



**Inspection ~ Monitoring ~
Reporting ~ Recordkeeping**



Who Inspects

A CESCL is required to inspect all construction sites larger than an acre for NPDES permit compliance.

- CESCLs must inspect disturbed areas, BMPs and discharge points at least once per calendar week and within 24 hours of a discharge
- Discharges that last more than one day need only be inspected once per week

When to Inspect?

- **BMPs - at least once every 7 days**
- **Turbidity & pH - At least once every week AND within 24 hours of a discharge, OR**
- **AS REQUIRED BY THE PERMITTING AGENCY OR PER THE CONTRACT**





What to Inspect?

- **Areas disturbed by construction activities**
 - Signs of erosion or potential erosion
- **BMPs**
 - Performance (adequate for conditions?)
 - Maintenance (sediment buildup, wear & tear)
- **Stormwater discharge points**
 - Suspended sediment, turbidity, oil sheen



**BMP Damage Results
in Sediment Discharge**

Perimeter Sediment Control & Discharge Point





Indication of Slope Failure Under the Blanket

A black tarp is laid out on a grassy area. The tarp is not properly sealed or secured, with visible gaps and debris (sticks, twigs) lying on top of it. The surrounding area is overgrown with grass and weeds. The text is overlaid on the tarp.

Improper Installation:
Do the monitoring reports describe & document your permit compliance or non-compliance?



What should be in the monitoring report?
What action should be taken?

Inspection Report Requirements

Each inspection report or checklist shall include:

- a. Inspection date and time.
- b. Weather information; general conditions during inspection and approximate amount of precipitation since the last inspection, and within the last 24 hours.
- c. A summary or list of all BMPs which have been implemented, including observations of all erosion/sediment control structures or practices.
- d. The following shall be noted:
 - i. locations of BMPs inspected,
 - ii. locations of BMPs that need maintenance,
 - iii. the reason maintenance is needed,
 - iv. locations of BMPs that failed to operate as designed or intended, and locations where additional or different BMPs are needed, and the reason(s) why.



Inspection Report Requirements - cont.

- e. A description of stormwater discharged from the site. The inspector shall note the presence of suspended sediment, turbid water, discoloration, and/or oil sheen, as applicable.
- f. Any water quality monitoring performed during inspection.
- g. General comments and notes, including a brief description of any BMP repairs, maintenance or installations made as a result of the inspection.

Records and SWPPP's must be kept for 3 Years after N.O.T.

Site Inspection Checklist

**Construction Stormwater
SITE INSPECTION CHECKLIST**

Project: _____ Permit No. _____ Inspector _____ Date _____ Time _____

Overall Need G=Good F=Fair P=Poor Y=Yes N=No
Condition Repair? Comments/Observations

Site BMPs	Overall Condition	Need Repair?	Comments/Observations		
Clearing Limits					
• Buffer Zones around sensitive areas	G F P	Y N			
•	G F P	Y N			
•	G F P	Y N			
Construction Access/Roads					
• Stabilized site entrance	G F P	Y N			
• Stabilized roads/parking area	G F P	Y N			
•	G F P	Y N			
Control Flow Rates					
• Swale	G F P	Y N			
• Dike	G F P	Y N			
• Sediment pond	G F P	Y N			
• Sediment trap	G F P	Y N			
•	G F P	Y N			
•	G F P	Y N			
Install Sediment Controls					
• Sediment pond/trap	G F P	Y N			
• Silt fence	G F P	Y N			
• Straw bale barriers	G F P	Y N			
•	G F P	Y N			
•	G F P	Y N			
•	G F P	Y N			
Preserve Vegetation/Stabilize Soils					
• Nets and blankets	G F P	Y N			
• Mulch	G F P	Y N			
• Seeding	G F P	Y N			
•	G F P	Y N			
•	G F P	Y N			
Protect Slopes					
• Terrace	G F P	Y N			
• Pipe slope drains	G F P	Y N			
•	G F P	Y N			
•	G F P	Y N			
Protect Drain Inlets					
• Inserts	G F P	Y N			
•	G F P	Y N			
•	G F P	Y N			
Stabilize Channels and Outlets					
• Conveyance channels	G F P	Y N			
• Energy dissipators	G F P	Y N			
•	G F P	Y N			
Control Pollutants					
• Chemical Storage Area covered	G F P	Y N			
• Concrete handling	G F P	Y N			
•	G F P	Y N			
Control De-watering					
•	G F P	Y N			

**Construction Stormwater
SITE INSPECTION CHECKLIST**

Project: _____ Permit No. _____ Inspector _____ Date _____ Time _____

Will existing BMPs need to be modified or removed, or other BMPs installed? YES NO
IF YES, list the action items to be completed on the following table:

Actions to be Completed	Date Completed/Initials
1.	
2.	
3.	
4.	
5.	
6.	

Describe current weather conditions

Approximate amount of precipitation since last inspection and within the past 24 hours:
_____ inches
**based on an on-site rain gauge or local weather data.*

Describe discharging stormwater, if present. Note the presence of suspended sediment, "cloudiness", discoloration, or oil sheen.

Was water quality monitoring part of this inspection? YES NO
If yes, record results below (attach separate sheet, if necessary):

Parameter:	Method (circle one)	Result	Units
Turbidity	tube, meter, laboratory		NTU (cm, if tube used)
pH	paper, kit, meter		pH standard units

Is the site in compliance with the SWPPP and the permit requirements? YES NO
If no, indicate tasks necessary to bring site into compliance on the "Actions to be Completed" table above, and include dates each job WILL BE COMPLETED.
If no, has the non-compliance been reported to Dept. of Ecology? YES NO
If no, should the SWPPP be modified: YES NO

Sign the following certification:
"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."

Inspection completed on: _____ by: (print+signature) _____

Title/Qualification of Inspector: _____

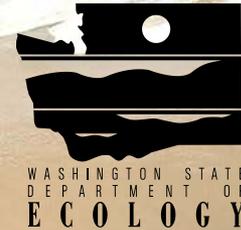


Inspection Locations?





Inspection: What Next?



- Review SWPPP for permit compliance
- Change SWPPP within 7 days if necessary
- Implement / maintain BMPs within 10 days
- Document BMP maintenance/addition in log book

Site Log Book

- Keep 4 items in binder:
 - Permit
 - Permit coverage letter
 - SWPPP and changes
 - Site log book
- On-site or within reasonable access.
- Log book includes inspection reports, SWPPP changes, and monitoring results.
- Records (SWPPPs, inspection reports, sampling records, etc.) must be kept for 3 years

Log Book Entries

- Date, place, method, and time of sampling or inspection
- Name of person doing sampling/inspection
- Observations made during inspection
- Any maintenance performed
- Dates samples were analyzed
- Analytical methods used
- Results of analysis



SWPPP is a "Living Document"

- Mark up the plans with changes
- Date and initial the changes

Construction SWPPP Narrative
This narrative is intended to accompany the Erosion and Sediment Control Plans for Hand Dill Town Center. Once Engineering Phase 1 Construction Plans dated March 6, 2003 were approved by Clark County on September 8, 2003. Once Engineering Phase 2 Construction Plans dated 9/2/04 were submitted to Clark County for approval September 17, 2004.

Construction Stormwater Pollution Prevention Program Elements
a. Describe how each of the Construction Stormwater Pollution Prevention Elements has been addressed through the Construction SWPPP.
b. Identify the type and location of BMPs used to satisfy the required elements.
c. If an element is not applicable to a project, a written justification for why it is unnecessary must be included.
1. Mark Clearing Limits
The Clearing Limits are to be clearly marked prior to construction, including parallel limits before and grading limits.
2. Establish Construction Access
Three separate stabilized construction entrances are to be constructed and serve all access points for the site. They are to be a minimum 10 feet wide, 12 inches high, and 12 inches deep. They are to be constructed with 12 inch SP-15 gravel and 12 inch SP-15 gravel on top. They are to be constructed with 12 inch SP-15 gravel and 12 inch SP-15 gravel on top. They are to be constructed with 12 inch SP-15 gravel and 12 inch SP-15 gravel on top.

Discharge Monitoring Reports

- If you are required to take samples, you must submit DMRs
 - Monthly
 - Electronic submittal unless otherwise approved by Ecology
- If you have **no** discharges, you must still submit a form stating "no discharges."
- Ecology must receive the DMR within 15 days after the end of the month

Where Do We Sample Turbidity?

At All Points of Stormwater Discharge:

- Ditches; excavate small sump if needed
- Pipe or pond outfalls
- Detention ponds/other BMPs
- Catch Basins; scoop from gutter
- Vegetated areas; construct trench to collect discharge
- Paved areas; use speed bumps to collect stormwater samples
- As close to discharge point as safe and reasonable
- Remember to Flag it in the field & Mark on SWPPP site map!!!

Background

Site Discharge



When Do We Sample?



Turbidity:

- Once a week when discharging
- No discharge means no sampling

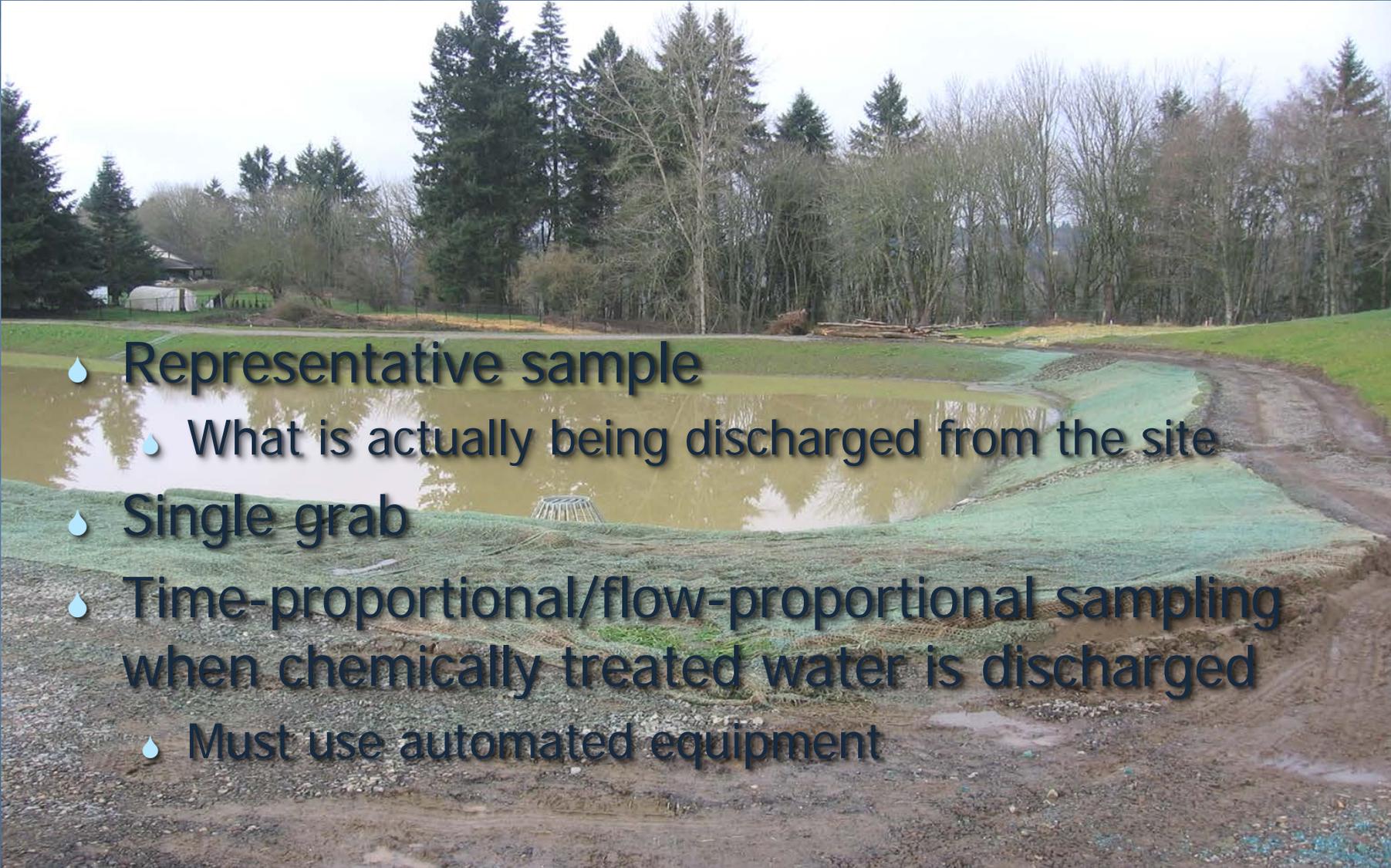


Where to Sample:

- Discharge Point
- Receiving Water when discharge is 250 NTU or greater if permittee wants to demonstrate compliance with water quality standards

**Where is the Point of Compliance?
NPDES Benchmark?
Receiving Water?**

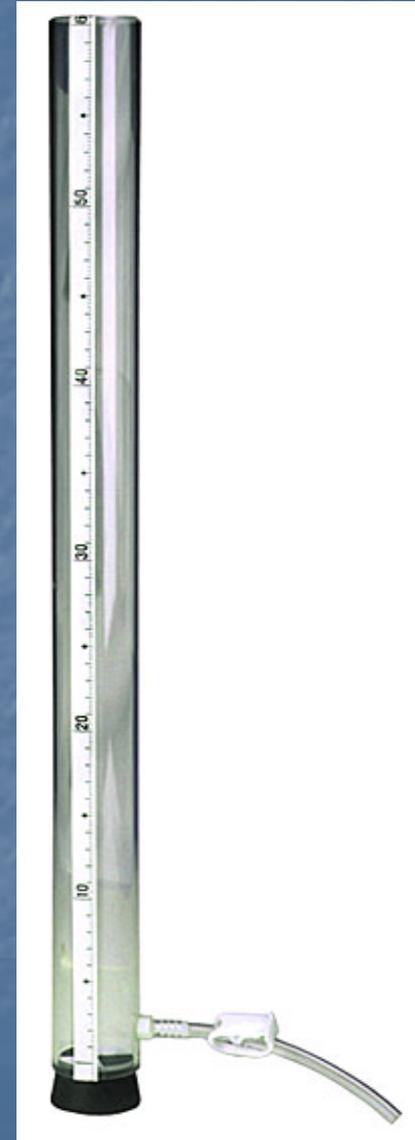
How To Sample?

- 
- Representative sample
 - What is actually being discharged from the site
 - Single grab
 - Time-proportional/flow-proportional sampling when chemically treated water is discharged
 - Must use automated equipment

Turbidity Meter



Transparency Tube



Transparency of B/W Markings at Bottom Shows Turbidity Level





Self Reporting

Photos Courtesy WADOE

Three clear plastic bottles are lined up on a dark surface, each containing water of a different level of turbidity. The bottles are capped with white screw-on lids. The background shows a clear blue sky and some green foliage. The water in the bottles becomes progressively more opaque and yellowish from left to right. The text labels are overlaid on the bottom of each bottle.

25 NTU

250 NTU

**Way Over
1000 NTU**



Turbidity Monitoring Benchmark 26-249 NTU

If discharge turbidity is greater than 25 NTU, but less than 250 NTU; or if discharge transparency is less than 33 cm, but greater than 6 cm, the CESCL shall:

Review the SWPPP for compliance with Condition S9 and make appropriate revisions within 7 days of the discharge that exceeded the benchmark; and

Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but within 10 days of the discharge that exceeded the benchmark; and

Document BMP implementation and maintenance in the site log book.



Turbidity Monitoring When Discharge Exceeds 250 NTU Benchmark

If discharge turbidity is greater than or equal to 250 NTU; or if discharge transparency is less than or equal to 6 cm, the CESCL shall notify Ecology by phone or electronically within 24 hours plus

Review the SWPPP for compliance with Condition S9 and make appropriate revisions within 7 days of the discharge that exceeded the benchmark; and

Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but within 10 days of the discharge that exceeded the benchmark; and

Document BMP implementation and maintenance in the site log book.

Turbidity Monitoring When Discharge Exceeds 250 NTU Benchmark

Continue to sample discharges daily until:

- Turbidity is 25 NTU (or lower); or transparency is 33 cm (or greater); or
- the CESCL has demonstrated compliance with the water quality standard for turbidity in the receiving water; or
- the discharge stops.



**Where must turbidity benchmarks
be met?**

**Where must water
quality standards be
met?**

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Turbidity/Transparency Benchmarks Summary

0- 25 NTU > 33 cm	<i>No action required</i>
26-249 NTU 32-7 cm	<ol style="list-style-type: none"><i>1. Review SWPPP for S9 compliance w/in 7 days</i><i>2. Implement/maintain source control/treatment within 10 days</i><i>3. Document implementation/maintenance</i>
250 NTU <6 cm	<ol style="list-style-type: none"><i>1. Notify DOE</i><i>2. Review SWPPP for S9 compliance w/in 7 days</i><i>3. Implement/maintain source control/treatment within 10 days</i><i>4. Document implementation/maintenance</i><i>5. Sample daily until in compliance or discharge ends</i>

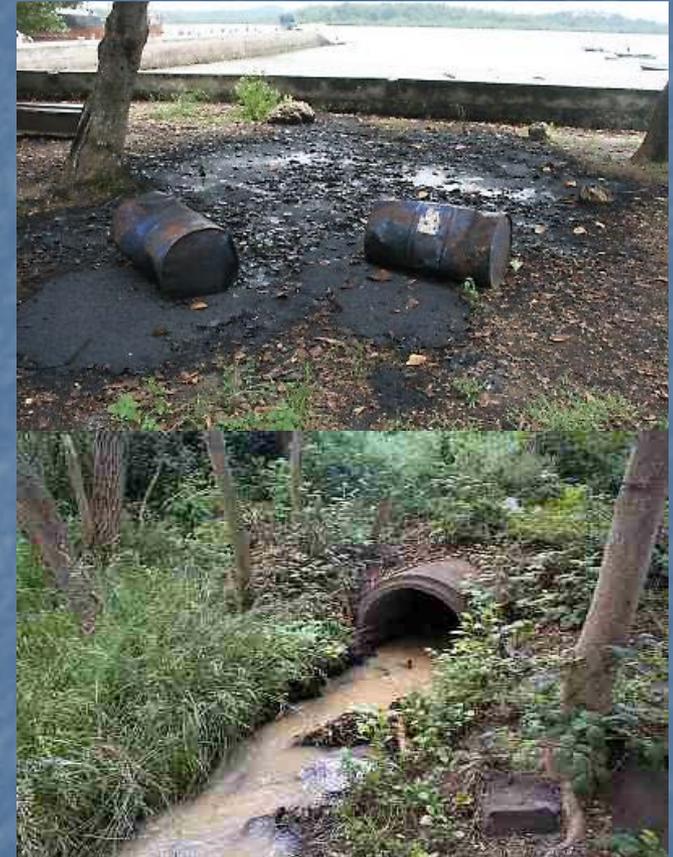
Contact information for non-compliance reporting or ERTS.

If a discharge point's turbidity is 250 NTUs or greater, or if discharge transparency is less than or equal to 6 cm, the Permittee must complete the reporting and adaptive management process described below.

- i. Telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) number (or through Ecology's Water Quality Permitting Portal [WQWebPortal] – Permit Submittals when the form is available) within 24 hours, in accordance with Special Condition S5.A.
 - ◆ Central Region (Okanogan, Chelan, Douglas, Kittitas, Yakima, Klickitat, Benton): (509) 575-2490
 - ◆ Eastern Region (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400
 - ◆ Northwest Region (Kitsap, Snohomish, Island, King, San Juan, Skagit, Whatcom): (425) 649-7000
 - ◆ Southwest Region (Grays Harbor, Lewis, Mason, Thurston, Pierce, Clark, Cowlitz, Skamania, Wahkiakum, Clallam, Jefferson, Pacific): (360) 407-6300

Links to these numbers and the ERTS reporting page are located on the following web site:

[http://www.ecy.wa.gov/programs/wq/stormwater/constructi
on/index.html..](http://www.ecy.wa.gov/programs/wq/stormwater/constructi
on/index.html..)



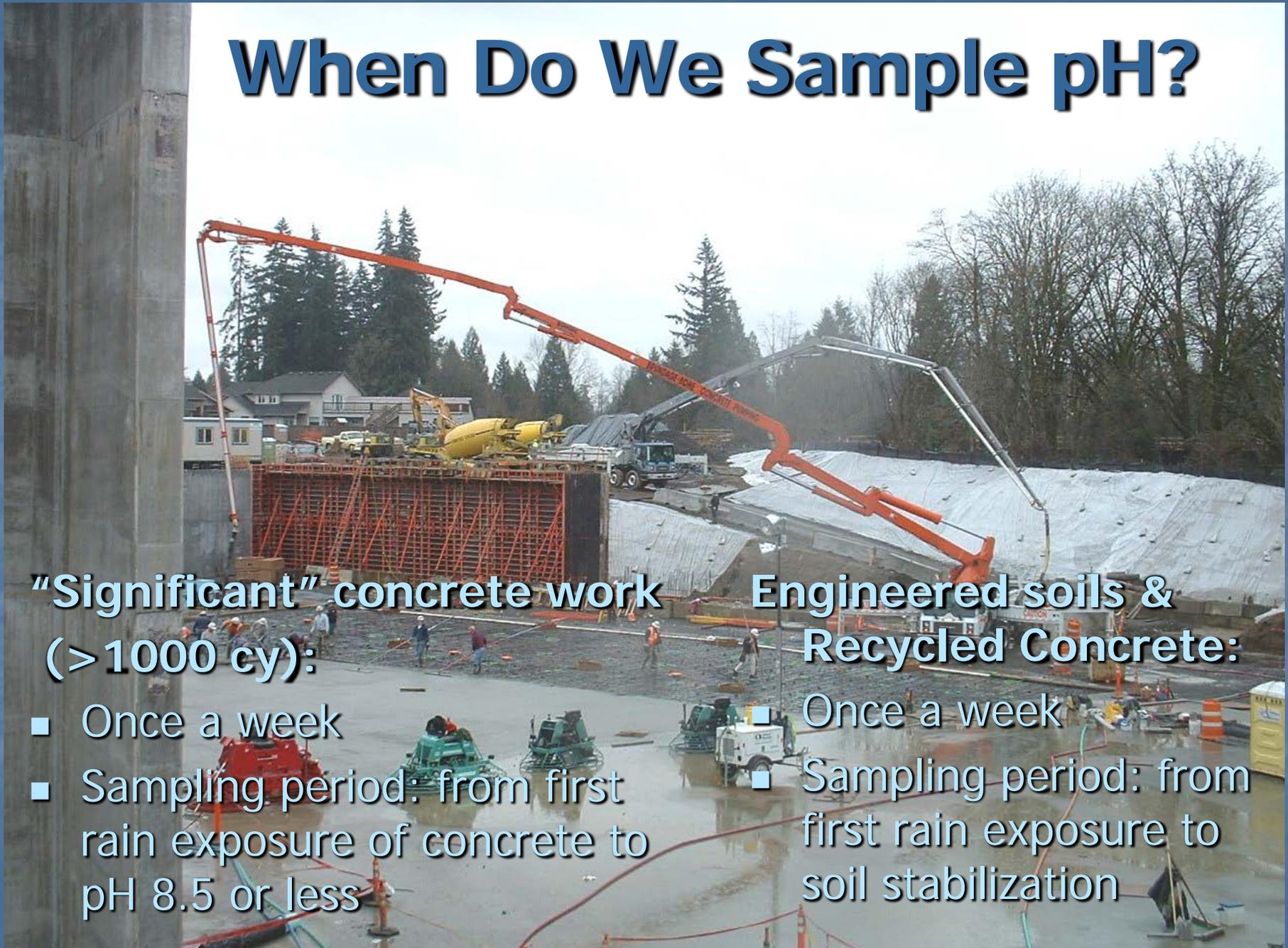
When Do We Sample pH?

**"Significant" concrete work
(> 1000 cy):**

- Once a week
- Sampling period: from first rain exposure of concrete to pH 8.5 or less

**Engineered soils &
Recycled Concrete:**

- Once a week
- Sampling period: from first rain exposure to soil stabilization



pH Meter

**MULTIPLE
PARAMETERS**

pH & EC ppm, pH & EC

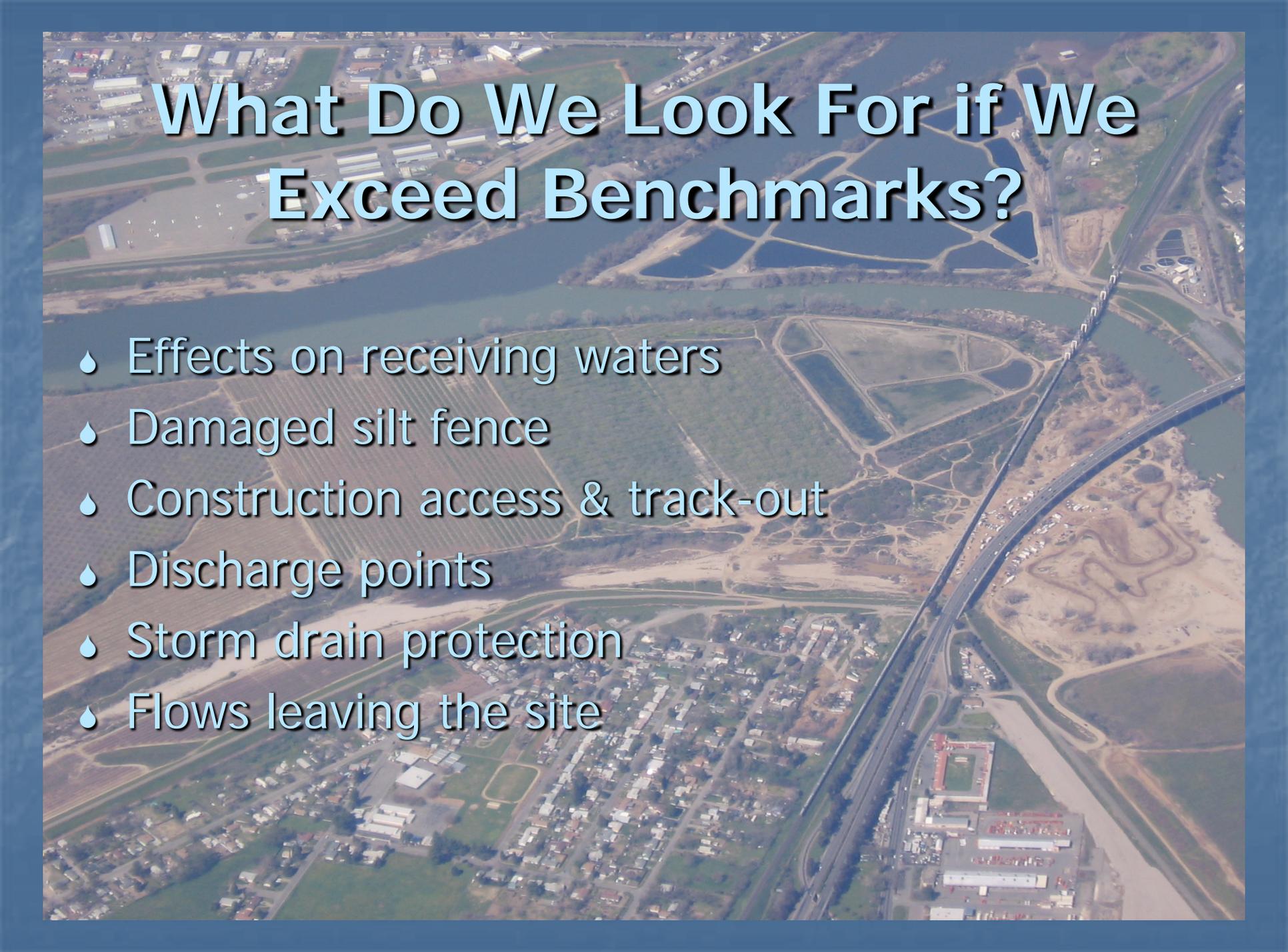


pH Standards for Discharge

pH Monitoring Required when amending soils or pouring > 1000CY

- pH shall be within the range of 6.5 to 8.5 (freshwater)
- Human-caused variation less than 0.2 units



An aerial photograph showing a large-scale construction project. A multi-lane highway runs diagonally across the scene. To the left, there are several large, rectangular water retention ponds. The foreground shows a residential neighborhood with houses and streets. In the background, there are industrial buildings and more construction-related infrastructure. The overall scene is a mix of natural and man-made elements, illustrating the potential for environmental impact from construction activities.

What Do We Look For if We Exceed Benchmarks?

- 💧 Effects on receiving waters
- 💧 Damaged silt fence
- 💧 Construction access & track-out
- 💧 Discharge points
- 💧 Storm drain protection
- 💧 Flows leaving the site















Inspection & Monitoring Review

Who?

- **CESCL does the inspection & monitoring**

What?

- **All disturbed areas, BMP's, outfalls, exits, impacted areas**

When?

- **Weekly and within 24hr of discharge**

Where?

- **Discharge points, BMPs and disturbed areas**

Why?

- **Permit requirements & risk management**