Polyacrylamide (PAM) for Turbidity Control

- Water soluble synthetic polymer of acrylamide
- Forms: dry powder, solution, emulsion, logs

Suspended Silt & Clay

Add (PAM)

Flocs Form, Settle

PAM No PAM
**Keys to Making PAM Work for You**
- Match PAM to your soil or suspended sediment and water chemistry.
- Reduce sediment load prior to PAM treatment.
- Keep the PAM logs moist.
- Create high flow onto PAM.
- Create high mixing (turbulence) after PAM.
- Allow for settling post-treatment.

**Wattle Installation Guide**

The Basics: Simply fit the wattle across the ditch with some erosion control blanket beneath it.

Sprinkle 4 ounces of PAM over the lower center portion of the wattle prior to rain event.
**Typical Installation Materials**

- Metal sod staples and mallet
- 24" long wooden stakes
- Erosion control blanket
- Wattle
- Close up of the mesh

**Installation Guide**

- Place erosion control matting as splash pad
  - 1/3 upslope and under wattle with remaining 2/3 down slope
  - Staple edges and interior at 1 ft spacing; staple interior of matting in offset rows

- Place wooden stakes to secure wattle to ground contour and to prevent from dislodging in large/intense rain events
  - 4 wooden stakes on down slope side; angle upslope
  - 2 wooden stakes on upslope side; angle down slope

- Weave wire staples through mesh at an angle to the wattle-space every 1 ft.
- Fill gaps with excess fabric
Sprinkle 4 oz. of PAM on the lower front, back, and center portion of the wattle where water is flowing.

Case Study

2009 History Note

EPA’s Effluent Limitations

- 280 NTU limit for construction site water quality discharges
- WQ monitoring req’d for sites disturbing over 20 Ac; then 10 Ac
- EPA “stayed” the proposed rule in 2009 and withdrew in 2014
Wattles with PAM

Installation Guide
Temporary Rock Silt Check Type A with Excelsior/Coir Matting and PAM

Materials Needed
Coir Fiber Matting  Excelsior Matting

4 oz. Polyacrylamide
**Wrap Installation**

- Coir or Excelsior matting may be used
- Place matting on the sediment control stone
- Cut matting to the desired length

**Anchor matting at top and bottom with rip rap**

**PAM Application**

- Sprinkle 4 oz. of PAM on the top, lower portion of matting section
- Re-apply after a 0.5" rain event, if needed.
NTU Data

- Baffled basin with no wattle/PAM - 327 NTU
- Baffled basin with wattle/PAM - 58 NTU

Stream Data

- Upstream 8.2 NTU
- Downstream 6.4 NTU
- 1.5” rainfall from March 13-16
US 19, Burnsville, NC

- 20 miles north of Asheville, NC
- Trout waters
  - 10 NTUs
- 4 oz. PAM Application

BMP

Phipps Creek
Cost Comparison

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Summary

- Studies indicate that FCD and PAM are superior to rock measures to reduce turbidity.
- Studies indicate that wrapped rock measures perform superior to rock alone to reduce turbidity.
Questions

• What are the important factors when selecting PAM for use on construction projects?

• What is the PAM application rate on FCD’s and how often should it be applied?

• What are good materials for wrapped rock dams?

- anionic or neutral; match soil to PAM; don’t use at discharge point; good mixing

- 4 oz (2+1+1); after each 0.5 rain in 24hr period

- Coir fiber netting and excelsior matting
### Ellery Monitoring Stations

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### Coir Fiber Baffles on Haul Road

![Coir Fiber Baffles on Haul Road](image)

### Haul Road adjacent to ag operations

![Haul Road adjacent to ag operations](image)
Haul Road
with heavy clay soils near large lake

 shortly after installation and staged seeding.

Haul Road
after 1”-2” rainfall event
Questions

- How do baffles work when installed in pits/silt basins?
- What is the desired height?
- How should they be spaced in a basin?

Summary

- Many BMP options available
- Match BMP to site conditions
- Analyze each system for cost and effectiveness
- Requires a skilled technician to manage systems

Questions