

SEDIMENT BASINS

Before - Within - After

Practical BMPs that a contractor can do that will reduce the amount of sediment leaving a construction site.

Contractor's have four opportunities to reduce the amount of sediment leaving their construction site

1. Before sediment reaches the basin
2. Within the basin
3. Discharge from the basin
4. BMPS after the basin

Before sediment reaches the basin, the objective is to “minimize erosion”

Contractors can do this by:

- Minimizing exposed soil surfaces during disturbance
- Establish and maintain temporary or permanent vegetation when grading is completed



Too much exposed surface – poor practice



Immediate protection – good practice

Before sediment reaches the basin – “control the flow”

Contractors can do this by:

- Using sediment barriers
- Lining the channel



Washed-out check dam – poor practice



Sediment barriers – good practice

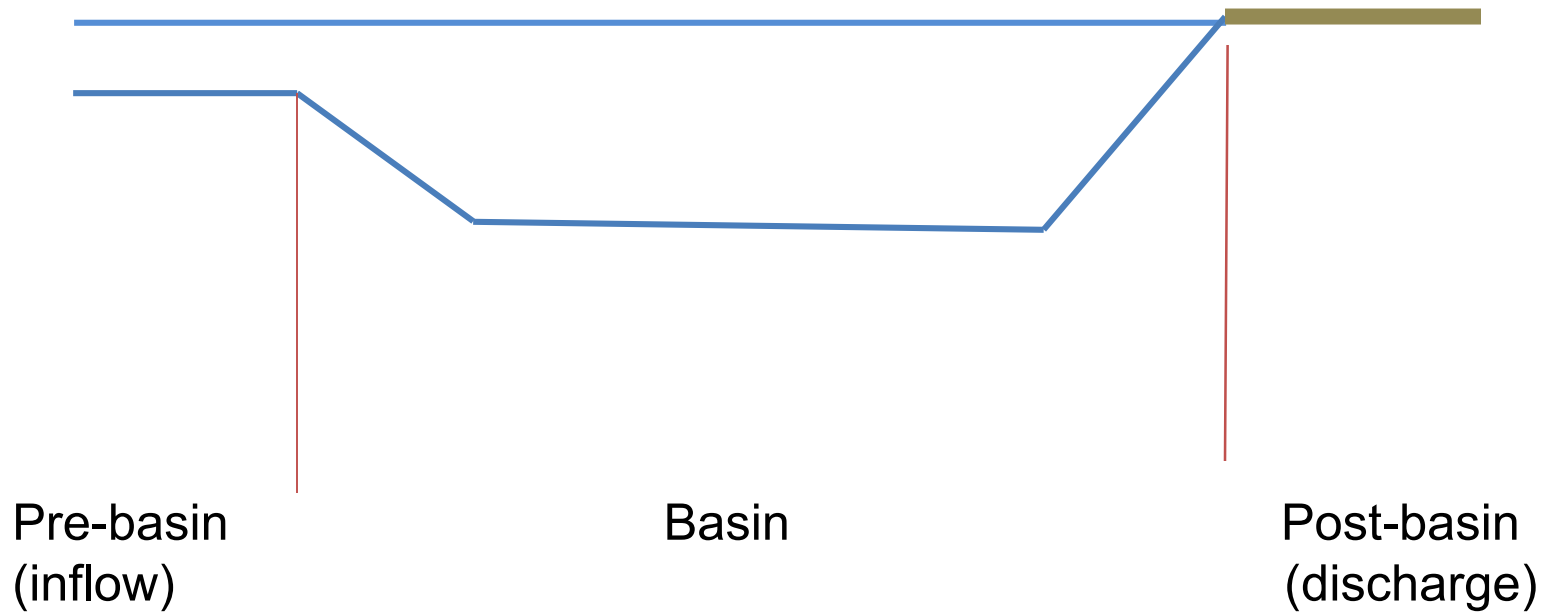


Temporary channel liner and polymer treatment – good practice



Permanent channel liners – good practice

Within the basin, a number of BMPs can be added



Effective sediment basins incorporate a combination of interactive BMPs before the flow enters the basin.

Inflow - energy dissipater

- forebay
- rock filter berms



Energy dissipaters break up the 'fire-hose effect – good practice



Forebays spread the flow - good practice



Rock filter berms trap and retain the larger particles – good practice

Effective sediment basins
incorporate a combination of
interactive BMPs in the body

Body - baffles

- netting

- shoreline protection



Baffles reduce short-circuiting – good practice



Netting captures fines coated with polymer – good practice



Shoreline protection using polymer reduces erosion by wave action – good practice



Netting reduces resuspension of sediment – good practice



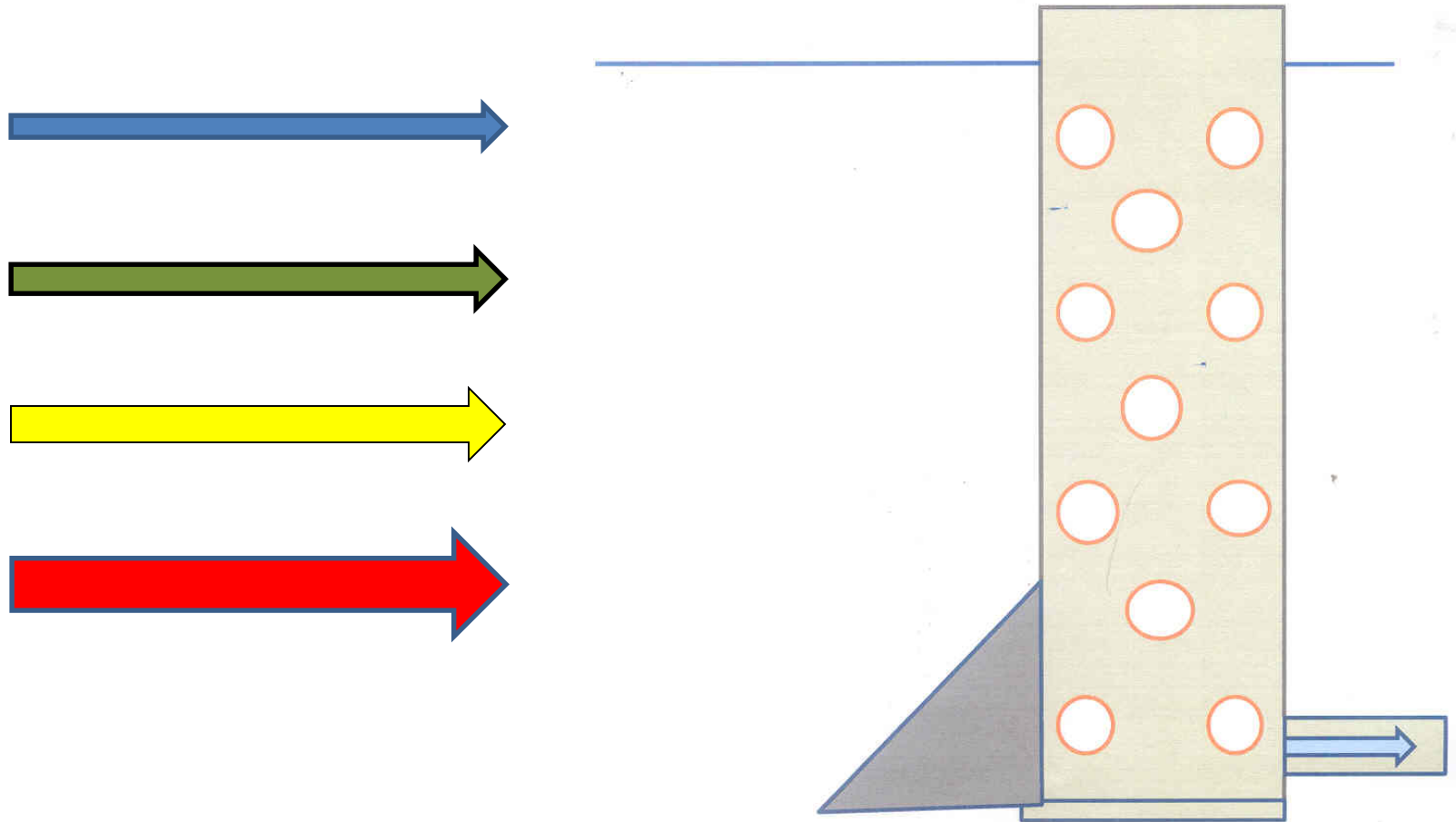
Multiple integrated BMPs

Effective sediment basins incorporate a combination of interactive BMPs at the discharge

The discharge - the vertical riser pipe
 - the surface skimmer

Controlled release – Install a valve

Remember: NO RELEASE during inflow



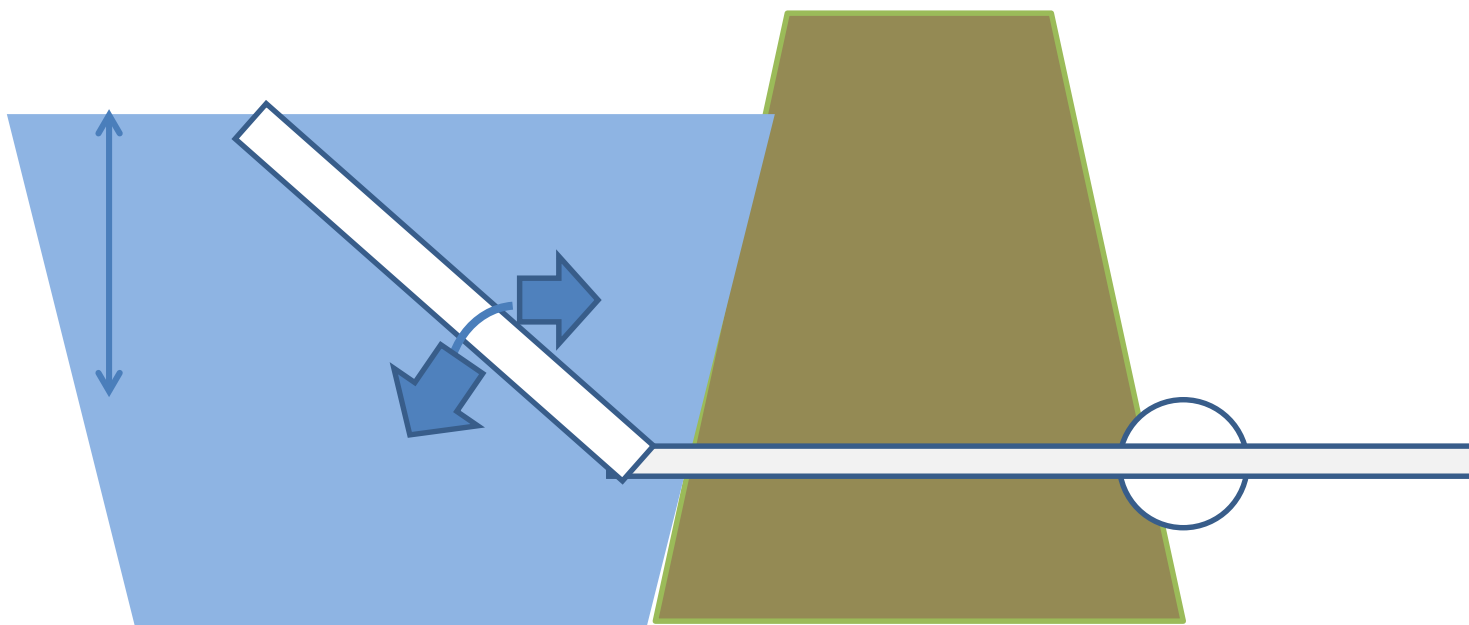
The Vertical Riser Pipe and Retrofit Stone

When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the plan. Outlet structures that withdraw water from the surface are temporary BMP's and must be removed prior to submitting a Notice of Termination. For construction activities where a NOI was submitted prior to January 1st, 2014, this requirement of the permit is not applicable.

The Surface Water Removal Requirement



Two skimmers



Skimmer-arm articulation

Valve

Skimmers – Things we have learned

- **No discharge during inflow;** install a valve at the discharge end
- Use baffles and filters to enhance water quality prior to discharge
- The rigid tube must be long
- Discharge the pond within a 24 – 72 hour period
- Discharge rate is irregular when $H < 6$ inches

After the flow discharges from the basin, we have another opportunity to remove sediment before it leaves our site.



Filter Bags



Vegetation and Level Spreaders

REMEMBER

Sediment basins are management tools

- Use them right and get the benefits
- Use them wrong, and suffer the consequences

If you have any questions later, please contact me.

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Thank you