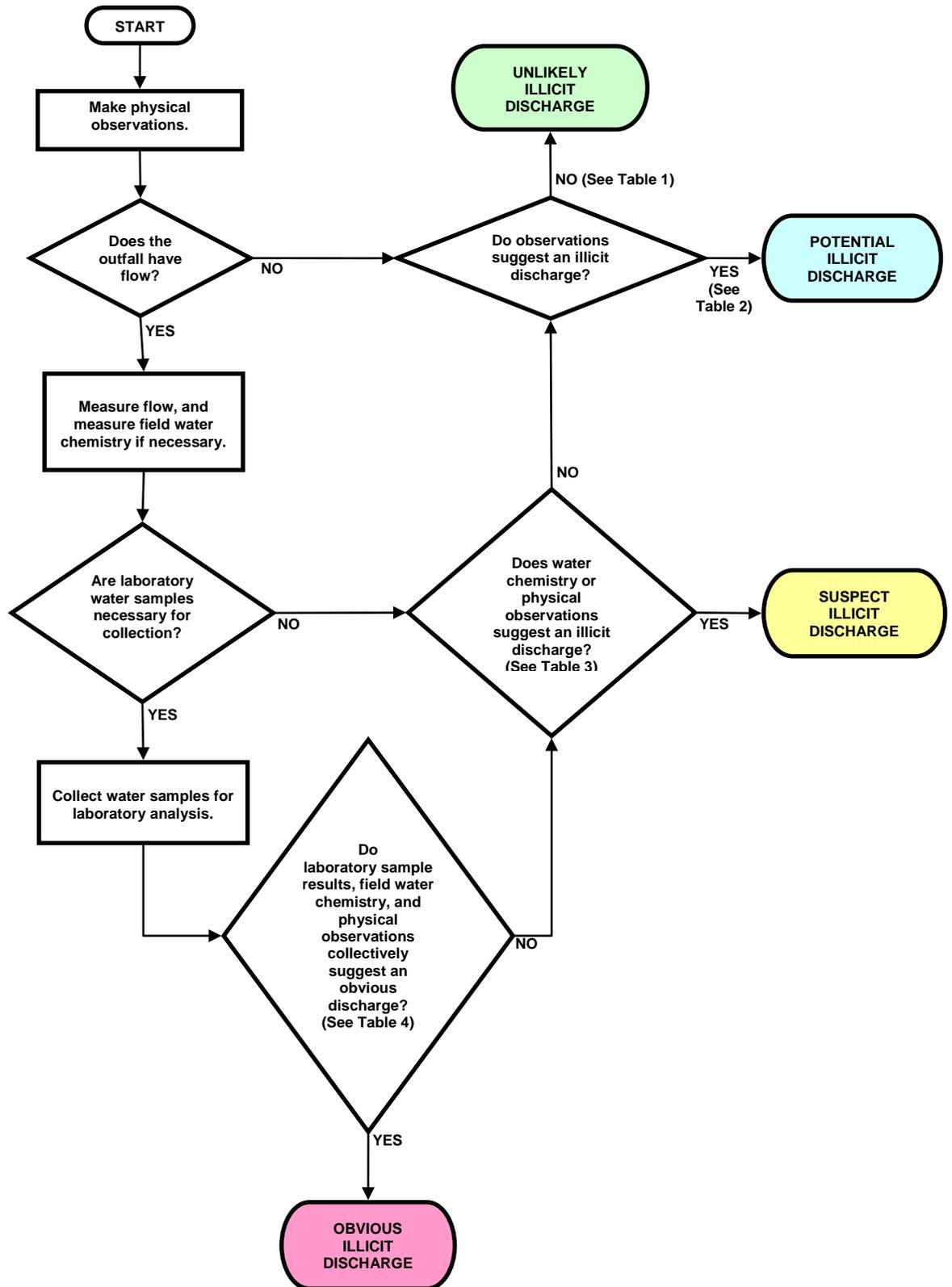




Texas Department of Transportation

Outfall Field Inspection Work Flow Diagram and Classification Scheme





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Associated Tables for the Flow Diagram

Table 1 – Logic Scheme to Negatively Answer "Do Observations Suggest an Illicit Discharge?" Leading to a Classification of "Unlikely Illicit Discharge."

	Observation	For Dry Weather	For Wet Weather
PHYSICAL PARAMETERS	Presence of Foam	No or Null	No or Null
	Color of Stain	Clear, Blue, Green, Gray, Black, Other, None or Null	Clear, Blue, Green, Gray, Black, Other, None or Null
	Turbidity	Clear, Cloudy or Null	Clear, Cloudy or Null
	Presence of Floatables	None, Plastics, Paper or Null	None, Plastics, Paper or Null
	Vegetative Conditions	None, Other or Null	None, Other or Null
	Presence of Deposits	None, Sediment or Null	None, Sediment or Null
	Odor	None, Other or Null	None, Other or Null

Table 2 – Logic Scheme to Affirmatively Answer "Do Observations Suggest an Illicit Discharge?" Leading to a Classification of "Potential Illicit Discharge."

	Observation	For Dry Weather	For Wet Weather		
PHYSICAL PARAMETERS	Presence of Foam	Yes	Yes		
	Color of Stain	Yellow, Red, Orange, Blue, Purple or White	Yellow, Red, Orange, Blue, Purple or White		
	Turbidity	Cloudy or Opaque	Opaque		
	Presence of Floatables	Sewage, Petroleum Sheen, Paint or Suds	Sewage, Petroleum Sheen, Paint or Suds		
	Vegetative Conditions	Poor Growth or Over Flourishing	Poor Growth or Over Flourishing		
	Presence of Deposits	Oily, Paint or Other	Oily, Paint or Other		
	Odor	Sewage, Sulfide, Rancid or Petroleum	Sewage, Sulfide, Rancid or Petroleum		
	OR		OR		
FIELD WATER CHEMISTRY	Parameter	Results	Units	Results	Units
	Ammonia_Nitrogen	>2.0	ppm	>2.0	ppm
	Chlorine, total	>2.0	ppm	>2.0	ppm
	Detergent	>5.0	ppm	>5.0	ppm
	pH	<6.0 or >9.0	su	<6.0 or >9.0	su
	Copper, total	>0.5	ppm	>1.0	ppm
Phenols	>0.3	ppm	>0.6	ppm	



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Associated Tables for the Flow Diagram

Table 3 – Logic Scheme to Affirmatively Answer "Does Field Water Chemistry and Observations Suggest an Illicit Discharge?" Leading to a Classification of "Suspect Illicit Discharge."

PHYSICAL PARAMETERS	Observation	For Dry Weather		For Wet Weather	
	Presence of Foam	Yes	Yes		Yes
Color of Stain	Yellow, Red, Orange, Blue, Purple or White	Yellow, Red, Orange, Blue, Purple or White		Yellow, Red, Orange, Blue, Purple or White	
Turbidity	Cloudy or Opaque	Cloudy or Opaque		Opaque	
Presence of Floatables	Sewage, Petroleum Sheen, Paint or Suds	Sewage, Petroleum Sheen, Paint or Suds		Sewage, Petroleum Sheen, Paint or Suds	
Vegetative Conditions	Poor Growth or Over Flourishing	Poor Growth or Over Flourishing		Poor Growth or Over Flourishing	
Presence of Deposits	Oily, Paint or Other	Oily, Paint or Other		Oily, Paint or Other	
Odor	Sewage, Sulfide, Rancid or Petroleum	Sewage, Sulfide, Rancid or Petroleum		Sewage, Sulfide, Rancid or Petroleum	
AND			AND		
FIELD WATER CHEMISTRY	Parameter	Results	Units	Results	Units
	Ammonia_Nitrogen	>2.0	ppm	>2.0	ppm
	Chlorine, total	>2.0	ppm	>2.0	ppm
	Detergent	>5.0	ppm	>5.0	ppm
	pH	<6.0 or >9.0	su	<6.0 or >9.0	su
	Copper, total	>0.5	ppm	>1.0	ppm
	Phenols	>0.3	ppm	>0.6	ppm

Table 4 – Logic Scheme to Affirmatively Answer "Do Laboratory Sample Results, Field Water Chemistry, and Observations Suggest an Illicit Discharge?" Leading to a Classification of "Obvious Discharge."

Scenario	Sewage		Car Wash		Construction		Commercial Areas		Fuel Spill		
	Observation	Dry or Wet Weather	Dry Weather Only		Dry Weather Only		Dry Weather Only		Dry or Wet Weather		
PHYSICAL PARAMETERS	Presence of Foam	NU	Yes		NU		NU		NU		
	Color of Stain	NU	Yellow, Blue, Black, Green, Orange, Red, Gray, Purple, White or Other		Yellow, Blue, Black, Green, Orange, Red, Gray, Purple, White or Other		Yellow, Blue, Black, Green, Orange, Red, Gray, Purple, White or Other		Yellow, Green, Red, Gray, Orange, Purple, or Other		
	Turbidity	Opaque or Cloudy	Cloudy or Opaque		Cloudy or Opaque		NU		NU		
	Presence of Floatables	Sewage	Suds		NU		NU		Petroleum Sheen		
	Vegetative	NU	NU		NU		NU		NU		
	Presence of Deposits	NU	NU		NU		NU		Oily		
	Odor	Sewage, Sulfide or Rancid	NU		NU		Sewage, Sulfide, Rancid or Other		Petroleum		
FIELD WATER CHEMISTRY	Parameter	Results	Units	Results	Units	Results	Units	Results	Units	Results	Units
	Ammonia Nitrogen	6.0	ppm	NU	ppm	NU	ppm	6.0	ppm	NU	ppm
	Chlorine, total	NU	ppm	NU	ppm	NU	ppm	NU	ppm	NU	ppm
	Detergent	NU	ppm	10.0	ppm	NU	ppm	10.0	ppm	NU	ppm
	pH	NU	su	>6.0 or <9.0	su	>5.9 or <9.1	su	NU	su	NU	su
	Copper, total	NU	ppm	NU	ppm	2.6	ppm	NU	ppm	NU	ppm
	Phenols	NU	ppm	NU	ppm	3.4	ppm	NU	ppm	3.4	ppm
LAB WATER CHEMISTRY	Ammonia Nitrogen	3.0	ppm	NU	ppm	NU	ppm	3.0	ppm	NU	ppm
	Detergent	NU	ppm	5.0	ppm	NU	ppm	5.0	ppm	NU	ppm
	E. coli	100,000	MPN/100 mL	NU	MPN/100 mL	NU	MPN/100 mL	100,000	MPN/100 mL	NU	MPN/100 mL
	Coliforms, fecal	100,000	cfu/100 mL	NU	cfu/100 mL	NU	cfu/100 mL	100,000	cfu/100 mL	NU	cfu/100 mL
	pH	NU	su	NU	su	NU	su	NU	su	NU	su
	Copper, total	NU	ppm	NU	ppm	2.6	ppm	NU	ppm	NU	ppm
	Phenols	NU	ppm	NU	ppm	3.4	ppm	NU	ppm	3.4	ppm
	Oil and Grease	NU	mg/L	NU	mg/L	NU	mg/L	NU	mg/L	>15	mg/L
Total Petroleum Hydrocarbons	NU	ppm	NU	ppm	NU	ppm	NU	ppm	>15	ppm	