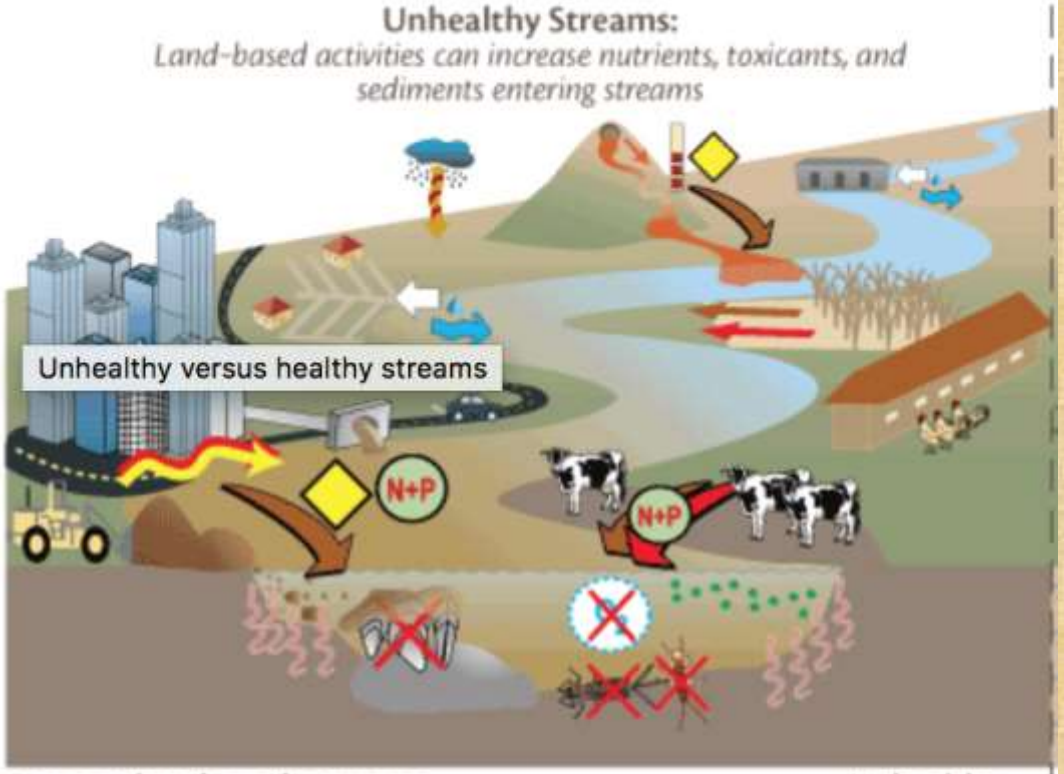
Benefits of Rolled Filtration

Presented by SILTWORM Inc

From rainwater to drinking water, Siltworm strives to keep our local waterways free of damaging pollutants, sediment and harmful job-site contaminants.

Clean Water, Clean World

IMPAIRED WATERS



OF THE USA

WHAT IS ROLLED FILTRATION ?
HOW IS ITS GREEN TECHNOLOGY DIFFERENT?

- **Revolutionary Sediment Control** device that works through **Filtration** instead of **Diversion.**
- **Complete replacement** for silt fencing that gives you a better site solution with less maintenance and better results.
- **Green Sediment Control** product that is changing the effectiveness of complete jobsite control systems.

GREEN Technology

SILTWORM™

sales@siltworm.com
219-885-WORM

MANUFACTURING & PACKAGING PROCESS

PHASE ONE

SILTWORM partners with the largest recycling firm in Chicago to manufacture a superior fill material made from recycled wood waste.

PHASE TWO

At the SILTWORM facility, the manufactured fill is separated out to a percentage of fin material to create maximum filtration potential.

PHASE THREE

We insert the fill material into a geotextile fabric that is manufactured to specific lengths, diameters and filtration capacity relative to our customers' needs.

PHASE FOUR

The pallets are then banded to add support for shipping.

PHASE FIVE

We palletize and shrink wrap the pallets to protect them from the elements and prepare them for shipping and outdoor storage.

PHASE SIX

The SILTWORM product is packaged to maximize the effectiveness of our logistics for our distributors and installers.

WHY DOES YOUR SITE LOOK LIKE THIS?

1. DIVERSION
2. DAMMING
3. DESIGN

HOW DO WE FIX YOUR SITE?

1. **BE**TTER DESIGN
2. **BE**

Fix it with: **GREEN TECHNOLOGY**

Fix it with: Fix it with: Rolled Filtration

WHY IS FILTRATION SO EFFECTIVE?

IT JUST IS?

WHY DOES SILT FENCE FAIL?

THE WIND

THE RAIN

IT JUST DOES?

SILT FENCE FAILS BY DESIGN

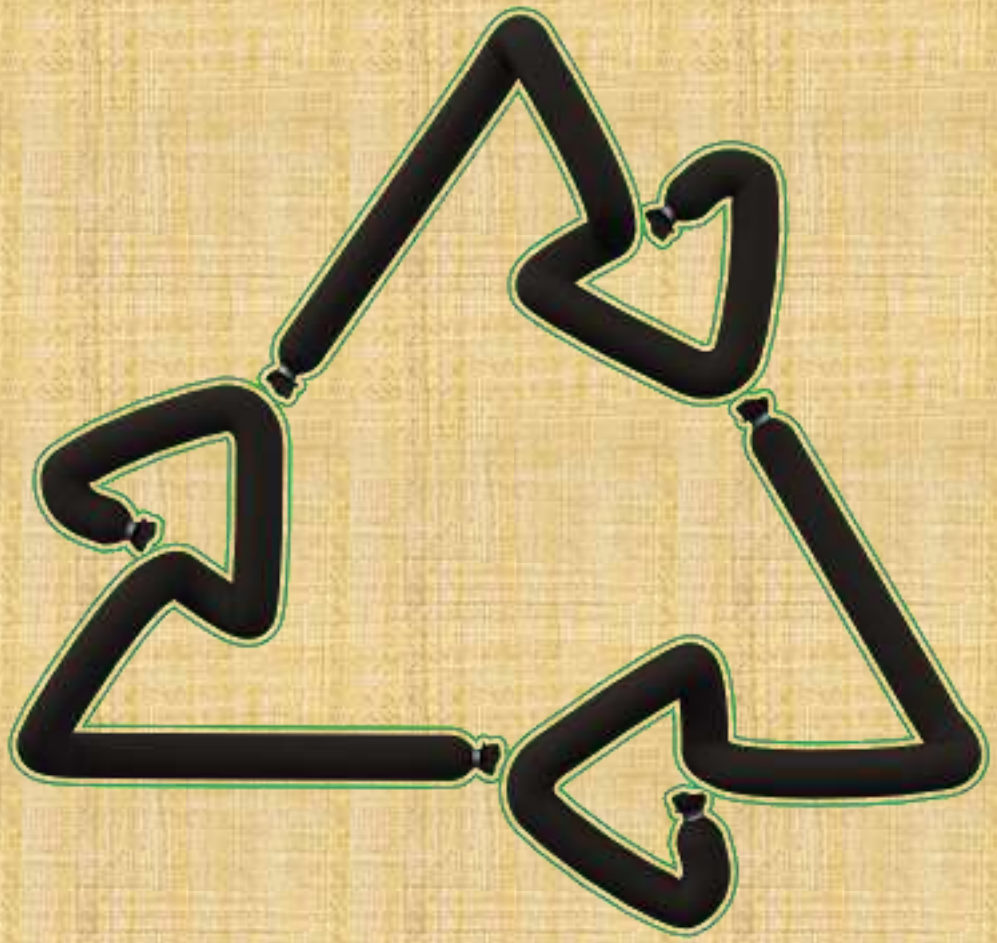
OVERLOADING

OVERTOPPING

WHAT HAVE WE DONE TO COMBAT DESIGN FAILURE?

Added Wire Backing, Increased Stake Spacing and Size?

SILTWORM APPLICATIONS



PERIMETER CONTROL

JUST

ADD

WATER

DITCH CHECK APPLICATION

JUST

ADD

WATER

HARD SURFACE PROTECTION

JUST

ADD

WATER

STOCKPILE

JUST

ADD

WATER

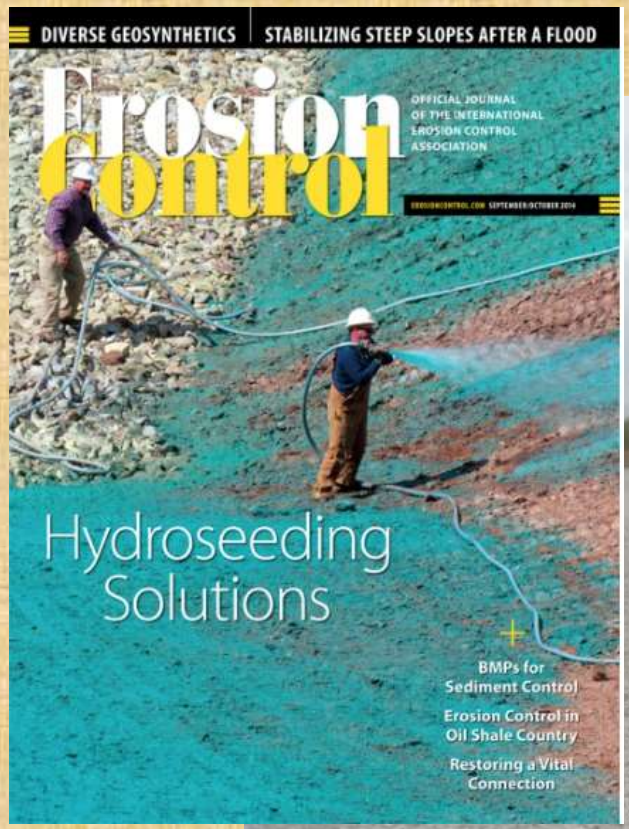
INLET PROTECTION

JUST

ADD

WATER

PROTECTED AREAS & WETLANDS



- FEAURE ARTICLE
- SEPT 2014
- APRIL 2015

ADDITIONAL USES??

CONCRETE WASHOUTS

SEDIMENT TRAPS

SLOPE INTERRUPTION

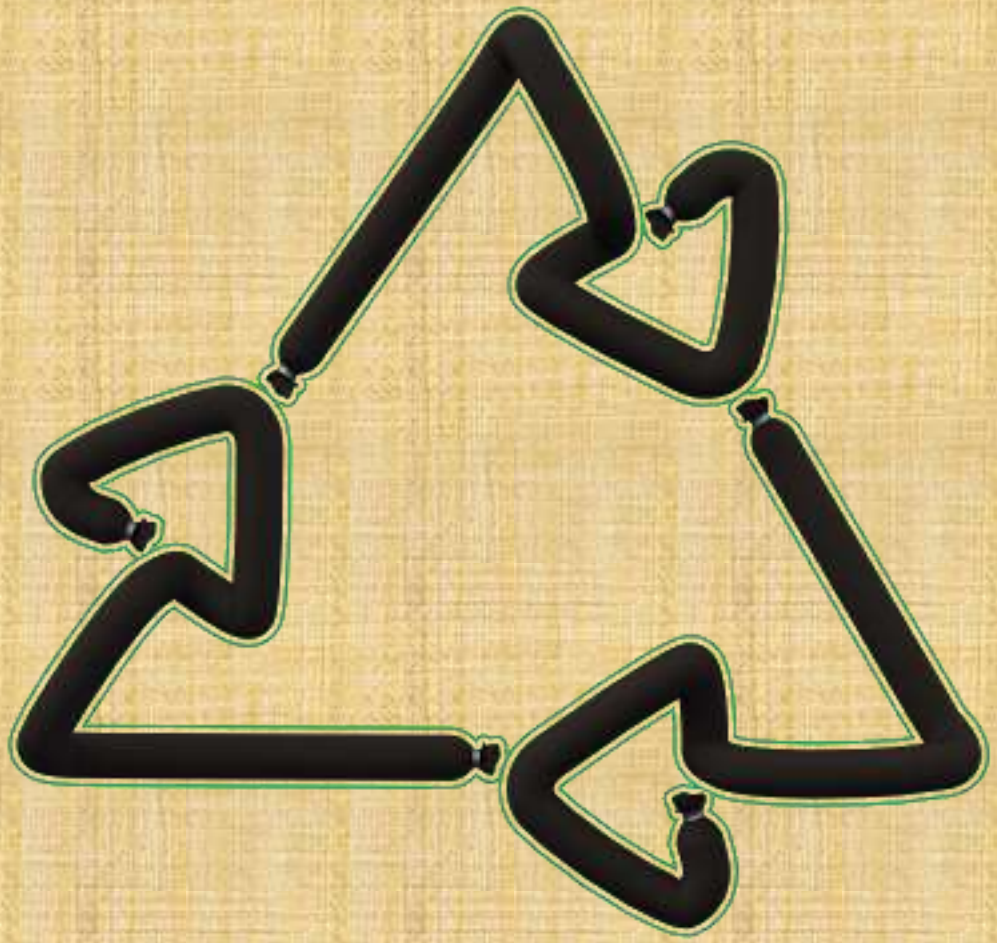
EASY INSTALLATION

1. ARRANGE SILTWORM PERPENDICULAR TO SHEETFLOW
2. ENSURE THAT THERE IS PROPER GROUND CONTACT
3. OVERLAP ENDS USING A 6” OVERLAP

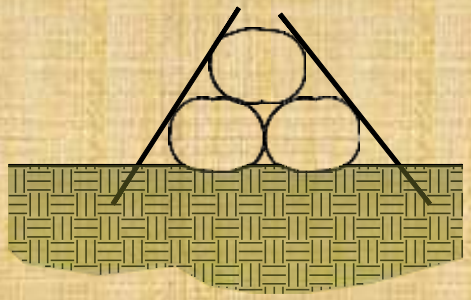
Easy Low-Cost Disposal

1. SIMPLY CUT NETTING
2. BACK DRAG SEDIMENT AND FILL MATERIAL INTO FINAL GRADE
3. DISPOSE OF SMALL AMOUNT OF NETTING

MANUFACTURER SPECIFICATIONS

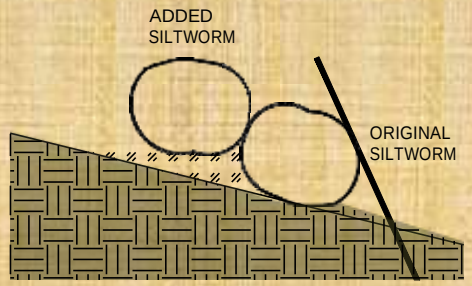


MAINTENANCE/PERIMETER DETAIL



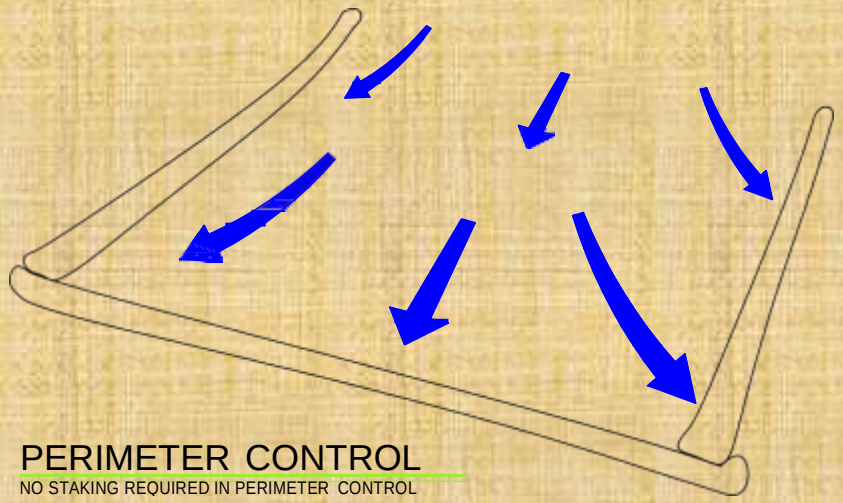
STACK DETAIL

ACHIEVE ADDITIONAL DEFENSE IN EXTREME CONDITIONS



MAINTENANCE DETAIL

ADD ADDITIONAL LINE OF DEFENSE WHEN SEDIMENTATION REACHES 50% OF THE HEIGHT OF THE SILTWORM

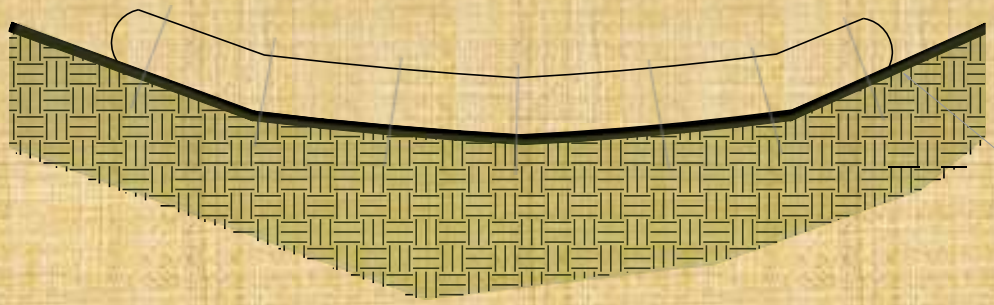


PERIMETER CONTROL

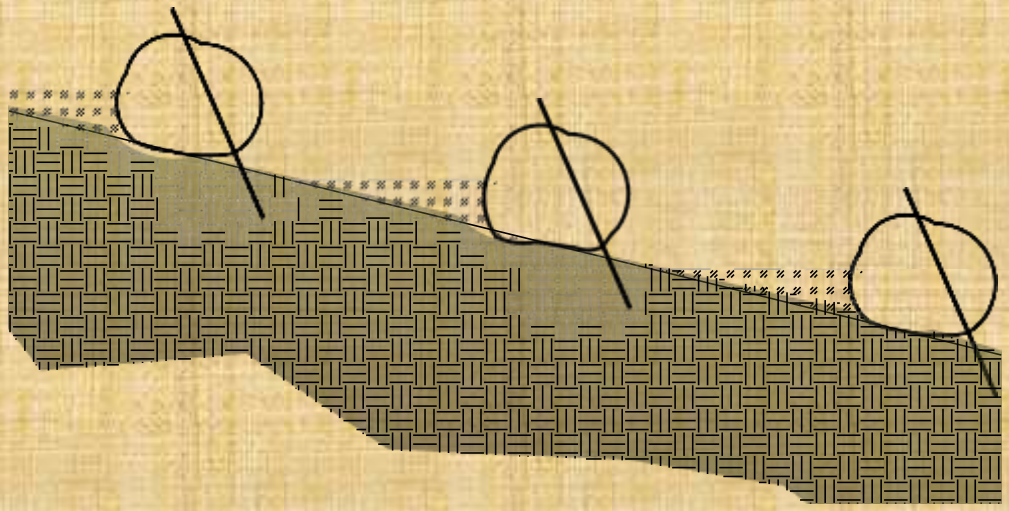
NO STAKING REQUIRED IN PERIMETER CONTROL APPLICATIONS IN WHICH GRADES DO NOT EXCEED 12%

DITCH CHECK/SLOPE INTERRUPTION

STAKE AT EACH END AND PLACE STAKES AT 4'-0" MAXIMUM



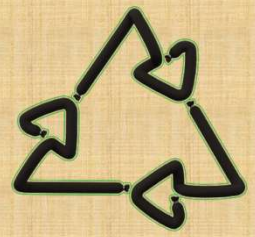
DITCH CHECK APPLICATION



SLOPE INTERRUPTION

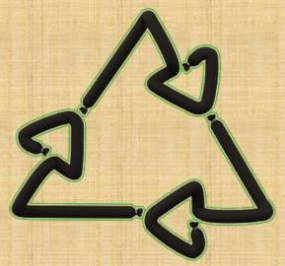
SITE PREPARATION

1. CONSIDER ALL DRAINAGE ASPECTS AT ORIGINAL SITE DISTURBANCE
2. ENSURE THAT SURFACE IS CONDUCIVE FOR INTIMATE GROUND CONTACT
3. REMOVE ANY HEAVY VEGETATION



MAINTENANCE

1. **50% RULE:** ADD ADDITIONAL LAYER OF DEFENCE
2. **OVERTOPPING:** CONSIDER DESIGN, ADD ADDITIONAL LAYER
3. **TORN:** USE SLEEVE REPAIR, OR CUT AT POINT OF TEAR AND TIE OFF



SHIPPING/PACKAGING

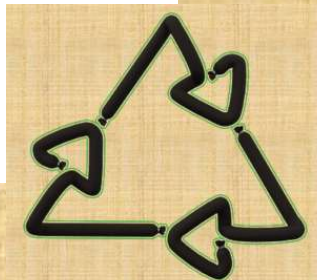
SAVE MONEY USING ROLLED FILTRATION

SILTWORM™

Silt Fence Comparison Tool

Directions: Fill in values for cells highlighted green only. Calculations will auto-populate once filled.

Estimated Lineal Footage Used	500		(Fill in these values)
	Silt fence	**Siltworm**	
Estimated Price Per Lineal Foot	$ 1.35	$ 2.00	(Fill in these values)
Initial Cost	$ 675.00	$ 1,000.00	
Estimated Number of Re-installs	0.5	0.1	(Fill in these values)
Estimated Price Per Reinstall (LF)	$ 1.35	$ 2.01	(Fill in these values)
Reinstall Cost	$ 337.50	$ 100.50	
Removal Cost Per Lineal Foot	$ 0.50	$ -	
Total Removal Cost	$ 250.00	$ -	
Dumpster Cost	$ 200.00	$ 10.00	(Fill in these values)
Total Cost	$ 1,462.50	$ -	
Total Net Value of Siltworm	$ 1,374.50		
Reuse Percentage	0%	50%	(Fill in these values)
Savings on Next Job	$ -	$ 500.00	



Why SILTWORM vs other rolled devices?

DIVERSION VS FILTRATION

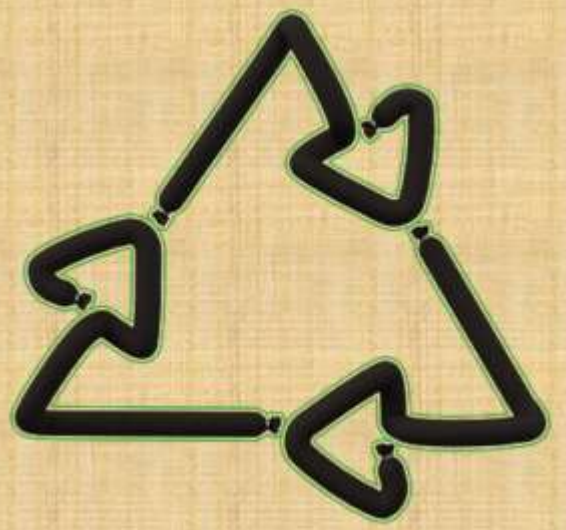
- Lower your maintenance
- Lower your frustration
- Increase your control effectiveness
- Increase your job-site savings

CONSISTENT

- Same fill material, same netting, and same quality specification
- Innovative Quality materials=superior performance
- We are leaders in the industry

ECO-FRIENLY

- Small amount of waste
- Manufactured using recycled materials



RECAP: THE MANY BENEFITS OF ROLLED FILTRATION

- **Eco-friendly** - 100% recycled filler material, reusable
- **More Effective** - Can be placed on hard surfaces,frozen ground
- **Versitile** - Approved for ditch check, slope interuption, perimeter control applications and inlet protection
- **Easy Installation** – No equipment needed, can be moved, shaped to fit site and put back in place
- **Cost Effecient** - Contractors save $$ using it
- **Less Labor** - Limited Trenching and Staking Requirements
- **Powerful Filter** - Separates additional jobsite contaminates

And The 3rd Party Testing Says:

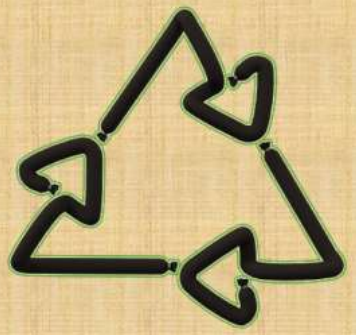
COMPETITION THORUGH MISINFORMATION

- TESTING:
- Straw Wattle: 70% Removal Efficiency
- Erosion Eel: 69% Removal Efficiency
- Silt Fence: 68-70% Removal Efficiency
- ”Off -Brand Sock: 66% Removal Efficiency
- Triangular Silt Dyke: 93% Removal Efficiency
- Specific Fill/SpecificNetting: 97% Removal Efficiency

Earn LEED Credits through USGBC

Rolled Filtration can contribute to the credit earning potential

- 1. Construction Activity Pollution Prevention Product
- 2. Is Manufactured Using Local/Regional Materials
- 3. Is Manufactured Using Recycled Materials



What Does the IDEM Say about Rolled Filter Technologies?

Page 234 Field Guide

SEDIMENT BARRIERS & FILTERS

Filter Tube/Filter Sock

*A **filter tube/filter sock** is a temporary barrier consisting of permeable material (i.e., aggregate, compost, excelsior, or straw, etc.) contained in a permeable geotextile fabric or non-biodegradable net matrix installed to intercept and treat sediment-laden runoff from small, unvegetated drainage areas.*

What Does the state of Indiana DOT Say about Rolled Filter Technologies?

Page 126 field manual

Filter Sock

Standard References

Standard Specification Reference: 205.06(b) Filter Berm
205.07 Maintenance

Standard Drawing Reference: E 205-TECD-02 as traversable check dam

Description

Filter Socks are versatile filter devices that can be used in a few different applications such as a filter berm, perimeter protection or traversable check dam. Filter socks are mesh tubes usually filled with organic material such as straw that are staked into the ground. They are designed to slow runoff water velocity, filter sediment and temporarily pond small amounts of water. If filter socks are used as traversable check dams, they should be used only in clear zones with adjacent active traffic lanes and low storm water velocities. Filter socks are a good choice for tree clearing areas where roots prevent trenching in of silt fence.

Installation

1. Traversable check dam

- Install three horizontal rows to form a pyramid and secure with stakes
- Install geotextile fabric below the socks and extend the fabric downstream to prevent scour.
- Shape with a lower center and sides tied into the slopes (like a smile ☺) when used within a ditch line.

2. Filter berm

- Install in sheet flow areas with small watersheds and low velocities.
- Secure into soil with wooden stakes.
- Can be used at the top of slopes to reduce runoff velocity and help vegetation establishment.

Inspection

- Inspect weekly and within 24 hours after a ½" or more rain event.
- Monitor sediment accumulation and remove once it reaches one-quarter of the height of the filter berm.
- Look for areas that have been damaged by storm water or equipment.

Maintenance

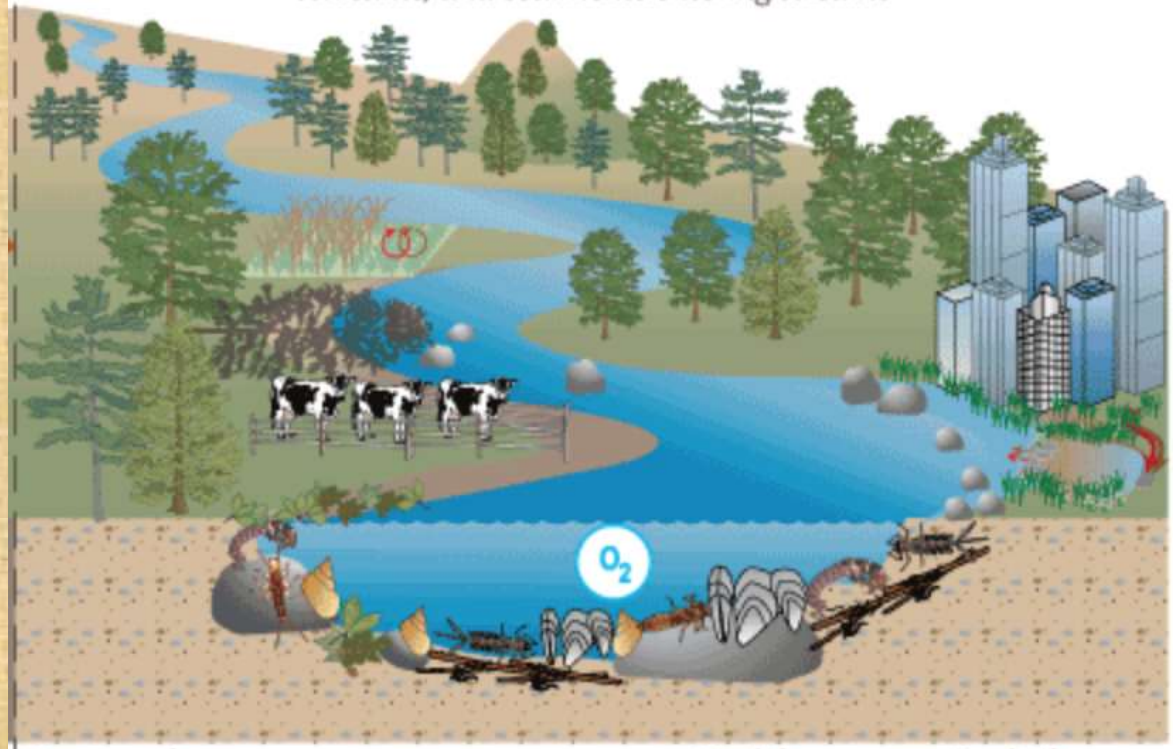
- Replace or resecure damaged filter socks.
- Replace with rock or a stronger measure if damage is severe or reoccurring.
- Remove accumulated sediment once it reaches one-quarter of the height of the filter berm.

CLEAN

WATER

Healthy Streams:

Well-managed land-based activities will reduce the amount of nutrients, toxicants, and sediments entering streams



Factors that protect streams:

Stormwater retention pond and riparian buffers

Cover crops / Best Management Practices

Fenced livestock

Shady streambanks

Healthy streams include:

Debris

Sufficient oxygen

Rocky stream bottom

Bottom-dwellers

Freshwater mussels

Caddisfly larvae

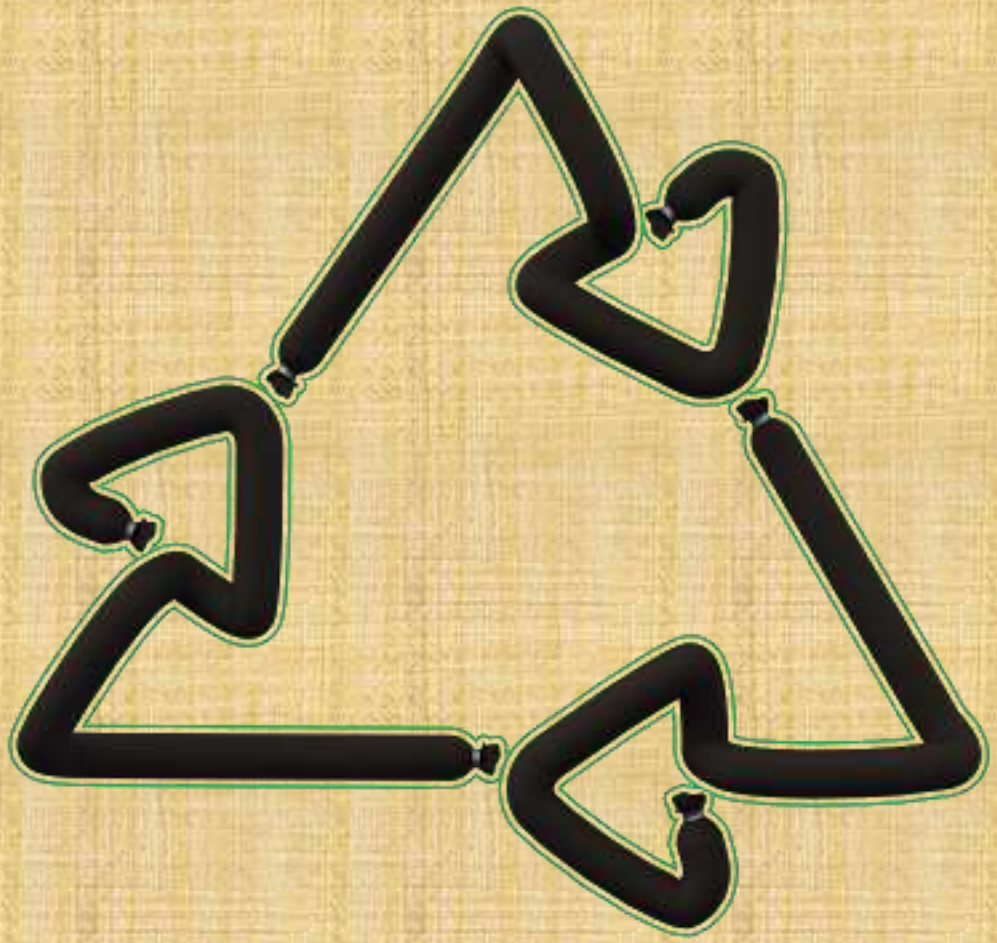
Mayfly larvae

Snails

Stonefly larvae

Dragonfly larvae

STORY TIME



Physics 101

The Dam Fails

SEDIMENT STARTS ITS TRAVEL

TO THE TRIBUTARY

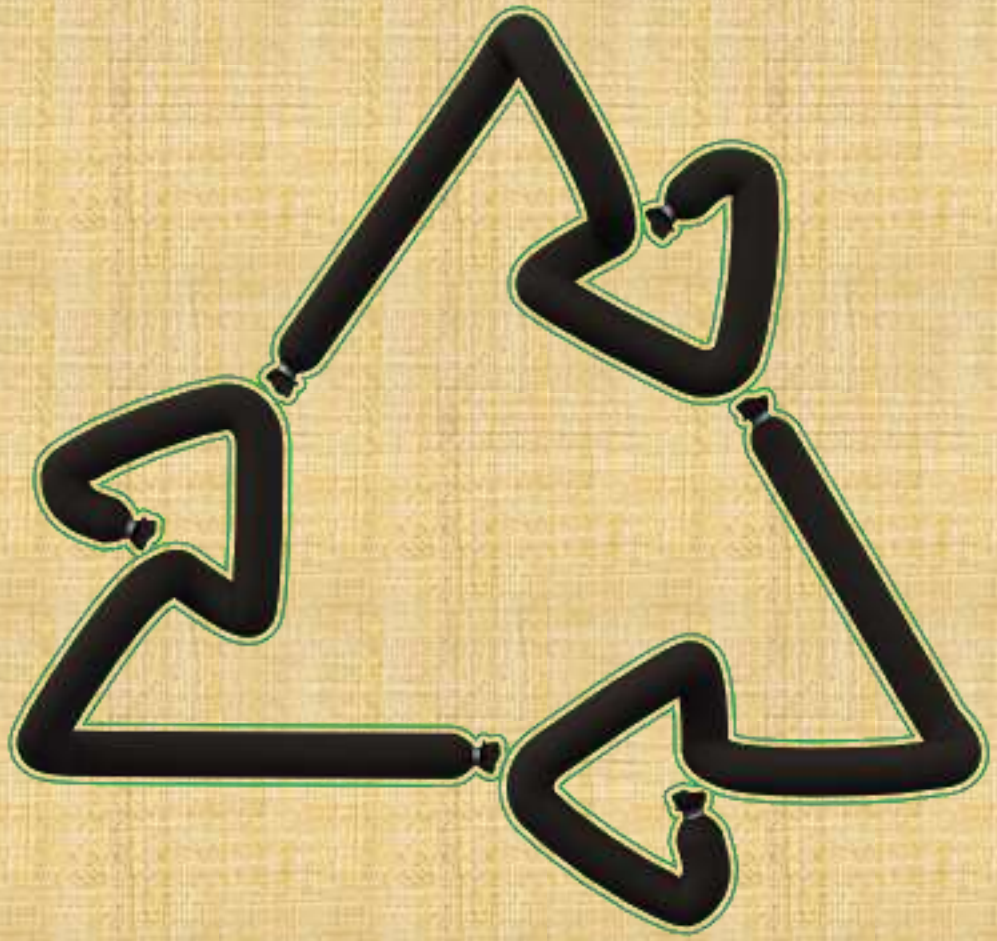
TO THE OUTLET

THROUGH THE STREAM

INTO THE LAKE

SAME STORM, DIFFERENT SITE

QUESTIONS/COMMENTS



Where Do We Get Rolled FILTER Technology?