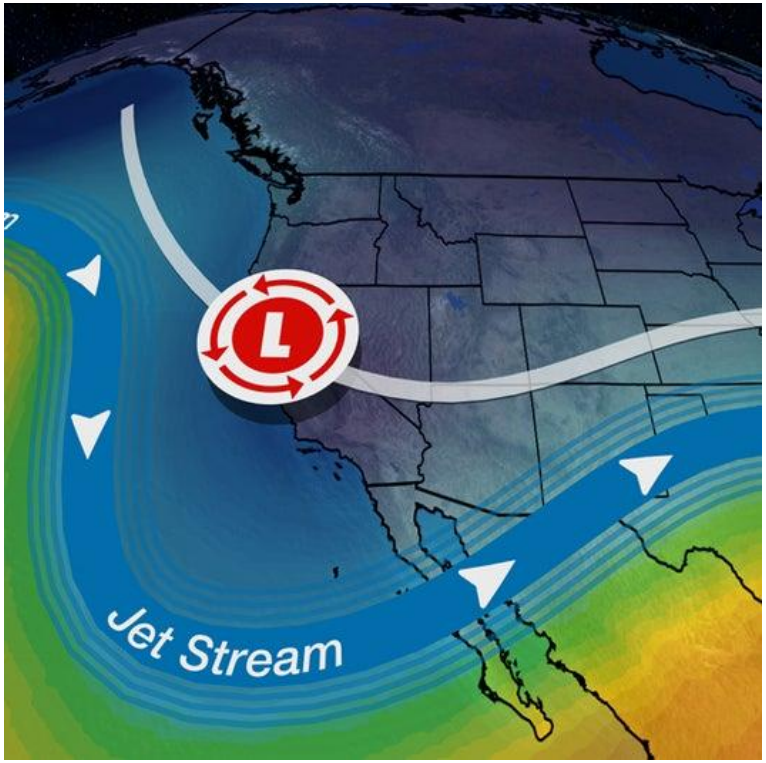


Industrial Storm Water 2023-24 Annual Training

SAN DIEGO COUNTY OFFICE OF EDUCATION

SEPTEMBER 28, 2023

Welcome

Training Sign-in sheet and Certificates:
https://form.jotform.com/232574414639158

Annika Dorman, CPSWQ, QISP ToR

SDCOE Compliance Group Leader

Nick LaPaglia, QISP

Ashlee Cadwell, SDCOE

Agenda

Intro to Storm Water

Industrial General Permit Overview

- Industrial Pollutants
- SMARTS
- Compliance Risks

Industrial General Permit Implementation

- Minimum and Advanced BMPs
- Inspections
- Monitoring

Compliance Group Updates

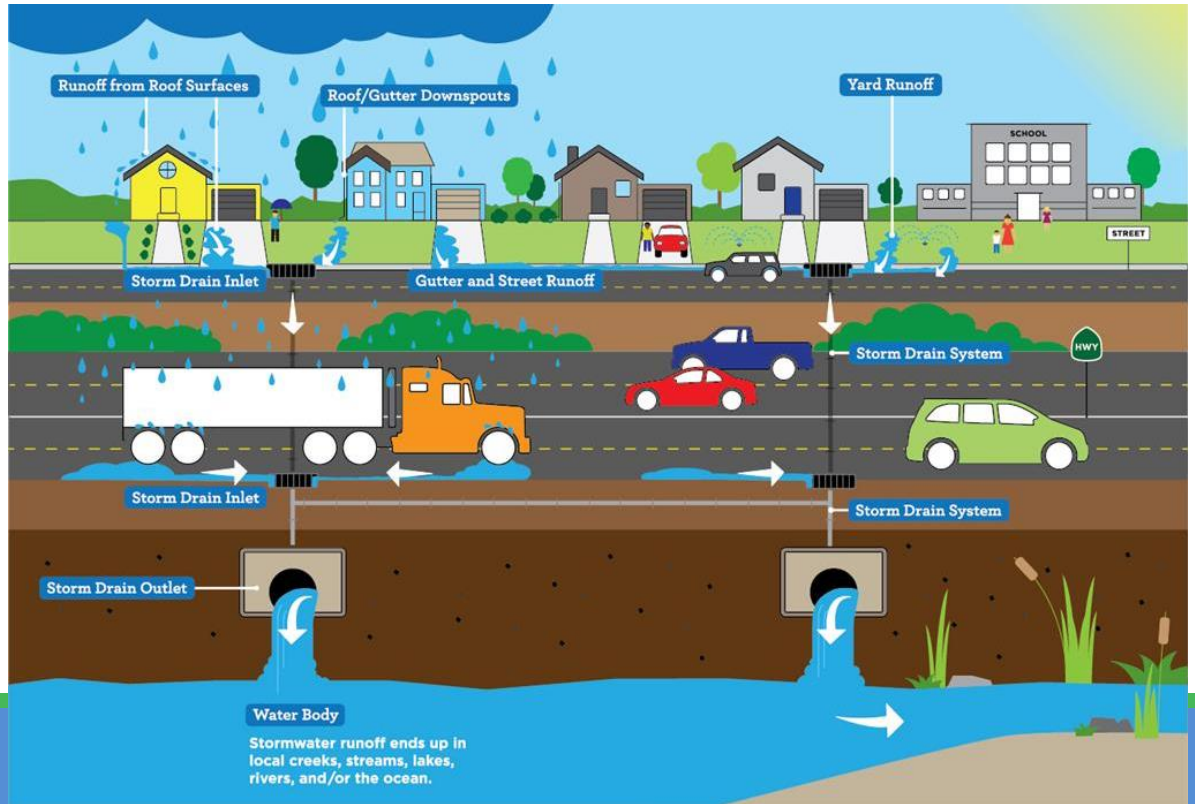
- SWPPP Updates
- No Exposure Certification
- Current Events

Intro to Storm Water

Intro to Storm Water

Runoff to the storm drain system does not receive treatment prior to discharge

ONLY clean rain water is permitted to enter the storm drain system, with few exceptions



Intro to Storm Water

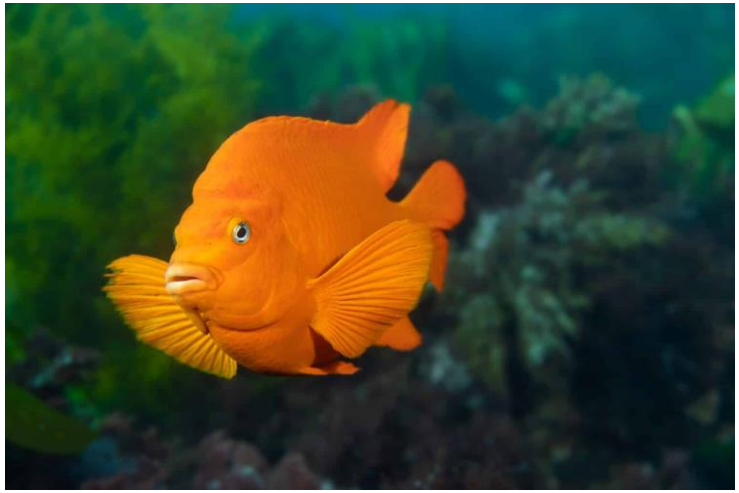
Regulations (including the IGP) are intended to protect the **beneficial uses** of all waters of the United States

To continue using waters in the ways we want to, pollutants need to remain below a specified level

Intro to Storm Water

For example, to use a waterway for recreation or as a drinking water source, bacteria levels need to stay low enough not to make people sick

Or to use a waterway for aquatic species habitat, dirt and heavy metal levels need to stay low enough that species can survive and thrive



Intro to Storm Water

Beneficial uses include:

- Contact/Non-contact Recreation
- Municipal, Agricultural, Industrial Supply
- Habitat (Marine, estuarine, endangered species, wildlife, etc.)
- Migration
- Spawning
- Navigation
- Hydropower
- Commercial and Sport Fishing
- Aquaculture, Shellfish Harvesting

Intro to Storm Water

Pollutants that have negative effects on beneficial uses (and therefore must be minimized) include:

- Bacteria (food waste, decomposing organic waste, fecal material)
- Organic wastes (leaves, grass)
- Trash (solid waste)
- Dirt
- Heavy Metals
- Oils
- Soaps

Intro to Storm Water

Pollutants associated with general/municipal activities (residential, commercial, municipal operations, etc.) are regulated by Municipal General Permits (Region-specific)

Pollutants associated with construction activities are regulated by the Construction General Permit (Statewide)

Pollutants associated with industrial activities are regulated by the **Industrial General Permit** (Statewide)

- Transportation with maintenance, fueling, or washing

IGP Overview

INDUSTRIAL POLLUTANTS

SMARTS

COMPLIANCE RISKS

Industrial Pollutants

Pollutants associated with industrial activities and addressed by the IGP:

- pH (all IGP permittees)
- Total Suspended Solids (all IGP permittees)
- Oil & Grease (all IGP permittees)
- Heavy Metals (pollutant source assessment)
  - Cadmium (batteries, engine components)
  - Copper (brakes, engine components)
  - Zinc (galvanized tires and other materials)
- Deisel (fueling locations only)

Industrial Pollutants

How are pollutants controlled/minimized?

- Best Management Practices
  - Good Housekeeping
  - Preventative Maintenance
  - Spill and Leak Prevention and Response
  - Material Handling and Waste Management
  - Erosion and Sediment Control
  - Employee Training Program
  - Quality Assurance and Record Keeping
- Monthly and Annual Inspections
- Discharge Monitoring
  - QSE Sampling and Observations
  - Numeric Action Levels
    - Compliance and Enforcement

SMARTS

SMARTS Audit:

Legally Responsible Person (LRP)

"For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official."

Duly Authorized Representative (DAR)

"… has responsibility for the overall operation of the regulated facility or activity, such as a person that is a manager, operator, superintendent, or another position of equivalent responsibility, or is an individual who has overall responsibility for environmental matters for the company."

Compliance Risks

What are the primary compliance risks?

Administrative items:

- Timely Certification in SMARTS by LRP or DAR
  - QSE ad-hoc reports (due within 30 days of receipt from lab)
  - Annual Reports (due July 15)
  - ERA Reports (Due January 1)
  - Change-of-Information (COI), i.e. SWPPP or map updates, etc.

Action level exceedances ≠ non-compliance

Failure to complete requirements on time = non-compliance

Compliance Risks

How can we reduce compliance risks?

Ensure LRP(s) and DAR(s) are current in SMARTS

- ID, password, security questions are all saved
- E-Signature on file
- Available and responsive when certification is needed
  - Back-up LRP/DAR ready to respond

IGP Implementation

MINIMUM & ADVANCED BMPS

INSPECTIONS

MONITORING

SMARTS TUTORIAL

Minimum BMPs

Good Housekeeping

Observe all outdoor areas associated with industrial activity:

- Storm water discharge locations
- Drainage areas
- Conveyance systems
- Waste handling/disposal areas
- Perimeter areas impacted by off-facility materials or storm water run-on

Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly

Minimum BMPs

Good Housekeeping

Use dry methods where possible

- Vacuum-assisted sweeping is best
- Manual sweeping
- Leaf blowers have limited benefit (dust redistribution, difficult to control debris, debris usually not collected, heavier sediments not removed)

Where wet cleaning is needed, contain and collect all waste water

- Mop and bucket/rags/spot cleaning rather than using hose
- Steam cleaning may redistribute oils and does not remove pollutants without recollection

Minimum BMPs

Good Housekeeping

Illicit Discharge Prevention

- Facilitate correct activities
  - Ensure mop sinks are accessible
  - Provide drain covers for use during outdoor cleaning
  - Restrict access to hoses (keyed hose bibs)
  - Plumb AC lines to sewer or landscape
- Ensure vendors are employing appropriate BMPs
  - Contract language
  - Activity audits
  - Look for evidence of past discharges as well as active flows

Minimum BMPs

Good Housekeeping

Minimize Material Tracking

- Clean work bays
- Minimize traffic across unpaved areas

Minimize dust generation

- All dust-generating work (engine, brake, tire repair) to be done indoors or in contained area, brakes sprayed prior to work
- Minimize traffic across unpaved areas

Eliminate Discharges

- Wash water
- Other flows through industrial areas (AC condensate, fire sprinkler test water, irrigation water)

Minimum BMPs

Preventative Maintenance

Identify/observe all equipment and systems used outdoors that may spill or leak pollutants

- Vehicles
- Fuel pumps
- Hydraulic lifts

Establish maintenance schedules

Establish repair procedures

- Driver-reporting loop
- Observations during inspections

Minimum BMPs

Spill & Leak Response

Minimize spills/leaks

- Conduct activities within indoor or contained areas

Stock spill kit materials

- Clay absorbent
- Mats
- Mops

Minimum BMPs

Spill & Leak Response

Train spill and leak response personnel

1. Identify and abate flow
2. Protect nearby discharge points as-needed
   - Cover with mat
   - Deploy sandbags or boom
3. Remove spilled substance
   - Absorb
   - Vacuum
4. Repeat/reapply as-needed until all residue removed
5. Properly dispose of spent spill kit materials
   - > trace amounts of hazardous materials require special disposal
6. Restock spill kit as-needed

Minimum BMPs

Material Handling and Waste Management

Do not conduct pollutant-exposing activities during rain events where possible

Cover and/or contain all industrial materials and wastes

- Used tires, batteries, parts covered and raised off ground
- Scrap metal or other wastes in enclosed bin
- Liquids ≥1gallon in secondary containment (110% of largest container or 50% of total volume, whichever is greater)

Minimum BMPs

Material Handling and Waste Management

Divert run-on away from materials/work areas

- Downspout extenders
- Sandbags

Observe and clean outdoor containers and equipment

- Drums, dumpsters, trash cans, etc. free of residues, rust, dirt, debris and in good condition
- Cleaning/collection equipment (shovels, brooms, drip pans, billy goats, vacuums)

Minimum BMPs

Erosion and Sediment Control

Stabilize unpaved areas

Stabilize entrances/exits

- Rumble strips
- Gravel

Ensure flow from site is not causing erosion

- Rip-rap placed appropriately
- Vegetation adequate
- Gravel or other physical stabilization

Minimum BMPs

Employee Training

Train all Pollution Prevention Team Members annually

- Roles and Responsibilities
- Level 1/2 facilities: QISP to perform training

Train mechanics annually

- Spill/leak response procedures
- BMPs for housekeeping and material storage/waste management

Train bus drivers annually

- Spill/leak response procedures
- BMPs for bus cleaning and washing

Minimum BMPs

Quality Assurance and Record Keeping

Enact procedures to ensure SWPPP properly implemented

Track BMP implementation with monthly inspections

Retain inspection forms, training records, spill logs, etc. for 5 years

Advanced BMPs

Structural BMPs

Where installations exist:

- Detention basins
- Vegetated swales / bioswales
- Filter inserts
- Interceptors

Ensure they are adequately maintained:

Universal Inspection Checklist:

- ❑ Accessible for inspection
- ❑ Free of damage
- ❑ Free of significant trash, debris
- ❑ Free of unpleasant odors
- ❑ Free of standing water
- ❑ Inlets/outlets free of obstruction
- ❑ Filter media in working condition

Vegetated Device Checklist:

- ❑ Well vegetated
- ❑ Irrigation system working properly
- ❑ Free of erosion/scouring/channeling
- ❑ Free of excessive vegetation
- ❑ Rip-rap in place

Inspections

Annual Comprehensive Site Compliance Evaluation

- Group Leader Performs

Monthly Visual Observations

- Self-reported

Pre-Rain Event

- Recommended self-audit; not a permit requirement

Inspections

Monthly Visual Observations

- Every Month
- Days without precipitation
- Observe all industrial areas for compliance with minimum BMPs
- If issues are noted, record the corrections made

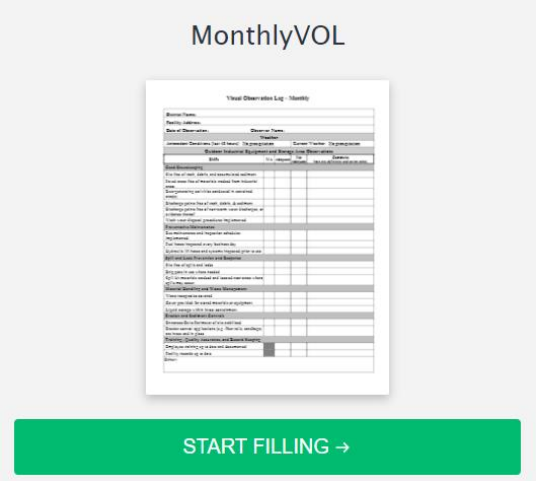
Send completed forms to adorman@dmaxinc.com

- Copy ashlee.cadwell@sdcoe.net

COMING SOON: Online forms!

Pro Tip1 : Set a monthly reminder

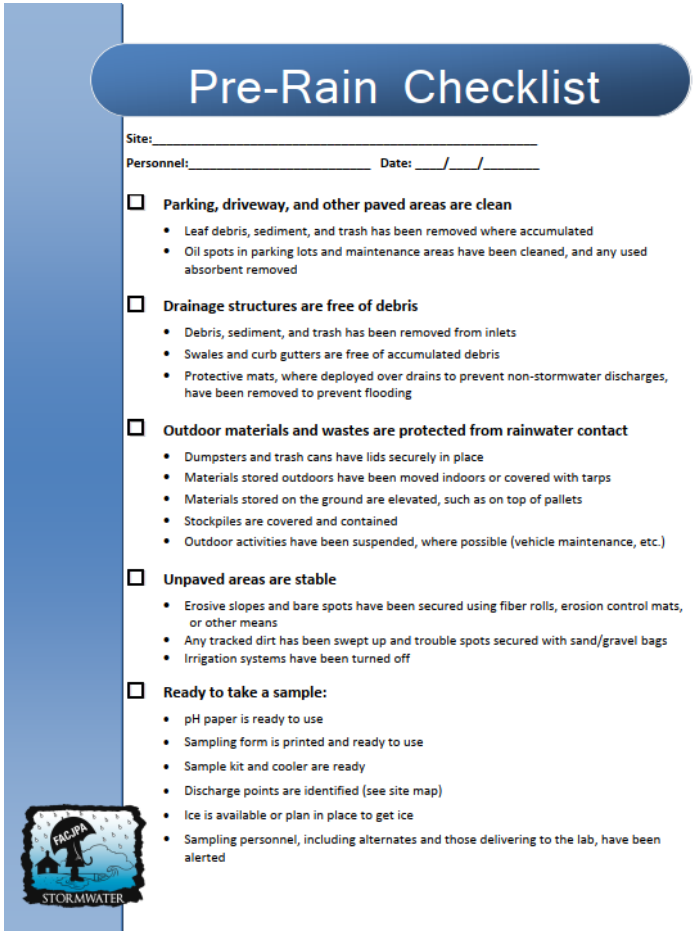
Pro Tip 2: Use your site map for reference



Inspections

Pre-Rain Event (See checklist)

1. Parking, driveway, and other paved areas are clean
2. Drainage structures are free of debris
3. Outdoor materials and wastes are protected from rainwater contact
4. Unpaved areas are stable
5. Ready to take a sample



Pre-Rain Checklist

Site:_____

Personnel:_____ Date: ___/___/_____

☐ **Parking, driveway, and other paved areas are clean**

- Leaf debris, sediment, and trash has been removed where accumulated
- Oil spots in parking lots and maintenance areas have been cleaned, and any used absorbent removed

☐ **Drainage structures are free of debris**

- Debris, sediment, and trash has been removed from inlets
- Swales and curb gutters are free of accumulated debris
- Protective mats, where deployed over drains to prevent non-stormwater discharges, have been removed to prevent flooding

☐ **Outdoor materials and wastes are protected from rainwater contact**

- Dumpsters and trash cans have lids securely in place
- Materials stored outdoors have been moved indoors or covered with tarps
- Materials stored on the ground are elevated, such as on top of pallets
- Stockpiles are covered and contained
- Outdoor activities have been suspended, where possible (vehicle maintenance, etc.)

☐ **Unpaved areas are stable**

- Erosive slopes and bare spots have been secured using fiber rolls, erosion control mats, or other means
- Any tracked dirt has been swept up and trouble spots secured with sand/gravel bags
- Irrigation systems have been turned off

☐ **Ready to take a sample:**

- pH paper is ready to use
- Sampling form is printed and ready to use
- Sample kit and cooler are ready
- Discharge points are identified (see site map)
- Ice is available or plan in place to get ice
- Sampling personnel, including alternates and those delivering to the lab, have been alerted

Pop quiz

Where is your sampling kit?

Intermission

Please enter any outstanding questions in the chat

Monitoring

Step 1: Identify & Train Sampling Staff

Know where to find and how to use:

- Weather reports
- Chain of Custody form
- Visual Observations form
  - QSE criteria listed on form
- Monitoring locations (site map)
- Bottle kits (New)
  - Dispose of older kits or retain as spares
- pH paper
- Gloves
- Cooler
- Ice

Pro Tip: It's hard to sample while holding an umbrella- have a raincoat or poncho handy!

Monitoring

Step 2: Identify when sampling is appropriate and required

Qualified Strom Event (QSE): Runoff preceded by 48 dry hours (no runoff)

Take samples of 2 QSEs per year at *all* industrial discharge points

Once between July and December, and once between January and June.

Required during working hours when conditions are safe

Monitoring

The 4-Hour rule:

If runoff begins *during operating hours:*

- The sample must be taken within 4 hours of the start of runoff

If runoff began *before operating hours*:

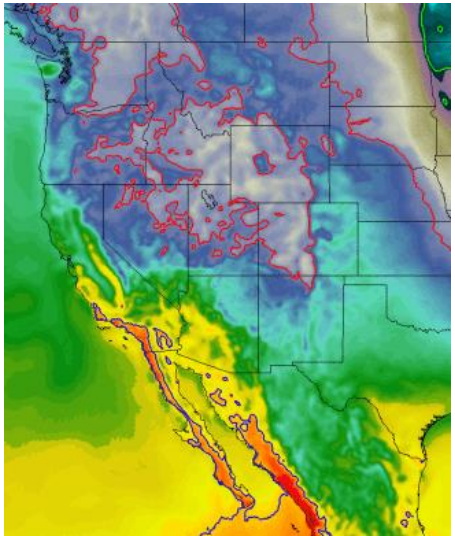
- Check weather history to see if it began within the 12 hours prior to the start of operations
  - Rule of thumb is 0.1" required before runoff will begin on a paved site
- If the answer is yes, you must take your sample within the first 4 hours of the start of operations
- If the answer is no, save the weather report with notations in your files and do not sample

Monitoring

Step 3: Track the Weather

History:

- https://www.wunderground.com/history (Enter location and date, view hourly precipitation totals)
- https://sandiego.onerain.com/map/?&type_id=10|1440&view=0b20683e-1cfb-4f51-b8d0-fd94d6e865e4&view=0b20683e-1cfb-4f51-b8d0-fd94d6e865e4 (Nice rain graphs/map)
- https://www.cnrfc.noaa.gov/ol.php?product=sixhourP (Select "Most Recent Hours (Raw) checkbox to see precipitation totals in the last 1-12 hours, zoom to your location)



Forecast by zip code:

- https://www.wunderground.com/ (Hourly view gives precipitation totals, 10-day view has a nice graph to see timing of storms)
- https://www.weather.gov/ (nice overview with storm total expectations in the details, broken down by morning/afternoon/overnight)

Pro Tip: Bookmark links in your browser and check at least weekly

Monitoring

Step 4: Complete Visual Observations

Observe flow at every sample point

Observe sample in a clear container

- Check for any observable pollutants
- If observable pollutants present, check for and address source

Record Observations on form

COMING SOON: Online forms!

Pro Tip: Don't stand or park in the flow of water while sampling

Monitoring

Step 5: Measure the pH:

Dip paper strip into flowing water for a few seconds or until paper is wet

Immediately compare color of paper to the guide on the package (to the nearest 0.5)

- If pH is less than 6 or more than 9 – repeat to confirm
- Look for a source:
  - Low pH (acidic)- batteries, open trash containers, chemicals
  - High pH (basic)- often white powders (drywall dust, concrete dust)

Record measurement on form

pH = 0	Battery acid
pH = 1	Sulfuric acid
pH = 2	Lemon juice, Vinegar
pH = 3	Orange juice, Soda
pH = 4	Acid rain (4.2-4.4)
	Acidic lake (4.5)
pH = 5	Bananas (5.0-5.3)
	Clean rain (5.6)
pH = 6	Healthy lake (6.5)
	Milk (6.5-6.8)
pH = 7	Pure water
pH = 8	Sea water, Eggs
pH = 9	Baking soda
pH = 10	Milk of Magnesia
pH = 11	Ammonia
pH = 12	Soapy water
pH = 13	Bleach
pH = 14	Liquid drain cleaner

Pro Tip: Don't handle sample bottles before taking the pH

Monitoring

Step 6: Collect samples

Wear gloves

Fill bottles directly, if possible, OR

- Use a clean collection container, rinsed in sample water
- An empty, sterile bottle from your kit can be used to fill the other containers

Fill bottles to the “neck”

Bottles with stickers contain acid- do not overfill!

Label bottles w/ discharge ID, date, time

Place bottles in cooler with ice

Monitoring

Step 6: Collect samples

Small vials: carefully fill to brim

Goal: virtually no air

Turn bottle upside down to check for bubbles

If there is a bubble, add more water and check again

Be careful not to overfill

Monitoring

Step 7: Arrange sample delivery

Store samples in fridge or on ice at all times

Notify D-Max personnel of upcoming drop-off plan

Pack samples carefully

Complete Chain of Custody form for all possession transfers

- Sampler > Delivery person > D-Max staff

CHAIN-OF-CUSTODY RECORD

EMA LOG #:

Client: San Diego County Office of Education

Attn: Joanne Branch

Samplers(s):

Address: 6401 Linda Vista Road

San Diego, CA 92111

Phone: 858-292-3833 Fax: 858-694-0197

Email: jbranch@sdcoe.net

Billing Address: Same As Above

Project ID: 2009-2010 Industrial Storm Water Monitoring

Project #: District Name

Requested Analysis

ID #	Client Sample ID	Sample Date	Sample Time	Sample Matrix	Container # / Type	Oil &	8015B(GRO) & BTEX	@ pH @ EC	Title 22/CAM17 Metals @ TTLC																
1				SW																					
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

Matrix Codes: A = Air, DW = Drinking Water, GW =

WW = Wastewater, S = Soil, SED = Sediment, SD = Solid, T = Tissue, O = Oil, L = Liquid

Shipped By: ☐ Courier ☐ UPS ☐ FedEx ☐ USPS ☐ Client Drop Off ☐ Other

[1]Turn-Around-Time: ☐ Same Day ☐ 24 hr ☐ 48 hr ☐ 3 day ☐ 4 day ☐ 5 day ☒ STD (7 day)

[1]Reporting Requirements: ☐ Fax ☒ PDF ☐ Excel ☐ Geotracker/EDF ☒ Hard Copy ☐ EDT

[1]Sample Disposal: ☒ By Laboratory ☐ [2]Return to Client: PU or Delivery ☐ Archive

RELINQUISHED BY	DATE/TIME	
Signature		
Print		
Company:		
Signature		Signature
Print		Print
Company:		Company:

Sample Integrity

Correct Containers: Yes No N/A

Custody Seals Intact: Yes No N/A

COC/Labels Agree: Yes No N/A

Containers Properly Preserved: Y

Temp @ Receipt: _____

Sampled By: Client EMA Autc

Project/Sample Comments:

[1]Additional costs may apply, consult a project manager for details.

[2]EMA reserves the right to return any samples that do not match our waste profile.

NOTE: By relinquishing samples to EMA, Inc., client agrees to pay for the services requested on this COC form and any additional analyses performed on this project. Payment for services is due within 30 days from date of invoice. Samples will be disposed of 7 days after report has been finalized unless otherwise noted. All work is subject to EMA's terms and conditions.

Your Name

District Name

#glass/#plastic (ex: 4g/2-3p)

Discharge point #

Sample date & time

Date & time sample changed hands

Your info

Monitoring

Step 7: Deliver samples

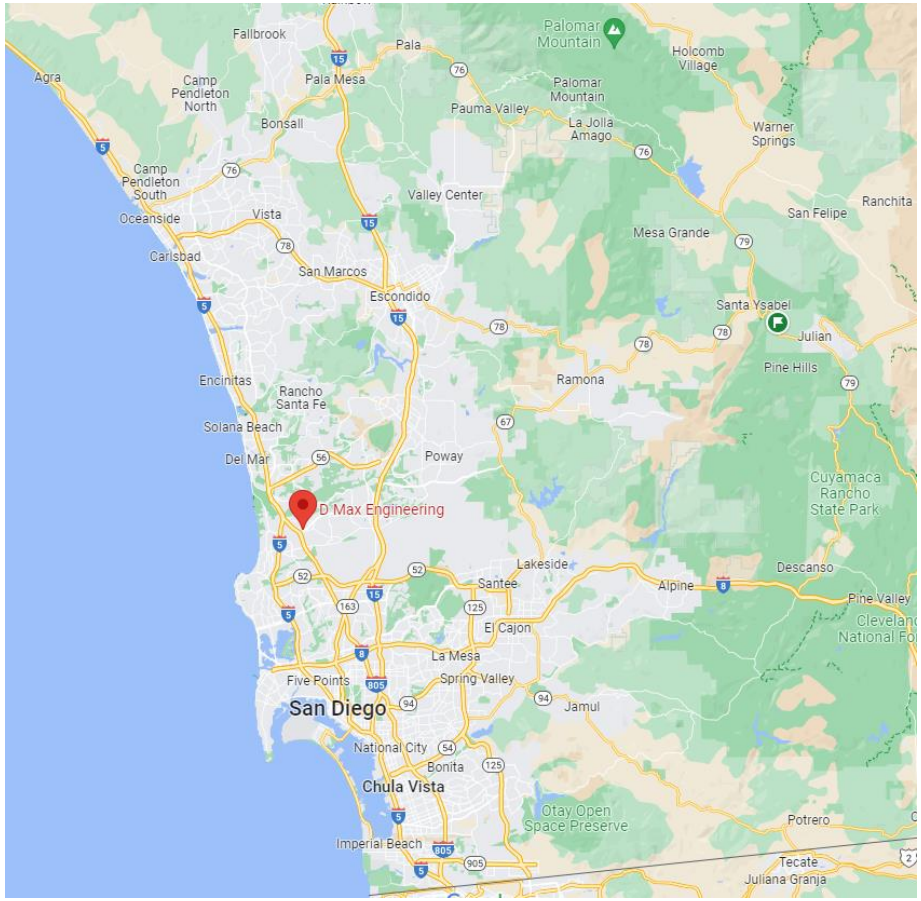
Deliver to the D-Max office within 24 hours, unless otherwise arranged (may deliver straight to lab in some cases)

D-Max Engineering Office:

5440 Morehouse Dr. Ste. 4500

San Diego, CA 92121

Pro Tip: Don't go to the old lab. New lab is located in South Orange County.



Monitoring

Step 8: Process Results

Sample Analysis Letter will include results & compliance status

Determine next steps if needed

- Additional sampling
- Additional BMP implementation

Certify Ad-Hoc Report in SMARTS ASAP

Monitoring

Step 8: Process Results

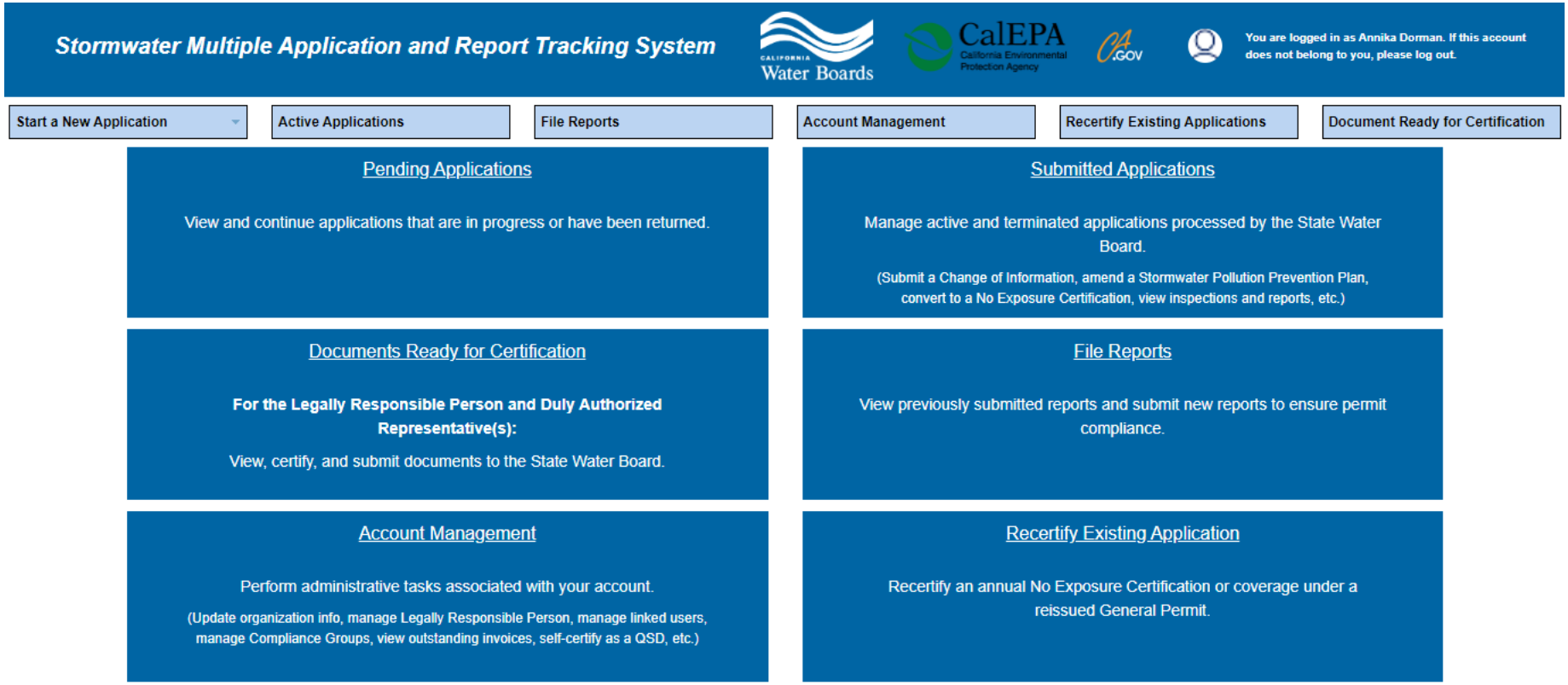
Sample Analysis Letter will include results & compliance status

Determine next steps if needed

- Additional sampling
- Additional BMP implementation

Certify Ad-Hoc Report in SMARTS ASAP

SMARTS Tutorial



SMARTS Tutorial

Operator Info | Facility Info | Addl. Facility Info | Billing Info | Attachments | Certification | Requirements | Reports | Inspections | Print | Status History | Linked Users | NOTs | COIs

Annual Audit

Start at Main Menu

"Active Applications" > Click on WDID

- Update "Operator Info", "Facility Info", and "Billing Info" tabs with current contact information
- Review "Linked Users" to ensure at least 2 active LRP/DAR linked with active eAuthorization on file

"Documents Ready for Certification"

- Ensure nothing is left pending

SMARTS Tutorial

Documents Ready for Certification

Ad-Hoc Reports
- QSEs
- Due 30 days post-receipt from lab

Annual Reports
- Submit all monthly reports
- Due July 15th

Change of Information (COI)
- SWPPP or Site Map updates
- Facility Information

Can save a PDF of your report from this page

Ad Hoc Reports

Select	Event ID	Event Type	Reporting Period
	1267018	Qualifying Storm Event	07/01/2022-06/30/2023
	1236918	Qualifying Storm Event	07/01/2022-06/30/2023
	1236916	Qualifying Storm Event	07/01/2022-06/30/2023
	1267020	Qualifying Storm Event	07/01/2022-06/30/2023
	1267021	Qualifying Storm Event	07/01/2022-06/30/2023

Annual Reports

Select	Report Id	Reporting Period	WDID
	1187817	07/01/2022-06/30/2023	9 30I013802
	1187838	07/01/2022-06/30/2023	9 37I001773
	1188990	07/01/2022-06/30/2023	9 37I017913
	1194104	07/01/2022-06/30/2023	9 37I026674

COIs

Select	COI ID	COI Type	WDID
	78377	NOI	9 37I017906

SMARTS Tutorial

General Info | Monitoring Location | Raw Data | PET | Data Summary | Attachments | Notes | Certify | Status History | Back to Report Main

Ad-Hoc Reports

Review "Data Summary" for agreement with analysis letter

Ensure lab reports uploaded under "Attachments"

Review "Notes" for special circumstances

- Sample bottle broken, late reports, etc.

"Certify" if all is in order

- Reenter password
- Answer security question

Confirmation Email

SMARTS Tutorial

General Info | Questions | Attachments | Certify | Status History | Notes | Back To Report Main | Back To NOI Summary

Annual Reports

Send in all monthly forms (monthly forwarding is preferred)

Review "Questions"

Review "Notes" for special circumstances

"Certify" if all is in order

- Reenter password
- Answer security question

Confirmation Email

SMARTS Tutorial

COI Form | Attachments | Certify/Review | Status History | Back To NOI Summary

COIs

Review "COI Form"

- See "Reason for Change" at bottom of form for Facility Info changes

Review "Attachments" – usually updated SWPPP or Site Map

"Certify" if all is in order

- Perform Completion Check
- Reenter password
- Answer security question

Confirmation Email

Compliance Group Updates

SWPPP UPDATES

NO EXPOSURE CERTIFICATION

CURRENT EVENTS

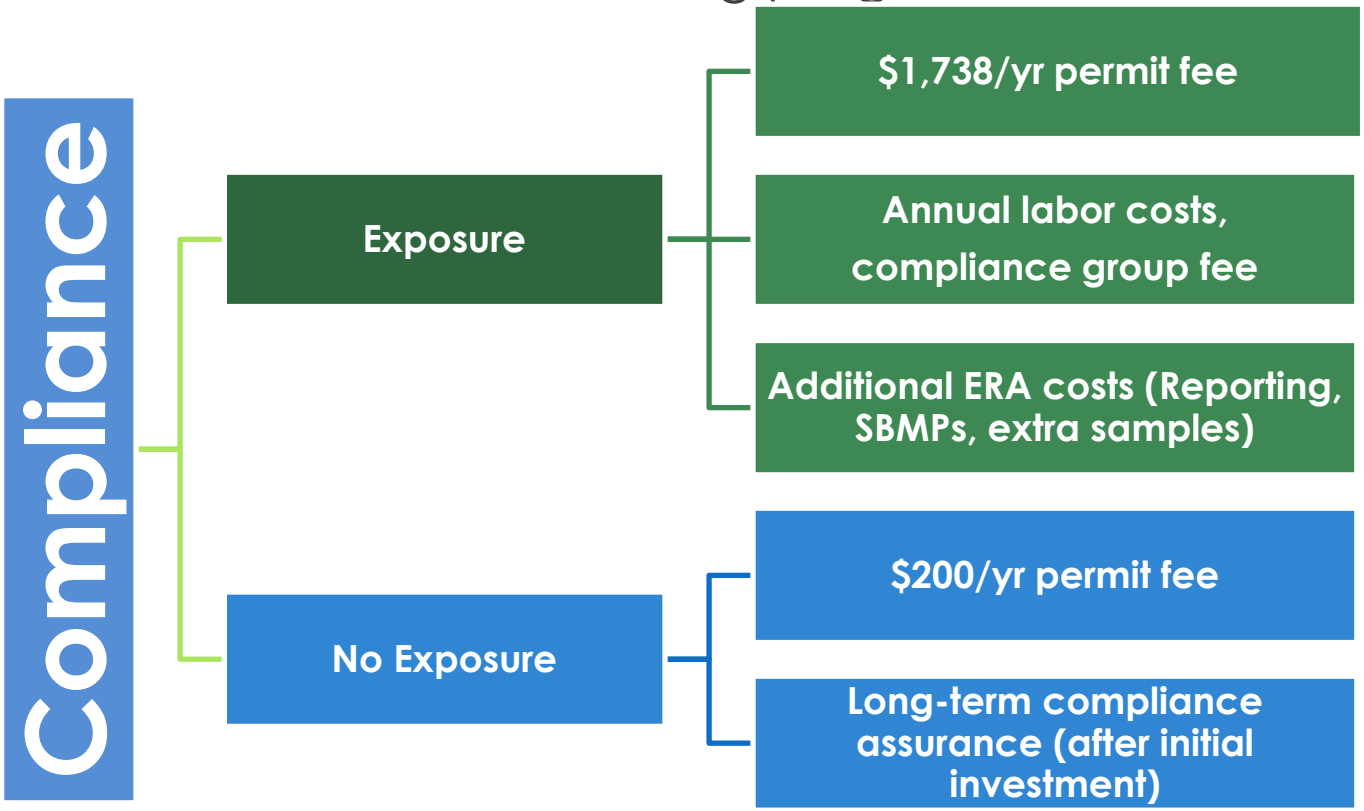
SWPPP Updates

Changes made to your SWPPPs for 2023-24 Reporting Year

- Reduced analytes based on analysis of last 10 years of data indicating bus yards are not a significant industrial source of:
  - Lead
  - Nickel
  - MBAS (soaps)
  - Gasoline (non-industrial)
- New Lab and drop-off protocols
- Other district-specific updates as needed

No Exposure Certification

Additional Districts have completed their No Exposure Certifications, with others making progress



No Exposure Certification

All industrial activities and materials are contained indoors or occur offsite (not in public ROW)

- Fueling
- Washing
- Maintenance

OR

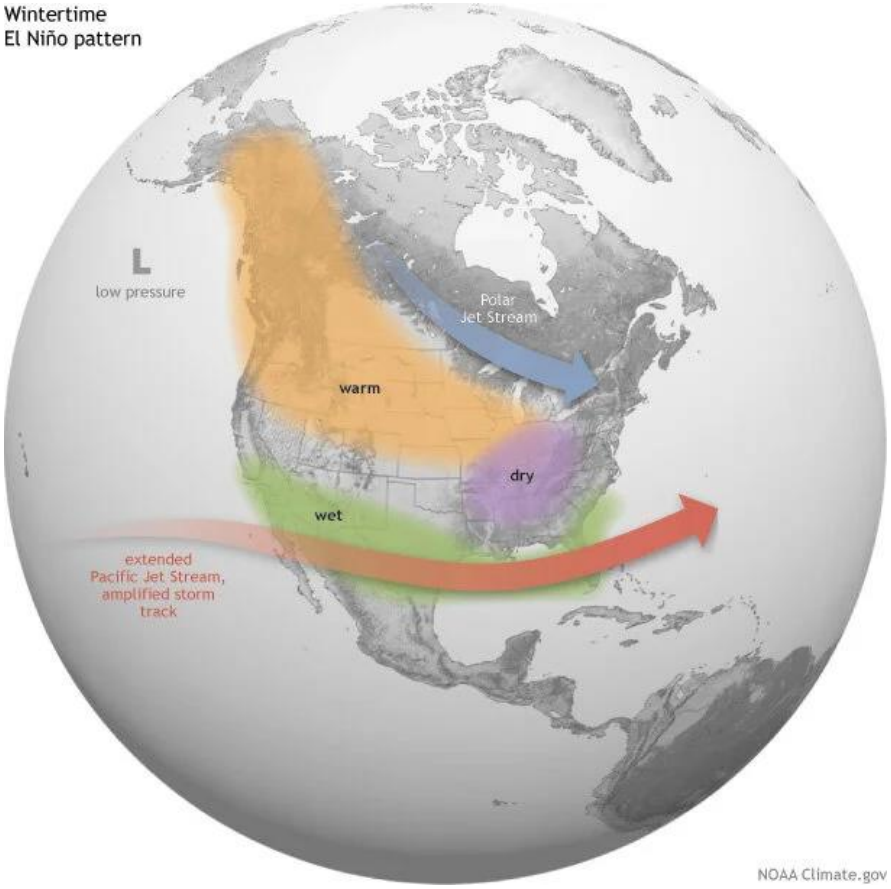
Are within cover and containment

- Bermed and/or draining to sewer

Current Events

El Niño conditions

- Per National Oceanic Atmospheric Administration (NOAA), there is a greater than 95% chance that El Niño continues across the Northern Hemisphere through the winter into 2024. The chance of a "strong" El Niño has also increased from 66% in August to now 71% in September.



Current Events

More rain Pros

- More QSEs = more room for error
  - Annual Averages reduced
  - Missed events
- Opportunities for additional QSE sampling to get out of level 1 or 2
- More rain *may* mean a cleaner slate (less long-term buildup)

More rain Cons

- Higher intensity rain can result in erosion, flooding, scouring
- Above conditions can transport more pollutants downstream

Current Events

More rain management

- Shore up existing BMPs, protections
  - Erosion control
  - Storage – secure tarps, clean behind storage units
  - Clean interior of secondary containment
  - Refresh inlet protections to eliminate displacement and clogging
- Keep sandbags handy
- Have additional staff trained to sample in case PPT staff are needed to handle high priority issues elsewhere

Questions & Contacts

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Training Sign-in sheet and Certificates: https://form.jotform.com/232574414639158