



**ENGINEERING DIVISION STANDARD OPERATING
PROCEDURE**

**Illicit Discharge Detection and Elimination – Outfall and Priority
Area Inspections-Dry Weather Sampling**

SOP Identification No: SOP-IDDE 3.3.1

BMP No: 3.3.1

PURPOSE:

To provide a uniform procedure for collecting water samples from suspect illicit discharges during dry weather .Water samples will be collected from stormwater sewer outfalls within the City of Raymore MS4 Service area.

CONTACT:

Stormwater Quality Specialist	Telephone No. (816)-582-5326
Engineering Department	Telephone No. (816)-331-1842
Operations/Maintenance Dispatch	Telephone No. (816)-331-2377
Code Enforcement	Telephone No. (816)-331-1803
KCMO Water Laboratory Director	Telephone No. (816) 513-7000

PROCEDURE:

1. Dry weather sampling will be conducted when a dry weather discharge has been reported and inspected by an inspector and the inspector identifies, observes or suspects an illicit discharge. A staff member will be assigned to conduct the sampling of the observed or suspected illicit discharge.
2. A staff member will confirm that the required equipment and supplies are loaded in their vehicle. Gather and load an adequate supply of sample containers and coolers from the Kansas City Water Laboratory. Refer to the Field Equipment List below.
3. The staff member will confirm the location of the identified outfall to be sampled prior to leaving the office. Proceed to the reported outfall location
4. Prepare for sampling while following proper safety procedures, such as safety cone placement and safety vests in traffic areas, goggles, gloves, etc. Note: never enter a manhole or other confined space to collect a sample. Use a sampler with an extension arm or other method to collect samples out of reach. Contact Public Works Operations for further assistance if required.
5. The staff member will visually inspect the suspected illicit discharge for the types of pollutants reported by the inspector.
 - a. If a discharge is definitely, or is believed to be, dangerous, toxic or hazardous, do not proceed with sampling. Immediately contact the Fire Department for the HazMat crew to respond.

- b. If a discharge is suspected to be a sanitary system leak or related discharge, contact the Operations Division Dispatch for Superintendent.
- c. If the results of the on-site total chlorine test indicate the discharge may be a water supply or leak problem, contact the Operations Division Dispatch for Superintendent.
6. The staff member will collect grab samples of the reported and inspected discharges. Collect duplicate samples for Quality Assurance/Quality Control (QA/QC) reasons.
7. While at the site, the staff member will perform the following steps:
 - a. Test the samples for temperature, total chlorine and pH. A list of sampling analyses, parameters and suspected pollutants is listed below.
 - b. Assign each sample a unique sample number, to include the outfall number (or other location identifier), date and time.
 - c. Document with notes on the Illicit Discharge Report any observations made in the field and samples collected. If possible, photograph the outfall or discharge.
 - d. Complete sample labels and the Chain of Custody Record Form.
 - e. Preserve samples as required by the laboratory by keeping samples chilled in a cooler
8. Staff member shall deliver samples to the laboratory for analysis the same day that the sampling collection was made. Note: The bacteria and surfactants have very specific holding times on the samples. This means the laboratory analysis must start within a specified number of hours from sample collection for the analysis to be accurate. Bacteria have an 8 hour hold time and surfactants have a 48 hour hold time.
9. Sign the Chain of Custody Record Form and submit it to the Laboratory Director/Staff.
10. The laboratory staff will proceed with a laboratory analysis for the various parameters listed below. Results of the testing are reported to the Stormwater Quality Specialist..
11. If enforcement action or system repairs are required, the Stormwater Quality Specialist will contact Operations/Maintenance Dispatch, Codes Enforcement or the tracked source of the discharge.
12. The Stormwater Quality Specialist will commence with source investigation, any enforcement actions and source tracking consistent with **SOP- IDDE 3.4 and SOP- IDDE 3.5** .

FIELD EQUIPMENT LIST:

- Safety gear: boots, safety glasses, hard hat Chemical resistant gloves, disposable
- Sample containers
- Preservatives, if applicable to type of samples collected
- Cooler with ice or ice packs
- Sample labels and chain-of-custody forms
- Field notebook or sampling form
- Camera
- Cell phone or radio
- GPS device or Map

Parameter	Lab or Field Analysis	Suspect Pollutant Source
Bacteria, E. Coli	Laboratory	Sewage
Surfactants/detergents	Laboratory	Sewage, wash water, Industrial/commercial wastewater
Metals	Laboratory	Industrial/commercial wastewater
Chlorine	Field	Swimming pools, wash water, Industrial/commercial wastewater

Ammonia	Laboratory	Sewage, wash water, Industrial/commercial wastewater
Potassium	Laboratory	Industrial/commercial wastewater
pH	Field and/or Laboratory	Industrial, wash water
Temperature	Field	Sewage, Industrial/commercial wastewater

Documentation:

File and save all completed forms.

Review outfall inspection forms on an annual basis to look for patterns of illicit discharge and to evaluate the inspection process.