visual inspection form, its completion guidance, and a checklist for suggested field equipment.

Definition of an Illicit Discharge:

An illicit discharge is a release to a municipal storm sewer or drainage way that is not composed entirely of stormwater, unless permitted by the KPDES Permit.

Illicit discharges can be categorized as either direct or indirect.

1.0 Examples of direct illicit discharges:

- Sanitary wastewater piping that is directly connected from a home to the storm sewer,
- Materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin,
- A shop floor drain that is connected to the storm sewer, and
- A cross-connection between the sanitary sewer and storm sewer systems.

2.0 Examples of indirect illicit discharges:

- An old and damaged sanitary sewer line that is leaking fluids into a cracked storm sewer line, and
- A failing septic system that is leaking into a cracked storm sewer line or causing surface discharge into the storm sewer.

Typical illicit surface discharges that may be observed by field personnel include:

- Overflows of sanitary sewerage systems;
- Untreated radiator flushing wastewaters;
- Untreated engine degreasing wastes;
- Over-application of fertilizers, pesticides or herbicides onto landscaping and impervious surfaces;
- Dewatering of construction sites;
- Improper washing of concrete ready-mix trucks;
- Commercial use of soaps and detergents: used in cleaning pavement, vehicles and equipment outside;
- Latex/oil-based paints and solvents disposed of in gutters or inlets;
- Restaurant grease: improper disposal;
- Private/Public utilities improperly storing chemicals or maintaining equipment;
- Leaking dumpsters;
- Car lots for used and new vehicles dripping fluids on the pavement;
- Fuel spills;
- Hazardous materials dumped along the roadway; and
- Unidentified substances dumped in secluded areas.

IDDE INCIDENT PROCEDURE ACTION PLAN

Training

The City of Cold Spring Stormwater Engineer and Stormwater Manager will work with the TAC to train the City Administrator, and pertinent City Staff to coordinate and identify the stormwater IDDE responsibilities and to develop appropriate training procedures for the public works and other City staff training. Training on using the Customer Service Illicit Discharge Form as part of the city website (ftp site) will be provided by the Stormwater Manager / Stormwater Engineer.

The reporting of any illicit discharge incident or if any city personnel identifies or observes any potential hazardous incident or if a call is made to the City offices, an immediate call to 911 should be made that officially begins IDDE process. The 911 dispatcher will immediately alerts the Central Campbell County Fire District to take action to address any potential hazardous incident. The Central Campbell County Fire District immediately contacts the The Campbell County Office of Emergency Management (CCOEM) and takes control and authority of the scene. OEM then contacts a Hazmat contractor to clean up the incident.

The Campbell County Office of Emergency Management (CCOEM) maintains a telephone notification system called "On The Alert". On The Alert integrates published telephone database information and available GIS mapping information to allow for specific geographic area notification capability. In the event of a localized emergency, officials can select the affected area on a map of Campbell County and automatically generate a call list.

The primary function of CCOEM is to provide assistance to local jurisdictions and take enforcement action during hazardous materials emergencies. This assistance can take several forms depending upon the incident severity and the capability of local responders. General information on product identification, specific chemical data or incident mitigation advice is available on a 24-hour basis. OEM officers, working with other local or state resources, industry representatives and technical consultants, can provide vital information to emergency responders on scene. CCOEM maintains specialized detection and monitoring equipment, specialized protective clothing and product control devices.

See more at: http://www.campbellcountyky.org/

City staff is required to complete the Illicit Discharge Form regarding the incident to maintain compliance with the KPDES water quality permit. If an illicit discharge is pin-pointed, the city staff should record as much information as possible including the location, time, date, license plate number, and take photos. This information shall be turned over to the stormwater TAC / stormwater engineer and stormwater program manager. The stormwater engineer and/or stormwater manager (or representative) shall in turn perform a field verification of the discharge. The observer need NOT approach the potential violator at the time of the incident.

Safety

Keep safety considerations at the forefront of observation procedures at all times. Likely hazards should be anticipated and avoided. Never approach, contact, or sample a substance if the toxicity is at all suspect. The observation should be investigated in groups of two or more whenever possible. Never open a sealed container to check the contents. If a highly toxic or flammable substance is discovered, City staff should leave the immediate area and call 911 and contact the Central Campbell County Fire District for further action.

INSPECTION LOCATIONS

Field staff shall provide locations of the outfalls through the use of subdivision, street, and descriptive location, and facility ID number (if available). The stormwater facility maps developed by the consultant team using PDS mapping and SD1 information should be utilized to assist the field staff in locating the outfalls.

OBSERVATION AREAS

Certain areas in the City of Cold Spring are more prone to illicit discharges than others. Areas to be more observant in can be identified from past reports and by the stormwater history. The following areas will typically have a higher potential for illicit discharges:

- Commercial/industrial areas,
- Older areas of city that predate more stringent construction codes regarding illegal connections, and
- Areas where illegal dumping or apparently contaminated discharges have been reported.

Field staff may observe dry-weather flows for odor, color, turbidity, and floatable matter. Unusual flows, pungent odors and discoloration or oil substances in the water, stains or waste residues in ditches, channels, or drain boxes are indicators of an illicit discharge. Observe outfalls for deposits and stains, vegetation, and damage to outfall structures.

ALLOWED DISCHARGES

NON-STORMWATER DISCHARGES THAT THE City's IDDE PROGRAM ALLOWS:

- water line flushing
- landscape irrigation
- diverted stream flows
- rising groundwater
- uncontaminated groundwater infiltration
- uncontaminated pumped groundwater
- irrigation return flow
- springs
- water from crawl space pumps
- footing drains
- lawn watering
- individual residential car washing

- discharges from potable water sources
- foundation drains discharges
- air conditioning condensation
- flows from riparian habitats and wetlands
- flows from riparian habitats and wetlands
- dechlorinated swimming pool
- street wash water

FIELD INSPECTION FORMS

The Outfall Visual Inspection Form provides a record of each site visit. An Outfall Visual Inspection Form shall be filled out in the field for all listed outfalls. If a site cannot be inspected, field staff shall record an explanation of the circumstances on the form. The form and instructions for completion are presented in Appendix. A brief description of each part of the Visual Inspection Form follows:

General Information
This section identifies the outfall, lead field staff conducting the inspection, the date and time the outfall was inspected, and approximate days since the last rainfall. Field staff is also asked to verify the map to the location is accurate, and note any incorrect information on the map and inspection form.

End of Pipe Information and Visual Observations
In these sections, field staff record whether water is flowing from the end-of-pipe, the appearance of the water including color, turbidity (muddiness), the presence of petroleum product, and sediment or debris accumulation in the end-of-pipe or ditch. If debris has accumulated in the end-of-pipe, field crews are asked to estimate the amount and describe the type of debris in the Additional Information Section. Field staff will bring inspection forms to a supervisor's attention if a pipe or ditch is more than one-half filled with debris or sediment.

Additional Information
Explanations in response to visual inspection questions, and observations about the site not covered by the form questions, are recorded in this section.

FLAGGED VISUAL INSPECTION FORMS
Inspection forms for sites may be flagged if end of pipes or ditches are greater than 50% filled with sediment or debris. Flagged forms will be considered by the Stormwater Program Manager/Engineer. Corrective maintenance will be performed on outfall sites as needed based on operations criteria. These maintenance activities will be tracked in the Stormwater program GIS System.

COMPLETED VISUAL INSPECTION FORMS
Field staff is required to coordinate with the City Administrator on a monthly (or to be determined) basis as IDDE incidents are discovered. The City Administrator will complete the Customer Service Illicit Discharge Form in the ftp site as needed.

CHAPTER 8 – CUSTOMER SERVICE REPORTING OF MS4 IDDE'S

INTRODUCTION

The City of Cold Spring Customer Service Reporting of MS4 Illicit Discharges SOP has been developed to comply with the KPDES Permit and the City of Cold Spring Illicit Discharge and Detection Ordinance. The Permit requires that a program be developed to address the discharge of illicit (non-stormwater) pollutants into the City's MS4.

The quality of stormwater entering the waters of the Commonwealth within the City relies heavily on City staff monitoring the storm drainage systems. City staff trained in the detection of pollutants can prevent and help eliminate sources of impurities to the waterways. To establish a program for detecting pollutants in storm drain manholes, inlets, and outfalls, a standard procedure has been developed.

DEFINITION OF AN ILLICIT DISCHARGE

An illicit discharge is a release to a municipal storm sewer or drainage way that is not composed entirely of stormwater, unless permitted by the KPDES program.

Illicit discharges can be categorized as either direct or indirect.

Examples of direct illicit discharges:

- Sanitary wastewater piping that is directly connected from a home to the storm sewer,
- Materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin,
- A shop floor drain that is connected to the storm sewer, and
- A cross-connection between the sanitary sewer and storm sewer systems.

Examples of indirect illicit discharges:

- An old and damaged sanitary sewer line that is leaking fluids into a cracked storm sewer line, and
- A failing septic system that is leaking into a cracked storm sewer line or causing surface discharge into the storm sewer.

Typical illicit surface discharges that may be observed by field personnel include:

- Overflows of sanitary sewerage systems;
- Untreated radiator flushing wastewaters;
- Untreated engine degreasing wastes;
- Over-application of fertilizers, pesticides or herbicides onto landscaping and impervious surfaces;
- Dewatering of construction sites;
- Improper washing of concrete ready-mix trucks;
- Commercial use of soaps and detergents: use in cleaning pavement, vehicles and equipment outside;
- Latex/oil-based paints and solvents disposed of in gutters or inlets;
- Restaurant grease: improper disposal;
- Private/Public utilities improperly storing chemicals or maintaining equipment;
- Leaking dumpsters;
- Car lots for used and new vehicles dripping fluids on the pavement;
- Fuel spills;
- Hazardous materials dumped along the roadway; and
- Unidentified substances dumped in secluded areas.

PROCEDURE

Training & Reporting

City Staff has been given basic training at the July 30, 2015 TAC meeting on the types of illicit discharges that may occur. City staff shall be observant in their daily routines to watch for evidence of illicit discharges or unusual flows from the storm drain systems. Cold Spring Citizens shall be aware of the possibility illicit discharges and if found should call the Cold Spring Storm Water Hotline 859-441-6863. Should a suspected discharge be discovered, it should be reported the Campbell County Fire District as described above in the IDDE incident procedure action plan section above.

City staff is required to complete the Customer Service Illicit Discharge Form regarding the incident. The Stormwater Manager has designed the customer service form at part of the City website (the ftp site) to automate the process in order to properly track all stormwater quality customer service inquiries for the annual report required by KDOW on an annual basis. If an illicit discharge is pin-pointed, the city staff should record as much information as possible including the location, time, date, license plate number, and take photos. This initial call and information prepared and sent to the city ftp site by the City Administrator and/or staff, will automatically inform the Stormwater Manager and Stormwater Engineer. The Stormwater Manager and Stormwater Engineer will follow up with the inquiry accordingly and add the inquiry / complaint to the database tracking system in order to comply with the KPDES annual reporting compliance reports. The stormwater engineer and/or stormwater manager (or representative) shall in turn perform a field verification of the discharge if applicable. The observer need NOT approach the potential violator at the time of the incident.

SAFETY

Keep safety considerations at the forefront of observation procedures at all times. Likely hazards should be anticipated and avoided. Never approach, contact, or sample a substance if the toxicity is at all suspect. The observation should be investigated in groups of two or more whenever possible. Never open a sealed container to check the contents. If a highly toxic or flammable substance is discovered, City staff should leave the immediate area and call 911 and contact the Central Campbell County Fire District for further action.

OBSERVATION AREAS

Certain geographic areas in the City of Cold Spring are more prone to illicit discharges than others. Areas to be more observant in can be identified from past reports and by the stormwater history. The following areas will typically have a higher potential for illicit discharges:

- Commercial/industrial areas,
- Older areas of City that predate more stringent construction codes regarding illegal connections, and
- Areas where illegal dumping or contaminated discharges have been reported.

Staff may observe dry-weather flows for odor, color, turbidity, and floatable matter. Unusual flows, pungent odors and discoloration or oil substances in the water, stains or waste residues in ditches, channels, or drain boxes are indicators of an illicit discharge. Observe outfalls for deposits and stains, vegetation, and damage to outfall structures.

ALLOWED DISCHARGES

NON-STORMWATER DISCHARGES THAT KDOW ALLOWS:

- water line flushing
- landscape irrigation
- diverted stream flows
- rising groundwaters
- uncontaminated groundwater infiltration
- uncontaminated pumped groundwater
- discharges from potable water sources
- foundation drains
- air conditioning condensation
- flows from riparian habitats and wetlands
- irrigation return flow
- springs
- water from crawl space pumps
- footing drains
- lawn watering
- individual residential car washing
- flows from riparian habitats and wetlands
- dechlorinated swimming pool discharges
- street wash water

ILLICIT DISCHARGE OBSERVATION FORM

The City of Cold Spring Customer Service Illicit Discharge Form provides a record of each field observation of an illicit discharge. An Illicit Discharge Observation should be documented using the Customer Service Illicit Discharge Form and document on the ftp site when a suspected illicit discharge event occurs. Training on using the Customer Service Illicit Discharge Form as part of the ftp site will be provided by the Stormwater Manager / Stormwater Engineer.

FOLLOW-UP INSPECTIONS

Follow up inspections will be conducted by the Stormwater Supervisor/Crew Leader. If additional maintenance activities are needed, appropriate maintenance staff will be contacted by Supervisor/Crew Leader and the maintenance activities will be tracked using the existing Stormwater maintenance program.

COMPLETED ILLICIT DISCHARGE OBSERVATION FORMS

If a potential illicit discharge is identified, city and/or field staff will contact the City Administrator who will, in turn, complete the Customer Service Illicit Discharge Form in the ftp site. The Stormwater Manager / Stormwater Engineer will be automatically informed from the ftp site and will address and track the inquiry / issue as previously described above.

CHAPTER 9 – TRACING AND TRACKING AN ILLICIT DISCHARGE SOURCE – SOP

INTRODUCTION

Reporting of an illicit discharge in the City of Cold Spring MS4 will occur through citizen observation, the stormwater hotline, city staff, City web-site, or other miscellaneous means. Once a report is received, the following steps will be addressed:

Reported in Mapped MS4 area

Reports received in the City MS4 area that has been previously mapped can be traced using the City of Cold Spring MS4 stormwater Geographic Information System MS4/GIS. The MS4/GIS will allow the user to move upstream or downstream from the sighting of the illicit discharge. The MS4/GIS includes all types of drainage facilities that can assist the user in tracing the source of an illicit discharge, or where the illicit discharge ultimately will travel within the storm system. Notes should be taken by field staff during the tracing/tracking of the illicit discharge that could then be transferred to the Customer Service Form.

Inactive Illicit Discharge Reporting

Through field observation or citizen reporting there may be the instance where an illicit discharge is untraceable or within drainage facilities that have not been mapped. There are a variety of techniques available for use in tracing an illicit discharge. In addition to the ones mentioned above, the following techniques may be considered: manhole observation, video inspection, smoke testing, dye testing, aerial infrared and thermal photography, and tracking illegal dumping. Procedures for these processes are discussed below.

OTHER TRACING OPTIONS

The following are possible options for tracing illicit discharges in the City of Cold Spring MS4:

MANHOLE OBSERVATIONS

A key tracing technique is to follow dry-weather flows upstream along the conveyance system to bracket the location of the source. This can be accomplished by taking the following steps:

- Consult the MS4 map for any information that may be available for the area.

- Check the next “upstream” manhole with a junction to see if there is evidence of discharge. Consider sampling each manhole that has a discharge.

- Repeat these steps until a junction is found with no evidence of discharge; the discharge source is likely to be located between the junction with no evidence of discharge and the next downstream junction.

- Be aware of the surrounding areas and look for water in gutters and streets.

Manhole observations can be time-consuming, but they are generally a necessary step before conducting other tests.

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 videocassette or DVD. City staff can observe the videos and note any visible illegal connections. This technique is time-consuming and expensive but thorough and usually definitive, and it does not require the intrusion on members of the public that some of the other methods do.

SMOKE TESTING

This technique involves injecting non-toxic smoke into storm sewer lines and then noting the emergence of smoke from sanitary sewer vents in illegally connected buildings or from cracks and leaks in the storm sewer lines. The injection is accomplished by placing a smoke bomb in the storm sewer manhole below ground and forcing air in after it. Smoke-generating machines can also be used. Test personnel will be stationed at points of suspected illegal connections or cracks/leaks, noting any escape of smoke (indicating an illicit connection or damaged storm sewer infrastructure). Prior to performing this test, it is necessary to inform building owners and occupants in the area in advance. It is also advisable to inform the police and fire departments.

For a more thorough smoke-test program, the sanitary sewer lines can also be smoked. For houses that do not emit smoke during either the sanitary sewer or the storm sewer system tests, sewer gas may be venting inside, which is hazardous. Interviews with various IDDE program staff at other permitted MS4s suggest that the smoke-test method is more effective in infiltration/inflow investigations of the sanitary sewer system than in detecting illegal connections to the storm sewer system.

Smoke may cause minor irritation of respiratory passages; residents with respiratory conditions should receive special attention to determine if it is safe for them to be present for the testing. Smoke testing is typically used to survey an area all at once, in contrast to dye testing, which tests one building at a time.

DYE TESTING

This technique involves flushing non-toxic dye into toilets and sinks and observing storm sewer and sanitary sewer manholes and storm sewer outfalls for the presence of the dye. Prior to performing this test, it is necessary to inform building owners and occupants in advance and gain permission for entry.

To perform the test, a crew of two or more people is needed (ideally, all with two-way radios). One person is inside the building; the others are stationed at the appropriate storm sewer and sanitary sewer manholes (which should be opened) and/or outfalls. The inside person drops dye into a plumbing fixture (i.e., toilet or sink) and runs a sufficient amount of water to move the dye through the plumbing system. The inside person then radios to the outside crew that the dye has been dropped, and the outside crew watches for the dye in the storm sewer and sanitary sewer, recording the presence or absence of the dye.

The test is relatively quick (about 30 minutes per test), effective (results are usually definitive), and cheap. Dye testing is best used when the likely source of an illicit discharge has been narrowed down to a few specific houses or businesses.

AERIAL INFRARED AND THERMAL PHOTOGRAPHY

Aerial infrared and/or thermal photography can be used to locate illicit discharges from outfalls and failing septic systems using temperature and vegetation as markers. This technique requires knowledge of aerial photo interpretation. When using aerial infrared or thermal photographs, do the following:

1. For outfalls -

    - Note if discharge has a higher temperature than that of the stream; and
    - Note if algae growth is concentrated near an outfall.

2. For potentially failing septic systems -

    - Note evidence of increased moisture in surrounding soil;
    - Observe vegetation located close to the potentially failing septic system, and note any increase in vegetation compared to the surrounding area; and

- Observe any increase in temperature readings at the septic system location.

This is still a developing technology and not commonly used for IDDE programs. Further tests may still be needed to determine specific houses/businesses with illegal connections. This technique has been used primarily for the detection of failing septic systems, which are only considered “illicit discharges” under the Phase II Stormwater program if they discharge into the storm sewer system.

TRACKING ILLICIT DISCHARGE EVENTS

The City of Cold Spring Stormwater Manager will track all stormwater quality inquiries and customer service issues through the ftp site. This database will include information on date of inspection, type of discharge, location of facility, source of discharge, follow-up action needed jurisdiction and maintenance responsibilities, type of mitigation used and comments on site. In addition, if available, costs of action taken will be included in the information collected.

CHAPTER 10 –TRACKING AN ILLICIT DISCHARGE EVENT AS PART OF THE WEBSITE (FTP SITE) – SOP

INTRODUCTION

The purpose of this SOP Manual is to establish a procedure for tracking information gathered by the City of Cold Spring IDDE Program. Tracking the data in the ftp site will provide automate the entering of the information and will automate and simplify the tracking of each incident and customer service inquiry that will streamline the process of determining priority areas, tracing sources of illicit discharges and removing sources of illicit discharges. Tracking the data in the ftp site will play an important role in the evaluation and refinement of the Program. In addition, the ftp site tracking database will save the City money, automating the process of reporting the information required by the MS4 Permit annual reporting for the Kentucky Division of Water.

It is important that the appropriate information be gathered and documented when responding to an illicit discharge report. In some cases, the incident may require legal action. Legal enforcement and/or penalties may depend upon the integrity of the information that is gathered at the scene.

In extreme, rare cases, the incident could become the focus of a judicial process that would require the first staff person on site to provide valuable information, and possibly testimony and evidence. For that reason, it is necessary to be as thorough as possible on the initial investigation.

PROCEDURE

Items that will be tracked in the IDDE ftp site database include:

1. Number of inspections (routine and suspected illicit discharge),
2. Number of traced illicit discharges, by method (routine inspection, public complaint, dye testing, etc.), and
3. Number of illicit discharge sources eliminated.

The following items shall be collected and entered into the Inspection Form database:

a) Date and time of inspection,
b) Type of inspection (routine or suspected illicit discharge),
c) Location of facility inspected,
d) Presence of illicit discharge, including:
   - Type of illicit discharge,
   - Source of illicit discharge,
   - Action taken, and
   - Maintenance (needed or provided).

The following additional items may be tracked if available:

- Entities involved in any actions taken,
- Cost of actions taken, and
- Cost of tracking illicit discharge, by method.

CONCLUSION

It is important to remember that the IDDE Inspection Report items being tracked represent only a small portion of the total information provided. All inspection forms shall be properly filed so that they can be retrieved for further analysis/comparison, legal evidence, or for a KDOW audit.

CHAPTER 11 – ILLICIT DISCHARGE REPORTING AND RESPONSE

INTRODUCTION

Reports for illicit discharges can be received from a variety of sources. City staff, residents, and individuals passing through the area may report a potential illicit discharge in the City. To respond to these reports, the following procedure has been developed.

PROCEDURE

Contact is made with the Cold Spring Staff or from a citizen complaint, Cold Spring City Council, Technical Advisory Committee (TAC), Fire Department and/or Police Department reporting a potential Illicit Discharge. Any City Staff should call 911 and then document the initial information on the spill event and create a Customer Service Request. The service request should be forwarded to the Stormwater Program Manager, Stormwater Engineer, City Administrator, Mayor, and the City Attorney and/or the stormwater TAC members.

Administrative staff receiving the call must fill out as much information as available on the Customer Service Illicit Discharge Form in the ftp site. The initial paperwork completed by staff receiving the call will be automatically forwarded to the Stormwater Program Manager/Engineer for completion and for data tracking purposes.

Field verification should occur within the first 24 hours of the reported incident.

A reported incident that is perceived to be immediately dangerous to life or health will be acted upon immediately. This process shall include the following:

-Notification Call to 911
-Notification of Central Campbell County Fire District
-Notification of Cold Spring Police Department
-Notification of the Cold Spring Stormwater Program Manager and Stormwater Engineer
-Notification of Cold Spring Public Works Supervisor
-Notification of Cold Spring City Attorney
-Notification of Cold Spring TAC Members

Any incident involving the release of an unknown, hazardous material, or suspected hazardous material will be responded to by calling 911 and then immediately contact the Central Campbell County Fire District and/or Police Department.

If the product in question does not pose an immediate threat to life, property, or the environment is not considered a hazardous material and no criminal activity is suspected, the City may elect not to contact the City of Cold Spring Fire Department or Cold Spring Police Department. Field staff will do proper containment of the discharge and, if needed, proper disposal of the mitigation materials will occur. If the spill is too

large for Field staff to contain, a contracted spill containment company will be contacted for mitigation. The incident shall be referred to the City Clerk and Stormwater Program Manager for follow-up to ensure proper clean-up. In any event, the recipient will ensure that the agencies involved in the IDDE task force are notified of the report at the earliest opportunity.

Field staff responding to the incident/report must follow the procedures included in Chapter 8 and fill out the form contained in Appendix C. The completed form in the ftp site will automatically be forwarded to the Stormwater Program Manager for data tracking.

Many times, the product dictates the response. However, the incident objectives remain the same:

-Life safety of the responder.
-Life safety of the public.
-Safety of property
-Protection of the environment.

The purpose of a response on the part of the City staff shall be to ensure the safety of all persons, halt the spread of the substance whenever possible (if determined to be non-hazardous), issuance of a clean-up order/notice of violation, and documentation of events. The City of Cold Spring is not a cleanup organization. An authorized cleanup contractor will complete cleanup activities.

CHAPTER 12 – REMOVING THE SOURCE OF AN ILLICIT DISCHARGE

INTRODUCTION

Because there are various sources of illicit discharges to the storm sewer system, there are different kinds of actions the City may have to take to remove those sources and prevent future illicit discharges. This chapter groups those actions into three categories:

- Compliance assistance and enforcement for illegal connections to homes and businesses
- Proper construction and maintenance of MS4s
- Responding to and preventing illegal dumping.

COMPLIANCE ASSISTANCE AND ENFORCEMENT FOR ILLEGAL CONNECTIONS TO HOMES AND BUSINESSES

There is a range of ways in which the City may wish to handle the removal of illegal connections between homes or businesses and the storm sewer system. However, the City will use judgment about what mix of compliance assistance and enforcement actions is appropriate in a given situation. Typically, the City responds to the discovery of an illegal connection in a graduated manner, beginning with efforts to obtain voluntary compliance and escalating to increasingly severe enforcement actions if compliance is not obtained.

Voluntary Compliance

Often, home or business owners are not aware of the existence of illegal connections between their buildings and the storm sewer systems. In these cases, providing the responsible party with information about the connection, its environmental consequences, the applicable regulations, and how to remedy it may be enough to secure voluntary compliance. The cost of removing the connection and reconnecting it to the sanitary sewer system can be an obstacle.

Enforcement

Based upon the findings of the City Staff, it may be necessary to proceed with the following IDDE enforcement steps through the City of Cold Spring Code Enforcement as defined in the City of Cold Spring IDDE Ordinance:

- If the discharge of dumping has been deemed a threat to Public Health, Safety and/or Welfare, and/or poses a threat to public property based upon Code Enforcement or Stormwater Engineer, the violation may be abated immediately without prior notification. The City maintains the right to recoup any costs associated with the abatement of this violation.

- Otherwise, a Notice of Violation will be personally served to the property owner, contractor and/or any parties responsible for creating the

violation(s); and/or the property may be posted giving 24 hours or sooner to abate the violation. If there is no compliance within the time given, the city may abate this violation at the expense of the property owner, contractor or parties creating the violation.

- If the discharge or dumping is not a threat to Public Health, Safety, and/or Welfare, or there is no threat to public properties a Notice Violation shall be sent certified mail to all responsible parties, including the property owner, contractor, and/or parties creating the violation.

- In addition, the City may seek enforcement action from Campbell County, State or Federal authorities if the violation impacts other resources or the violation source is outside of the City Boundaries.

PROPER CONSTRUCTION AND MAINTENANCE OF MS4s

Some illicit discharge problems may be the responsibility of the City and/or other entities such as Sanitation District # 1 (SD1).These problems include cross-connections between the sanitary sewer and storm sewer systems and infiltration into damaged or deteriorating storm sewer pipes.

Cross-connections between a SD1's sanitary sewer and the City's MS4 may exist by mistake, because of deterioration over time, or as part of the design in an antiquated system. Complete and accurate maps of the sanitary sewer and storm sewer systems can help identify these cross-connections and prevent them during any new construction that takes place.

Contamination can infiltrate into a cracked or leaking MS4 from leaking sanitary sewer pipes, failing septic systems, or contaminated groundwater. To help prevent this, both MS4s and sanitary sewer systems should be inspected periodically and maintained properly to keep them in good repair.

PREVENTING AND RESPONDING TO ILLEGAL DUMPING

It is often difficult to identify and locate the individual(s) responsible for illegal dumping; therefore, a program to address illegal dumping should focus on education and prevention, backed up by enforcement to the extent possible.

The following key strategies can be used to prevent illegal dumping:

- **Site maintenance and controls.** Measures should be taken to clean up areas where illegal dumping has taken place, and controls such as signs or access restrictions should be used, as appropriate, to prevent further dumping.

- **Community outreach and involvement.** Outreach is the linchpin of an illegal- dumping prevention program and can include the following components:

    - Educating businesses, City employees, and the general public about the environmental and legal consequences of illegally disposing of waste into the MS4.

    - Providing and publicizing ways for citizens to properly dispose of waste.

    - Providing opportunities for citizens to get involved in preventing and reporting illegal dumping.

- **Targeted enforcement.** This strategy includes City prohibition against illegal dumping backed up by City of Cold Spring Police Department, City of cold Spring Fire Department personnel, and possibly field maintenance operations.

- **Program measurement.** Tracking and evaluation methods will be used to measure the impact of illegal-dumping prevention efforts and determine whether goals are being met.

Some specific methods that the City might use to implement these strategies include the following:

1. Site maintenance and controls

    - Storm-drain stenciling program.

    - Spill-response plans for hazardous-waste spills.

2. Community outreach and involvement

    - The Stormwater Hotline (859-441-6863).

    - Outreach to business sectors that handle hazardous materials and/or have a history of illegal-dumping problems; outreach should include information on BMPs for spill prevention and proper waste disposal.

    - Printed outreach materials for the public (Cold Spring Newsletter). Does the newsletter go to businesses

- Publicizing of waste-disposal options such as:

    - The recycling and household hazardous waste collection event held annually referred to as the Hazardous Waste Collection Event held at the Florence Freedom Stadium in the fall. This Hazardous Waste Collection and Recycling Event will be advertised in the Newsletter and City of Cold Spring website.

    - The Campbell County Fall Litter Clean-Up and Abatement Program recycling Event will be held in the fall will be advertised in the Newsletter and City of Cold Spring website.

3. Targeted enforcement

    - An illegal-dumping regulatory mechanism.
    - Surveillance of known illegal-dumping locations.
    - Business facility inspections.
    - Training of City employees, City of Cold Spring employees.

4. Program measurement

    - Tracking of incident locations.
    - Compilation of statistics (e.g., annual cleanup costs, facility compliance, arrests, convictions, fines, complaints).

CHAPTER 13 - EVALUATION OF THE IDDE PROGRAM

INTRODUCTION

The MS4 Permit recommends that the IDDE Manual include procedures for program evaluation and assessment. Program evaluation is the time to step back, look at what has been done, determine what worked and what didn't, and make adjustments to planned future actions as appropriate in the City. This final component of the City's IDDE Manual outlines how the City will go about evaluating its IDDE Program.

EVALUATION STRATEGY

Evaluation procedures will include documentation of actions taken to locate and eliminate illicit discharges. Such documentation will include numbers of outfalls screened, complaints taken and investigated feet of storm sewers videotaped (if any), numbers of discharges eliminated, and number of dye or smoke tests conducted (if any). Note that this component of the IDDE Manual fits in with the overall Phase II requirements for identifying measurable goals for each BMP and reporting on progress toward achieving those goals.

Determining the impact of these actions is more of a challenge, but it is an important part of the overall process because the KDOW allows for adjustments to the stormwater management program over the life of the permit. Assessment of what worked and what didn't provides the information needed to make these adjustments to the City's IDDE Program.

Some steps for assessing the effectiveness of the City's IDDE strategies include:

1. Evaluate the number of possible illicit discharges that were detected using different detection methods, to help determine which detection methods are most effective.

2. Evaluate the number of discharges and/or quantity of discharges eliminated using different possible enforcement and compliance measures.

3. Program evaluation will also include procedures for considering efficiency and feasibility. Questions to answer include:

    - How much staff time and expense did it take to achieve a given result?

    - Were practical difficulties encountered with this approach?

    - What were they, and how much of a problem did they present?

The strategies listed above are only suggestions. Because the City is allowed a great deal of flexibility in determining what procedures it will use for program evaluation and assessment, the procedures that will be most helpful in providing the information needed to move forward with the IDDE Program will be decided as the Program develops.

CHAPTER 14 – IDDE MS4 PROGRAM OUTFALLS MAP

INTRODUCTION

The MS4 Permit regulations require that the City of Cold Spring must develop a stormwater map that demonstrates all of the stormwater outfalls on the map including stormwater system connected to the outfalls that can be traced in order to identify any hazardous issues that may arise in the future. The City of Cold Spring map was created using the PDS and SD1 GIS that contains the following GIS features

- Storm Lines – channels, swales, pipes, inferred pipes, inferred channels, culvert pipes and proposed pipes;
- Storm Structures – Catch basins, channel points, manholes, pipe outlets, pipe inlets, culvert points, ditch points, bridges, stubs and splices;
- Topography – drainage elevations; and
- Detention/Retention Basins.

PURPOSE

The purpose of the IDDE map is for the City of Cold Spring to maintain an accurate map that will provide the following water quality benefits can be used for emergencies to quickly and efficiently trace any hazardous spills or events that may occur in the future:

- Maintain and manage the stormwater quality system annually
- An accurate map of the stormwater system for emergencies

MAP DEVELOPMENT PROCESS

The initial step in the process of developing the IDDE map that identified 19 outfalls includes the following:

- Using the PDS GIS

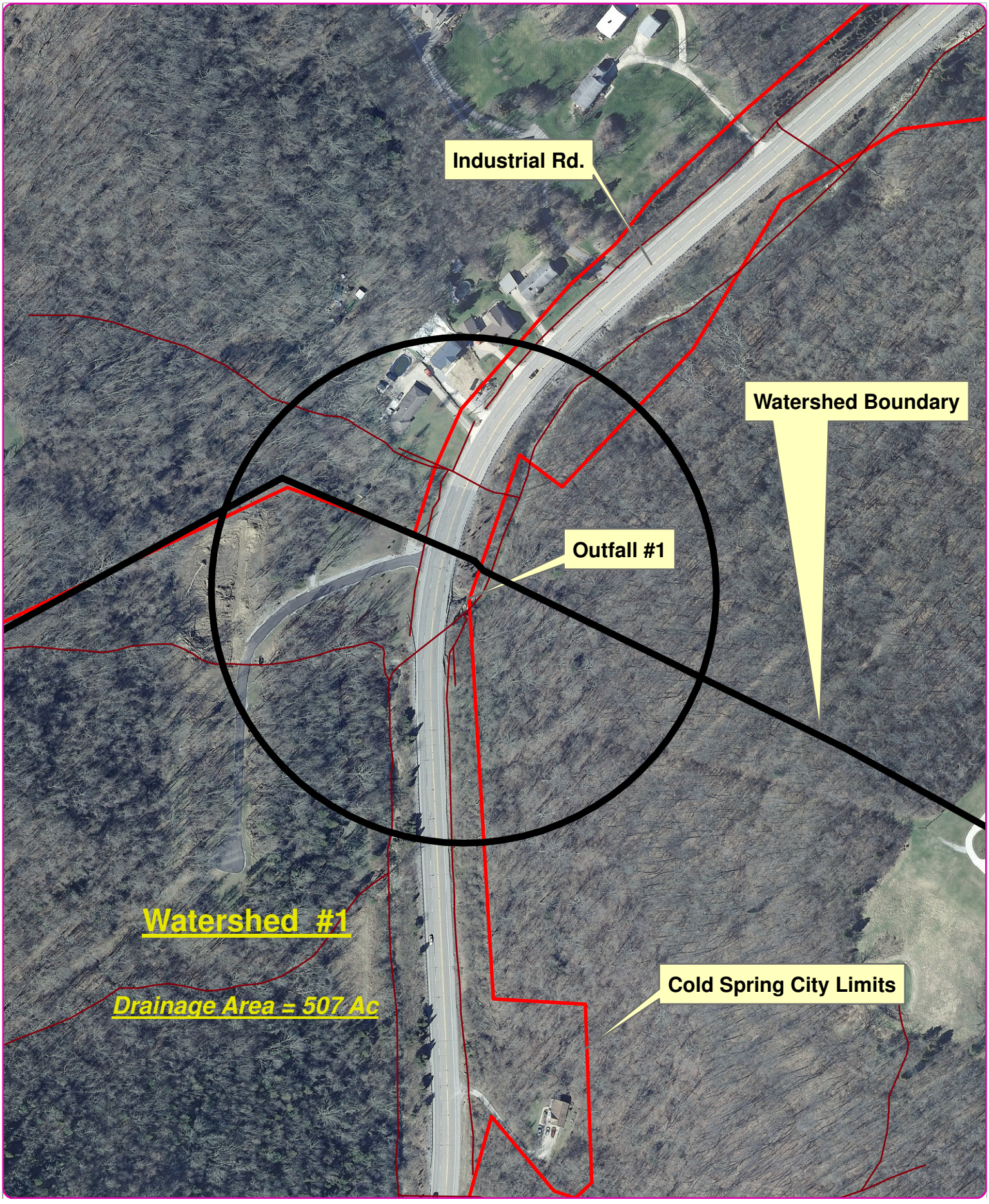
    1. Split the storm line shapefile into seven individual shapefiles (proposed pipe, inferred pipe, pipe, swale, channel, culvert pipe and inferred channel);
    2. Using the topography shapefile, the city boundary, the aerial photography and the stormlines shapefile, identified the major outfalls from the city into the surrounding county property;
    3. Created a polygon and associated attribute table for each of the 19 major outfalls;
    4. Manually identified the channels, pipes, swales, culvert pipes, inferred pipes, inferred channels and proposed pipes that drain to each outfall;
    5. Created a layer containing the components for each of the 19

outfalls;
6. Created a data query and added the individual components of each outfall to the attribute table;
7. Created maps showing all of the outfalls and each outfall individually.

APPENDIX A – Citywide Outfall Map

City of Cold Spring Storm Water Program

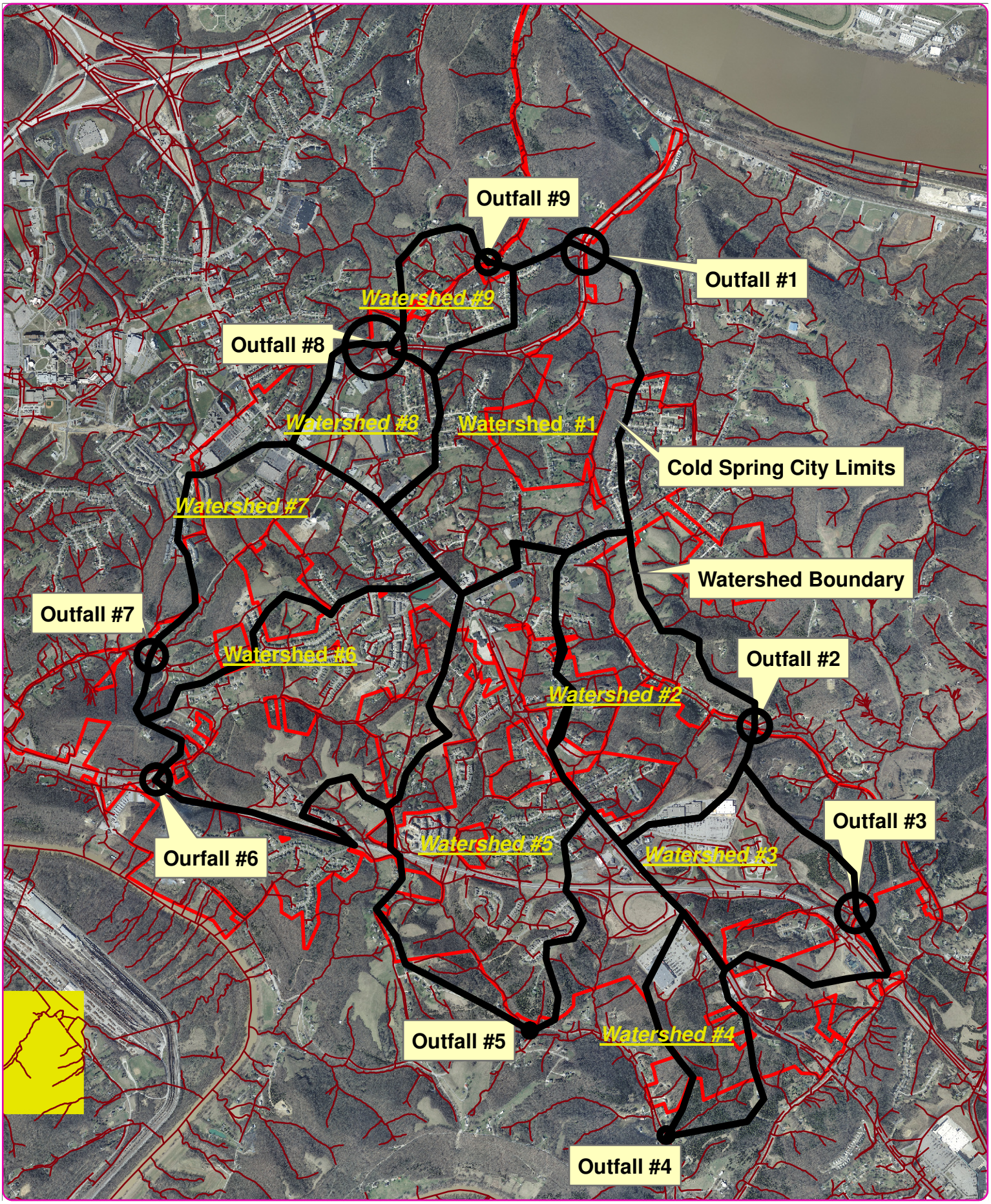
Outfall #1



APPENDIX B – Example Outfall Detailed Mapping

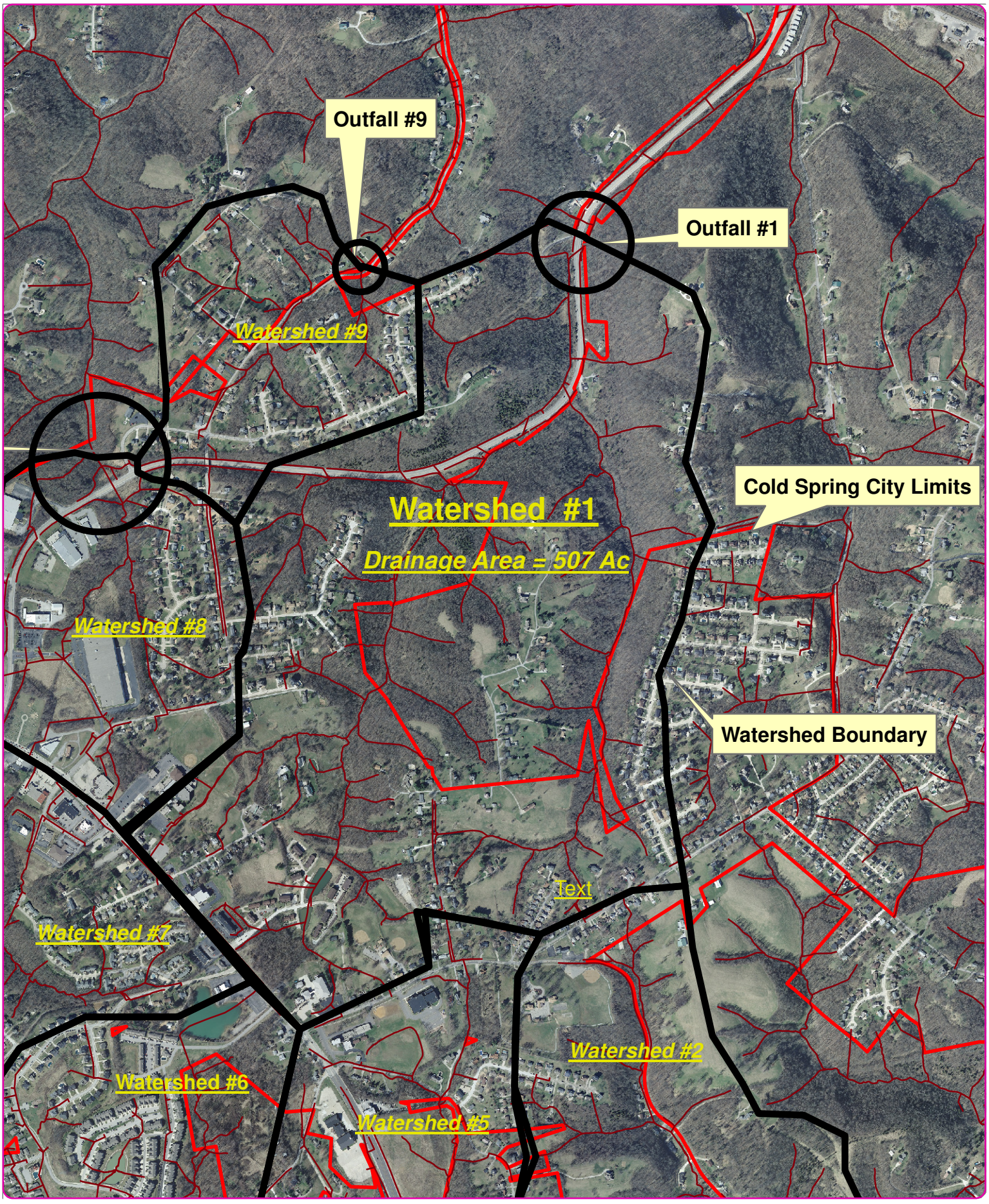
City of Cold Spring Storm Water Program

Outfall & Watershed Map



City of Cold Spring Storm Water Program

Outfall #1 & Watershed #1



APPENDIX C – Customer Service & IDDE Inspection Form

CUSTOMER SERVICE AND ILLICIT DISCHARGE REPORT

CITY OF COLD SPRING

DATE:		**TIME:**		**REPORT NO:**	
PARCEL NO(s):				**ADDRESS:**	
PROPERTY OWNER:					
PHONE:		**EMAIL:**			
RESPONDER:					

NARRATIVE/BACKGROUND:

ACTIONS					
ACTION:		**REP:**		**DATE:**	
ACTION:		**REP:**		**DATE:**	

CONCLUSIONS:

Primary Location Description	**Secondary Location Description**		
☐ Stream corridor *(in or adjacent to stream)*	☐ Outfall	☐ In-stream flow	☐ Along banks
☐ Upland area *(Land not adjacent to stream)*	☐ Near storm drain	☐ Near other water source (storm water pond, wetland, etc.)	
Narrative description of location:			

Upland Problem Indicator Description		
☐ Dumping	☐ Oil/solvents/chemicals	☐ Sewage
☐ Wash water, suds, etc.	☐ Other: _____	

Stream Corridor Problem Indicator Description				
Odor	☐ None	☐ Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural gas	☐ Other: Describe in "Narrative" section		
Appearance	☐ "Normal"	☐ Oil sheen	☐ Cloudy	☐ Suds
	☐ Other: Describe in "Narrative" section			
Floatables	☐ None	☐ Sewage (toilet paper, etc.)	☐ Algae	☐ Dead fish
	☐ Other: Describe in "Narrative" section			

Narrative description of problem indicators:

Suspected Violator (name, personal or vehicle description, license plate #, etc.):

RECOMMENDATIONS /FOLLOWUP:

1.

PHOTO LOG:

PHOTO LOG:

APPENDIX D - Scheduled Inspection of the MS4 Observation Form

City of Cold Spring Storm Water Program
Storm Outfall Inspection Form

Location Information

Date: **Inspector:**

Time:

Outfall ID:

Outfall Location:

Receiving Waterbody:

Source of flow: Groundwater Irrigation Condensate Residual stormwater unknown

Weather: **Approximate Temp:** **Wind Present:** Yes No

Precipitation in the past 3 days: Yes No

Flow: None Trickle Steady High

Color (if flow is present):

Inspection Information *Circle all that are applicable*

Obvious Debris/Pollution:

None
Brownish Foam
Floating Green Scum
Oil / Film/ Sheen
Organic Material (plant debris, dead animals)
Trash and Debris
White Foam
Sewage Material

Odor:

None/Natural
Musty
Sewage/septic

Water Clarity:

Clear
Cloudy
Opaque

Additional Information

Sediment in structure/channel: Open 1/4 Full 1/2 Full 3/4 Full Plugged

Sediment around grate: Yes Source: No

Structure Condition: Excellent Good Fair Poor

Trash/litter present in area: Yes No

Erosion, slides, rilling on adjacent hillsides, ditch or channel sides: Yes No

Nearby activities that could impact stormwater quality or creek : Yes No (If yes – describe)

Description of activities:

General Comments:

Actions Taken:

Follow up required: Yes No Specify on Corrective Action Sheet

CORRECTIVE ACTIONS

Location:_____ Date: _____

List all follow-up items identified during the inspection

Corrective Action	Initials	Date Completed