

**Illegal Discharges/Illicit
Connections Program
Sewage Spill Response Training**

**Module B-10.III
(Revised March 2004)**

**Audience: Authorized Inspectors
and Sewage Agency Personnel
Time: 1 ½ hours**

**OCSD Sanitary Sewer Overflow
Demonstration Facility**

- Facility available
 - Responders
 - Public Works crews
- Contact Nick Arhontes
 - (714) 593-7210
 - narhontes@ocsd.com



Classroom Outline

- Introduction
- OC NPDES Stormwater Program
- OC Sewage Collection Program
- **Sewage Spill Response
Procedures**
- Conclusions

Training Program Goals

Increase understanding of the stormwater and sanitation programs and the practices that should be implemented and coordinated when responding to and reporting sewage spills.

Introduction



**Water Resources are
Crucial to Orange County**



Water provides recreation for Orange County residents.

It attracts tourists, boosting the local economy.



It is home to many types of wildlife.

Introduction

Sources of Pollution

- Homes
- Businesses
- Construction sites
- Municipal facilities




Spills/Overflows

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Introduction

It's Everyone's Responsibility

- Urban runoff and stormwater pollution is not just a coastal issue-it starts in all regions of the community and affects water quality from the mountains to the ocean.



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Introduction

It's Your Responsibility

- Everyone must help to reduce urban runoff and stormwater pollution.
- This training will provide you with guidance to help you when responding to sanitary sewer overflows and help implement the Orange County Stormwater & Sewer Overflow Response Programs.

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OC NPDES Stormwater Program

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Stormwater Program

Clean Water Act

- **Objective**
 - "To restore and maintain the chemical, physical and biological integrity of the Nation's waters"
 - "Fishable" "Swimmable"
- **Permitting of Discharges**
 - The CWA established the National Pollutant Discharge Elimination System (NPDES) program to regulate discharges, including urban runoff and stormwater

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Stormwater Program

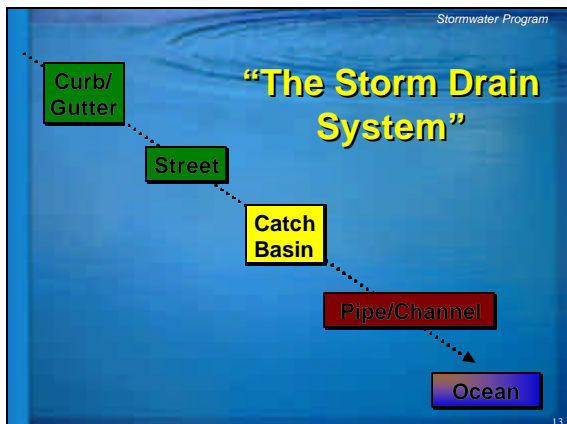
OC NPDES Stormwater Permits

- **5 Year Permit Terms 2002-07**
 - Santa Ana Region
Order No. R8-2002-0010
January 18, 2002
 - San Diego Region
Order No. R9-2002-0001
February 13, 2002



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SEWAGE SPILL RESPONSE TRAINING MODULE



Stormwater Program

OC Storm Drain System

- > 370 miles "above ground" channels
- > 550 miles (>39") "below ground" pipes/channels
- >37,000 Catch Basins

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Stormwater Program

OC NPDES Stormwater Program

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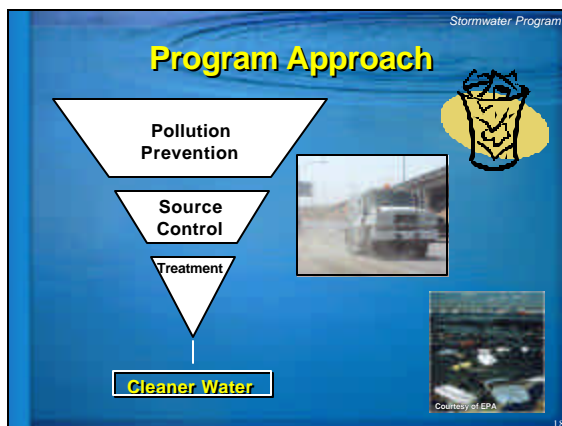
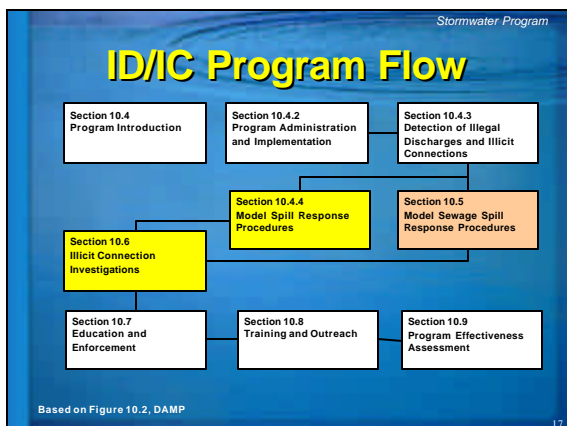
Stormwater Program

Program Elements

DAMP - Model Programs
Program history and model countywide programs

1. Introduction
2. Program Management
3. Plan Development
4. Legal Authority
5. Municipal Activities
6. Public Education
7. New Development
8. Construction
9. Existing Development
10. **Illegal Discharges/Illicit Connections**
11. Water Quality Monitoring - SDR/SAR
12. Watershed Chapters

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OC Sewage Collection Agencies Program

Sewage Collection Agencies Program

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Sanitary Sewer System

North OC	South OC
5,000 + miles of sewers and interceptors	1,700 + miles of sewers and interceptors
100+ pump stations	45+ pump stations
27 sewage collection agencies	10 sewage collection agencies

Sewage Collection Agencies Program

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Sewage Collection Agencies Program

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Sewage Collection Agencies Program

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Sanitary Sewer Collection System

Sewage Collection Agencies Program

"A wastewater collection system including sewers, pipes, pumps, or other conveyances that convey sewage wastewater to a sewage treatment plant"

Courtesy of OCSD

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General Waste Discharge Requirements

Sewage Collection Agencies Program

- 5 Year Permit Term 2002-07
 - Santa Ana Region Order No. R8-2002-0014 April 26, 2002

The Watersheds of Orange County

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SEWAGE SPILL RESPONSE TRAINING MODULE

Sewage Collection Agencies Program

Sewer System Management Plan (SSMP)

- Goals
- Organization
- Legal Authority
- Measures and Activities
- Design and Performance
- Monitoring, Measurement and Modifications
- **Overflow Emergency Response Plan**
- Fats, Oils and Grease Control Program
- System Evaluation and Capacity Plan
- Audits
- Communications

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Sewage Collection Agencies Program

Overflow Emergency Response Plan

- Identify response procedures
- Ensure proper response
- Ensure notification of other agencies
- Responder training
- Emergency operations
- Prevent discharges/contain sewage
- Identify response plan

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Sewage Spill Response Introduction




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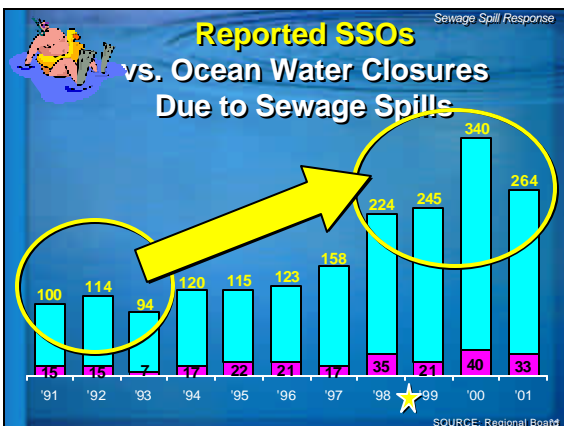
Sewage Spill Response

Why So Much Attention?

- Impair public recreational use and aesthetic enjoyment of surface waters
- Exceedance of water quality standards
- Public health threat; bacteria and viruses
- Adverse affects on aquatic life



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Sewage Spill Response

Good Ol' Days of SSO Response & Reporting

- Inconsistent Responses & Clean Ups
- Inconsistent Containment
- Inconsistent Calculations
- Inconsistent Reporting



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Sewage Spill Response

Regulatory Response

Stormwater Agencies	Sewage Collection Agencies
<p>Area-wide Stormwater Permit</p> <p>“Permittees shall prohibit illicit/illegal discharges from entering into the municipal storm sewer system...”</p>	<p>General Waste Discharge Requirements (North OC)</p> <p>“The discharge of untreated sewage to any surface water stream, natural or manmade....is prohibited”</p> <p>“Discharger shall make every effort to contain sewage spilled....”</p>

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Sewage Spill Response

Agency Responsibilities



Sewer



Storm Drain

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Sewage Spill Response

Agency Response: Coordination

Response

Pre-Planning



Training

Other Programs

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Sewage Spill Response

Tustin Area Spill Control Demonstration Project (TASC)

- Pre-staging materials
- Cooperative work with County of Orange
- GIS maps
- Procedures, agreements, studies



For More Info: Duc Nguyen (714) 973-6690

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Sewage Spill Response

Model Sewage Spill Response Procedures







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SEWAGE SPILL RESPONSE TRAINING MODULE

Model Sewage Spill Response Procedures

Sewage Spills

- Discharge from sewer system or private property enters public right of way
- Large vs. Small (<1,000 gal)
- Sewage spill can be raw or treated wastewater
- Sewage spills constitute a prohibited discharge



Courtesy of OCSD

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Model Sewage Spill Response Procedures

Types of Spills

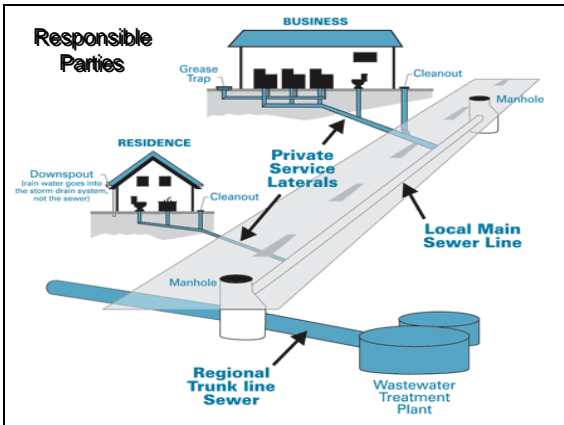


Courtesy of OCSD

6 gallons
per minute spill

500 gallons
per minute spill

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Model Sewage Spill Response Procedures

New Focus on Response Procedures (Coordination)

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    graph TD
      A[Record Keeping] --> B[Response Requests]
      B --> C[Response]
      C --> D[Investigations]
      D --> E[Reporting]
    
```

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Model Sewage Spill Response Procedures

Response Procedures

```

    graph TD
      A[Record Keeping] --> B[Response Requests]
      B --> C[Response]
      C --> D[Investigations]
      D --> E[Reporting]
    
```

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Model Sewage Spill Response Procedures

Record Keeping

- Complete Report
 - w/photos
- Process documentation
- Update database
- Retain records 5 years



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SEWAGE SPILL RESPONSE TRAINING MODULE

Model Sewage Spill Response Procedures

County of Orange
PUBLIC FACILITIES & RESOURCES DEPARTMENT
ENVIRONMENTAL RESOURCES
POLLUTION NOTIFICATION/INVESTIGATION REQUEST FORM

Requester: Individual Company Response Provider Representative

Name: _____ Phone: _____
 Organization: _____
 Street address: _____ City: _____ State: _____ Zip: _____
 E-mail address: _____
 Street of report: _____
 Location: _____
 Coordinates: _____

Requester contact information:
 Contact person name: _____
 Phone: _____
 E-mail: _____
 Fax: _____
 Notify party: _____
 Name: _____ Phone: _____
 E-mail: _____
 Fax: _____

Investigation details:
 Date of report: _____
 Time of report: _____
 Description of incident: _____
 Estimated volume: _____
 Nature of material: _____
 Hazardous? Yes No

Investigation status:
 In Progress Completed Not Started

Investigation results:
 Investigation required Investigation not required Investigation not possible
 Investigation required Investigation not required Investigation not possible

Notes:
 No action required Action required



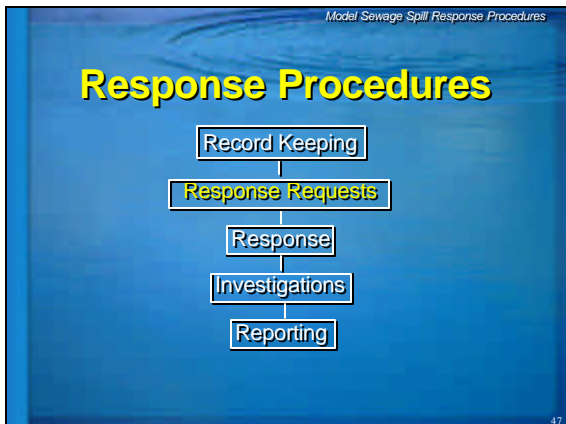
Service Request # 0004471

Estimated Start Time: _____ Estimated Stop Time: _____
 Estimated Service: _____
 Estimated Cost: _____
 Estimated 24 hr: _____

Priority: _____
 Status: _____
 Assignee: _____
 Assignee Phone: _____
 Assignee Email: _____

Request Description:
 REQUEST REPORTS POSSIBLE SEWAGE SPILL VACUUM LIT NEAR DOOR TO THE ABOVE LISTED PROPERTY. Also checked regarding the possible sewage spill. No report to be made for this incident as it is a public utility issue.

Action Taken:
 (S) User (Several) responded to the location and to the reported spill location. (S) User (Several) responded to the location of sewage/water present in street. Reported location confirmed as a public utility issue and corrected by the utility crew.

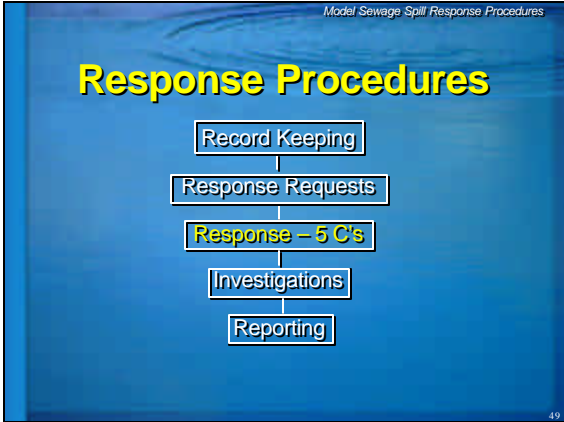


Model Sewage Spill Response Procedures

Response Requests

- County 24 Hour Hotline (714) 567-6363
- City Hotline Number
- Orange County Sanitation
- County Website – online form
- OCSD Control Center 24 hours (714) 593-7025
- Others

Can receive response requests from public, field staff, regulatory agencies, etc.



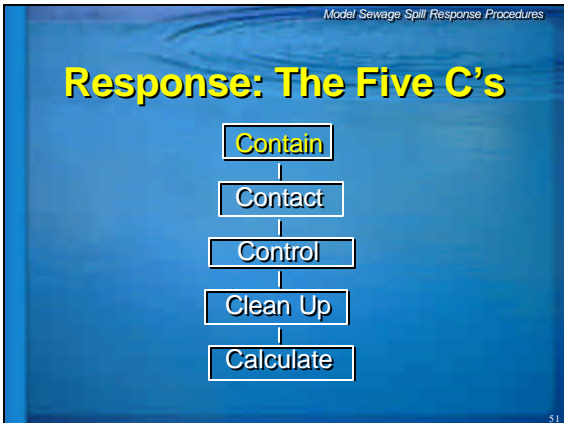
Model Sewage Spill Response Procedures

Initial Steps

- Investigate as soon as possible
- Verify information
- Verify jurisdiction
- Determine cause
- Minimize impacts
- Avoid exposure
- Isolate area
- Deny entry
- Request assistance



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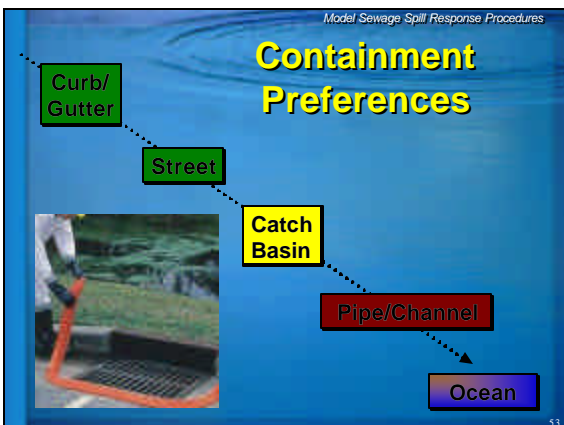


Model Sewage Spill Response Procedures

“Make every effort to prevent sewage from discharging from storm drains into flood control channels and open ditches”

Order R8-2002-0014 Section B.1


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Model Sewage Spill Response Procedures

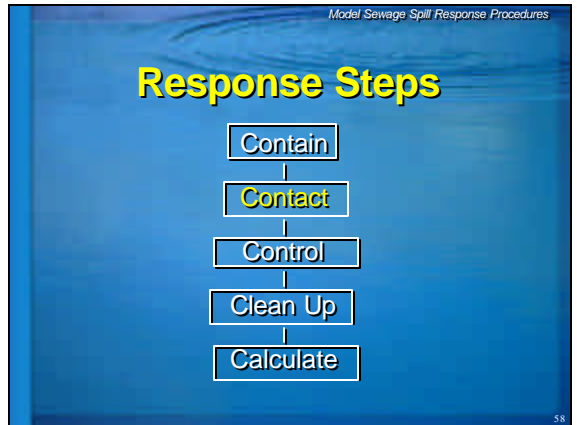
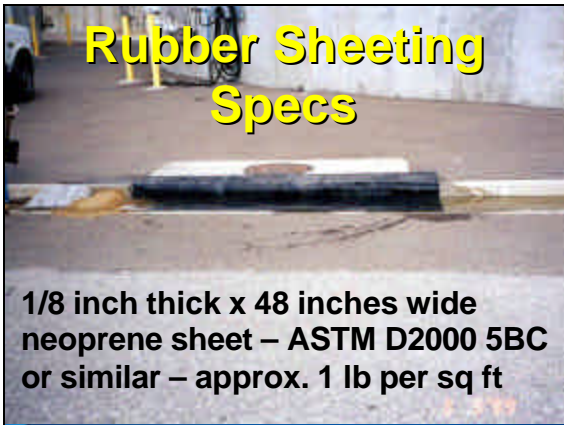
Costs of Cleanup vs. Containment

- Release Prevention
 - Dike material (sand)
 - Absorbent booms/pads
 - Shut of water supply
- Street/Catch Basin
 - Pressure wash
 - Granular absorbent/sand
- Channels
 - Booms/pads
 - Vacator Trucks
 - Heavy Equipment
 - Containment Dam
 - Soil Removal



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SEWAGE SPILL RESPONSE TRAINING MODULE



Model Sewage Spill Response Procedures

Notifications

- Contact other local agencies
- Provide initial information
- Provide periodic updates

A photograph of a man in a dark shirt talking on a mobile phone. He is standing in front of what appears to be a spill containment setup.

Type of Spill	*Agency(s) to notify	Notification Timeframe	Report Timeframe
≥ 1,000 gallons (whether it does or does not enter a storm drain/flood channel)	RWQCB, OES, OCHCA	Immediate	5-day report required if responsible party (RP) also include in your 30-day monthly report
<1,000 gallons and does not enter a storm drain/flood channel	RWQCB, OCHCA	Immediate	30-day monthly report.
Any size SSO that enters a storm drain/flood control channel	RWQCB, OCHCA, **RDMD	Immediate	5-day report if you are RP Also include in 30-day monthly report
Private property caused SSO that entered a storm drain/flood channel	Governing city/county, OCHCA, **RDMD, RWQCB	Immediate	Include available information in the 30-day monthly report.
Private property caused SSO but did not enter a storm drain/flood channel	Governing city county, HCA, County of Orange Code Enforcement or **RDMD if owner is uncooperative	As soon as information is known	Not required by the permit, but should be included in monthly report.

SEWAGE SPILL RESPONSE TRAINING MODULE

Normal Hours	After Hours
(1) OCHCA (714) 667-3600 <i>(Please call down the list in order until someone has been contacted)</i> (2) Monica Mazur (714) 667-3751, Pager (714) 834-PAGE 5210# (3) Larry Brenner (714) 667-3756 (4) Mike Fennessy (714) 667-3755 (5) Larry Honeybourne (714) 667-3750	Control 1(714) 628-7008
RWQCB - Santa Ana Region (909) 782-4130 Najah Amin (909) 320-6362	OES: (800) 852-7550
California State Office of Emergency Services (OES) (800) 852-7550	24 hours
Orange County Control 1 (714) 628-7008	24 hours
**Resources & Development Management Department (formally PFRD) (714) 567-6363 (storm drain/flood channel facility owners)	Control 1: (714) 628-7008
Caltrans (949) 724-2607	24 hours
California Highway Patrol (714) 567-6000	911

Model Sewage Spill Response Procedures

Basic Notification Info

- Location
- Containment status
- Storm drain impacts
- Who is on site
- Volume estimate
- Callback information
- Who else was notified
- Start time/stop time for spill

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Model Sewage Spill Response Procedures

Response Steps

Contain

↓

Contact

↓

Control

↓

Clean Up

↓

Calculate

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Model Sewage Spill Response Procedures

Terminate the Discharge

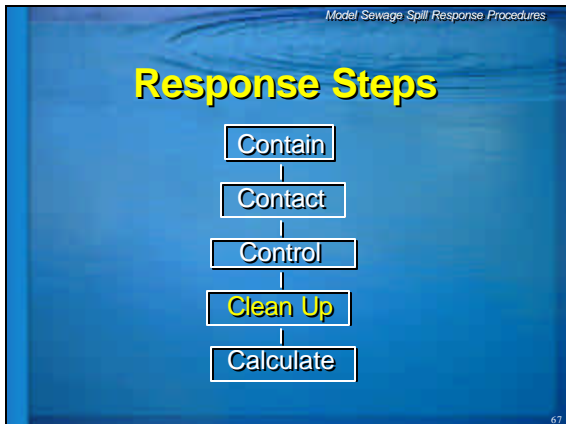
- Shutting off equipment or pumps
- Close valves
- Shut off water source
- Divert around discharge point
- Repair break
- Plug discharge point



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SEWAGE SPILL RESPONSE TRAINING MODULE

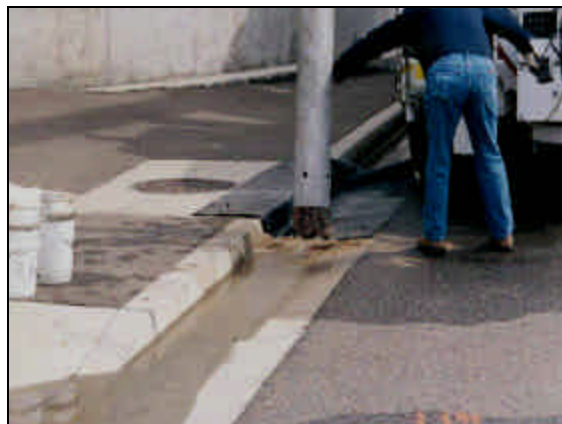


Model Sewage Spill Response Procedures

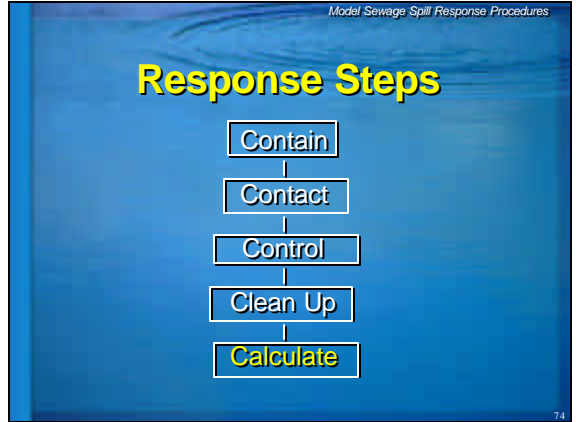
Clean Up Procedures

- Coordinate
- Provide list of companies
 - Directions
 - Verify pollutant removal
- Document activities
- Document waste removal

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SEWAGE SPILL RESPONSE TRAINING MODULE



Model Sewage Spill Response Procedures

Calculate

Volumes can be based on ponded areas OR flow rates

- Orifice equations (used the most)
- Flow = Area x Volume ($Q = A \times V$)
- Normal pump station flow rates
- Number of households discharging to line (lateral SSOs)

Document assumptions and calculations in final report

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Model Sewage Spill Response Procedures

Orifice Calculation Card

Vent Hole Hole Dia. inches	Water Ht inches	Q cfs	Q gpm	Q gph
0.50	1/16 th	0.0005	0.23	14
0.50	1/8 th	0.0007	0.33	20
0.50	1/4 th	0.0010	0.47	28
0.50	one half	0.0015	0.66	40
0.50	3/4 ths	0.0018	0.81	49
0.50	1 inch	0.0021	0.94	56

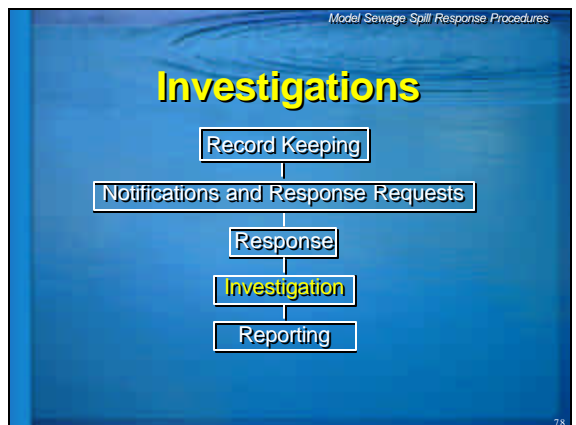
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Model Sewage Spill Response Procedures

Estimating Flow Rates

6 gallons per minute spill

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Model Sewage Spill Response Procedures

Sewage Spill Investigation

- Identify responsible party (public/private)
- Identify type of spill (raw/treated/septic tank)
- Estimate amount (volume/rate)
- Identify the cause of the spill
- Identify follow up activities
- Prepare enforcement response, if any

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Model Sewage Spill Response Procedures

Site Entry

```
graph TD; A[Meet proper representative] --> B[Formal introduction]; B --> C[Request permission to enter site];
```

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Model Sewage Spill Response Procedures

Site Entry

```
graph TD; A[1. Meet proper official] --> B[2. Formal introduction]; B --> C[3. Request permission to enter site];
```

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Model Sewage Spill Response Procedures

Site Entry



```
graph TD; A[1. Meet proper official] --> B[2. Formal introduction]; B --> C[3. Request permission to enter site];
```

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Model Sewage Spill Response Procedures

Present Credentials

City Photo ID (preferred)



City Business Card


Request a business card from the facility contact

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Model Sewage Spill Response Procedures

Formal Introduction

- Name, Official title
- Agency you represent
- Reason for inspection/response
- Scope of your activities



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Model Sewage Spill Response Procedures

Regulatory Agencies

- County Health Care Agency
- Regional Water Quality Control Boards
- Office of Emergency Services



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Model Sewage Spill Response Procedures

Reporting

- County Health Care Agency
 - Call for any spill
- Regional Water Quality Control Boards
 - Initial report
 - Written report within 5 days
 - Monthly report
- Office of Emergency Services (>1,000 gallons)
 - Phone – fax for follow up

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Type of Spill	*Agency(s) to notify	Notification Timeframe	Report Timeframe
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<1,000 gallons and does not enter a storm drain/flood channel	RWQCB, OCHCA	Immediate	30-day monthly report.
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California Highway Patrol (714) 567-6000	911



Model Sewage Spill Response Procedures

Sanitary Sewer Overflow Report Form

- Preliminary/Final Report
- Reporting Contact Information
- Spill Location and Description
- Receiving Water Information
- Notifications
- Area Postings
- Other

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Conclusion

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Conclusions

Conclusions

- Countywide program has been developed to improve water quality
- SSOs are sources of pollutants
- Cities/Sanitation Districts need to work together when responding to/following up on SSOs
- Field implementation module coming this summer at a sanitation agency near you!

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Conclusions

Remember

- Everyone benefits from clean water, and everyone has a responsibility to protect it by reducing urban runoff and stormwater pollution.



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Conclusions

Resources

For more information:
Visit www.ocwatersheds.com
or
Call the Orange County Stormwater Program at 714-567-6363.



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Conclusions

Handouts

- Hard copy of presentation
- Reporting Form Examples
 - Pollution Notification Investigation Report
 - Field SSO Report
- Sanitary Sewer Overflow Reporting Guidelines
- SSO Outreach Brochure
- SSO Report Form

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Definitions

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Definitions

Illegal Discharge

- Any discharge to the municipal storm drain system not composed entirely of stormwater and not covered by an NPDES permit.



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Definitions

Best Management Practice (BMP)

Technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of the stormwater runoff in a cost effective manner

EPA - Preliminary Data Summary of Urban Stormwater Best Management Practices

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Thank You!

Thank you for attending and learning how you can help!

ORANGE COUNTY
WATER
PROTECTION



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