Illicit Connections and Illicit Discharges: Field Screening, Indicators, and Source Tracing

Presented by

King County

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Funding provided by western Washington municipal stormwater permittees
Introduction and Background

What is the IC-ID Manual?

- Guidance document, published in 2013
- Field methods to help meet requirements for Illicit discharge detection and elimination (IDDE) in municipal NPDES permit
- Single source of information
- Audience: municipal stormwater staff
- IC-ID vs. IDDE

2013 IC-ID Manual link
Why update the IC-ID Manual?

• Resource for IC-ID work
• Coincides with new stormwater permits (2019)
• Supports SAM program and municipal efforts
Input for Updating Manual

- Online survey
- Feedback workshops
- Update literature review
- Queries of regional IDDE database
Input for Updating Manual

Input so far

- Online survey
- Feedback workshops
- Updated literature review
- Queries of regional IDDE database
Results: Survey

Updates

• New permit language
• Prioritize indicator tests by effectiveness
• Streamline reference sheets
Figure 1. Field Screening and Source Tracing Methodology Flow Chart.
Results: Survey

Add new information

- Indicators:
  - DNA sampling
  - *E. coli* bacteria
  - Dissolved oxygen

- Year-round screening (not just dry season)

- Lessons learned from successful programs
Results: Feedback Workshops

- Two workshops held in Feb. and Mar.
- Review field methods currently in use
- Go through IC-ID Manual sections:
  - Field screening
  - Indicator testing
  - Source tracing
Screening

- Add discussion of allowable discharges:
  - Fire response foam
  - Ground water, springs, seeps
  - Street and sidewalk wash water

- Expand ditch inspection section

- Check active construction permits
Indicator Testing

New technologies and methods

- Microbial DNA
- Caffeine
- Cholesterol
- Aquatic macroinvertebrates
- Petroleum hydrocarbons
- Combinations of parameters

Expand descriptions

- Background levels comparison: turbidity, hardness, fluoride
- Dye and smoke testing
- Odor: natural gas, decomposing animals, tidal water
- Visual assessment: color, sheen, suspended solids, etc.

Remove or reduce priority

- Ammonia
- Potassium
- Sand-bagging
Results: Feedback Workshops

Source Tracing

Add or Update

• Property/home owner questionnaire
• Infrared thermography
• Canine source tracing
• Update equipment costs

Expand descriptions

• Private property access
• Coordination with neighboring jurisdictions
• Dye and smoke testing
• Soil conditions
Next Steps: Update and Publish Manual

- Update literature review
- Query 2014 regional IDDE database
- Source ID subgroup review recommended updates

- Update Manual
  - Review and approval by Source ID subgroup
  - Publish: Late 2019
    - Ecology SAM website
    - WA Stormwater Center website
Trainings and Videos

- Throughout western WA
- Live, hands-on, demo stations
- Winter 2019-20
- Videos of previous trainings on WSC website
  - 14 current videos
  - Make 6 new videos

Next Steps: Training Workshops

https://www.youtube.com/playlist?list=PLXny_Je3KsDwN5iiiiJI9265_pHiHccImV
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