WEBINAR

Industrial Stormwater Monitoring – A Community Approach

April 29, 2020  11:30 AM - 12:30 PM

California Water Quality Monitoring Collaboration Network
A statewide forum for members of the monitoring community to share ideas, successes and common concerns.

https://mywaterquality.ca.gov/monitoring_council/collaboration_network/index.html
TODAY’S PRESENTERS:

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https://www.coastkeeper.org/
Industrial Stormwater Monitoring - A Community Approach
Stormwater is everywhere but sites vary by purpose

- Point Source
- Non Point Source
- Agricultural
- MS4
Stormwater monitoring can utilize several methods:

- Observation of site
  Camera/Written documentation

- Water quality sampling
  Sample bottles/meters
Purpose

• Collect site data and water samples to document conditions and determine compliance with Industrial permits
• Could lead to Notice of Violation, Fines, Litigation
• Enforcement actions allowed under Federal Clean Water Act
• Ensure drinkable, swimmable, fishable water
Monitoring is intended to answer the following general questions:

- Who are the operators of the Facility?
- What are the conditions at the facility?
- Where is water discharging from the facility and where does it go?
- When is the discharge happening?
Constraints

Extreme wet weather may pose a safety hazard to sampling personnel and may therefore impact planned storm event sampling.
BMPs to look for

Driveway Drain

Concrete Swale
BMPs to look for

- Rumble strips
- Socks
BMPs to look for

Drums, Containers  Coverings, Hazardous waste  Secondary Containment
Examples
Runoff path to the Sea
<table>
<thead>
<tr>
<th>Impairments</th>
<th>Beneficial Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Copper</td>
<td>• Agricultural Supply</td>
</tr>
<tr>
<td>• Lead</td>
<td>• Groundwater Recharge</td>
</tr>
<tr>
<td>• Indicator Bacteria</td>
<td>• Water Contact Recreation</td>
</tr>
<tr>
<td></td>
<td>• Non-Contact Recreation</td>
</tr>
<tr>
<td></td>
<td>• Wildlife Habitat</td>
</tr>
<tr>
<td></td>
<td>• Warm Freshwater Habitat</td>
</tr>
<tr>
<td></td>
<td>• Rare, Threatened or Endangered Species</td>
</tr>
</tbody>
</table>
Stormwater to Drain 5 South 2/28/14
Stormwater to Drain 5 South 4/1/14
Uncovered outdoor storage by building 3, 1/30/14
Uncovered outdoor storage by building 3, 1/30/14
Uncovered bins and debris on ground in driveway south of building 2, 1/30/14
Uncovered Outdoor Storage in north east area of site 7/18/14
<table>
<thead>
<tr>
<th>Metals</th>
<th>Bacteria</th>
<th>Others and Field tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium</td>
<td>Total coliform</td>
<td>Chemical Oxygen Demand (COD)</td>
</tr>
<tr>
<td>Copper</td>
<td>Fecal Coliform</td>
<td>Turbidity</td>
</tr>
<tr>
<td>Lead</td>
<td>Enterococcus</td>
<td>Total Suspended Solids</td>
</tr>
<tr>
<td>Nickel</td>
<td>E.coli</td>
<td>Field Tests (multimeter)</td>
</tr>
<tr>
<td>Selenium</td>
<td>DNA Analysis</td>
<td>Electrical conductivity</td>
</tr>
<tr>
<td>Zinc</td>
<td></td>
<td>Dissolved Oxygen</td>
</tr>
<tr>
<td>CaCO3 hardness</td>
<td></td>
<td>PH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temperature</td>
</tr>
</tbody>
</table>
Specialized training

Every member of the field crew will be instructed on

• Personal health and safety while in the field;
• Field and lab paperwork protocols (e.g., chain of custody, GPS);
• Sample collection methods, and
• Sample transport and hold-time protocols.
Quality Assurance Project Plan

- Guiding Document for all sampling efforts
- Covers all aspects of Project
- Data Sheets
- Chain of Custody forms
Laboratory Analysis

There are many laboratories available and it is a competitive business. Shop for the best deal and service.

• State Certified
• Can do the testing you need
• Close by and open when you need them
• Good customer service is critical
Different Containers for Different Tests

- **120 ml amber glass** for Ammonia- Nitrogen, Nitrate – Nitrogen, Orthophosphate
- **120 ml Polystyrene** for E. coli bacteria and Total coliform, Enterococcus bacteria
- **1 litter Amber glass** for Total recoverable Petroleum Hydrocarbons
- **1 liter polyethylene container** for Dissolved metals, Total Hardness
Water chemistry field measurements

- water temperature (°C)
- specific conductivity (µS/cm)
- Total dissolved solids (TDS) (ppt)
- pH
- dissolved oxygen (mg/L and % saturation)
- Meters can be rented.
Legal Considerations