

# Erosion and Sediment Control Lessons Learned

## The Century Team



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# Presentation Agenda



Pollution Prevention



Stabilization



Pumping & Dewatering



SWM Facilities

# Pollution Prevention

Any practice that reduces, eliminates, or prevents pollution at its source.



Less pollution means less hazards posed to public health and the environment.

# Pollution Prevention

## Requirements

- EPA – Federal Construction General Permit
- Delaware Construction General Permit
- DNREC E&S Handbook
- DeIDOT Section 903



## TYPES

- Uncured Concrete
- Construction Waste
- Detergents
- Paints (Enamel & Latex)
- Cleaning Solvents
- Pesticides
- Wood Scraps
- Fertilizers
- Petroleum Based Products

# Pollution Prevention – Concrete Washout

- DelDOT Spec 903.03.D & Standard Detail E-1



# Pollution Prevention – Concrete Washout



# Pollution Prevention – Concrete Washout



# Pollution Prevention – Concrete Washout



# Pollution Prevention – Dumpster



# Pollution Prevention – Dumpster



# Pollution Prevention – Storing Pollutants

DeIDOT Specification 903.03.E – Store all potential pollutants under cover.



# Pollution Prevention – Storing Pollutants



# Pollution Prevention

DeIDOT Specification 903.03.C – Secondary Containment required when within Waters.



# Stabilization

- Stabilization is the application of a product to protect disturbed ground from erosion until vegetation is established.
- Erosion is the main contributor to sediment discharges and E&S control failure.



# Stabilization

## Temporary vs. Permanent

Temporary Stabilization is required after 14 days of inactivity.



# Stabilization

## Temporary vs. Permanent

Permanent Stabilization is required after 7 days of reaching final grade.



# Stabilization

## Types of Stabilization

- Straw Mulch
- Hydraulically Applied Mulch
- Erosion Control Blanket Mulch
- Turf Reinforcement Matting
- Soil Stabilizers



# Stabilization – Straw Mulch

DelDOT Spec 908.03.D  
No bare ground visible



# Stabilization – Erosion Control Blanket



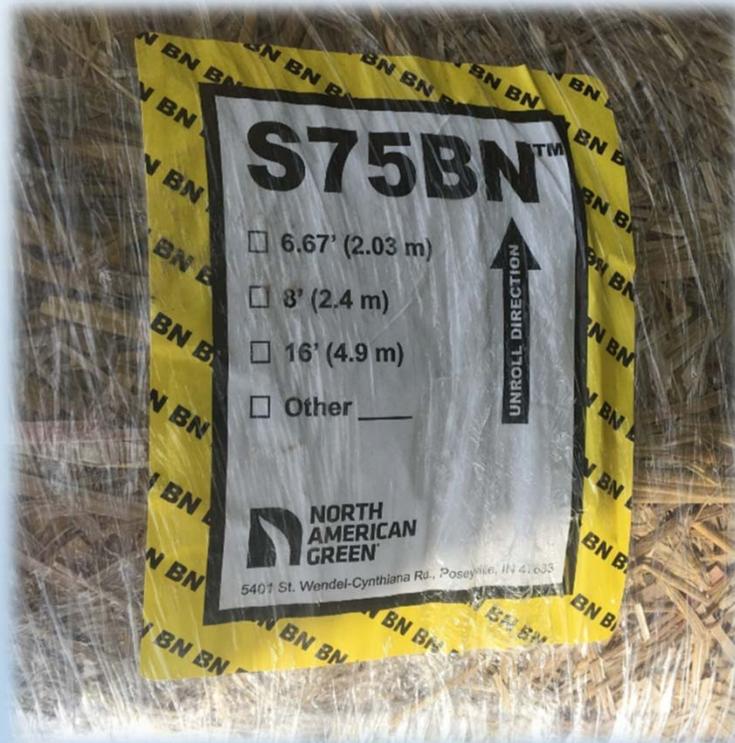
DeIDOT Spec 908.02.D & Approved Product List  
No plastic or photodegradable materials



# Stabilization – Erosion Control Blanket



When to use ECB from the Approved Product List?



RECP Type, DelDOT Bid Item Number	Approved Products	
	Manufacturer	Product Name
Erosion Control Blanket Item No. 908020	American Excelsior American Excelsior American Excelsior American Excelsior East Coast Erosion Blankets East Coast Erosion Blankets Enviroscape ErosionControlBlanket.com North American Green North American Green US Erosion Control Products US Erosion Control Products US Erosion Control Products Western Excelsior Western Excelsior Western Excelsior	AEC Premier Coconut FibreNet AEC Premier Straw / Coconut FibreNet AEC Premier Straw FibreNet Double Net Curlex III FibreNet ECSC-2B ECC-2B C4000BD C32BD C125BN SC150BN US 2SC NN US - 2S US - 2SC EXCEL CC-4 All Natural EXCEL CS-3 All Natural EXCEL S-2 All Natural
Turf Reinforcement Mat, Type 1 Item No. 908021	American Excelsior American Excelsior East Coast Erosion Blankets East Coast Erosion Blankets ErosionControlBlanket.com Greenstreak Western Excelsior  <u>Plus TRM Type 2 blankets</u>	Recyclex TTM Recyclex TRM-V ECP-2 10oz ECSC-3 P42 PEC-MAT EXCEL PP5-10
Turf Reinforcement Mat, Type 2 Item No. 908022	American Excelsior East Coast Erosion Blankets East Coast Erosion Blankets East Coast Erosion Blankets North American Green North American Green North American Green Propex Propex Propex Western Excelsior	Curlex Enforcer ECC-3 ECP-3 ECP-2 C350 P550 TRM SC250 Landlok 1051B Landlok 450 Pyramat EXCEL PP5-12

# Stabilization – Erosion Control Blanket



ECB in swale application  
to be installed per  
DelDOT Standard Detail  
E-12.

# Stabilization – Erosion Control Blanket



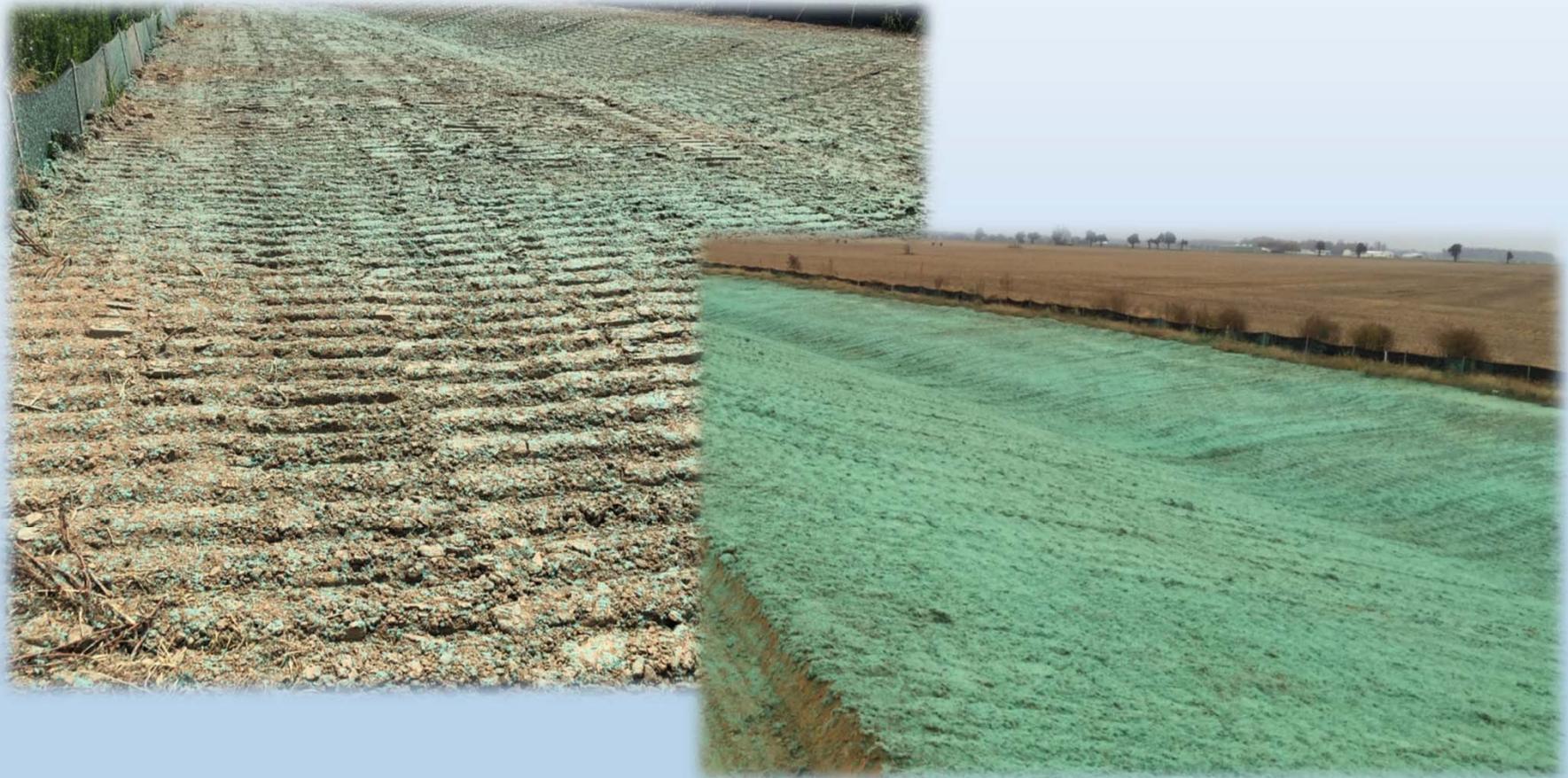
# Stabilization – Erosion Control Blanket



# Stabilization – Hydraulically Applied Mulch



DelDOT Spec. 908.02.D., No paper or paper blend mulches and applied per manufacturers recommendations.



# Pumping and Dewatering

Dewatering the work area involves pumping sediment laden surface or groundwater to a discharge location outside the site limits.



Without dewatering work required in wet areas can not be completed accurately and can result in sediment discharges directly to environmentally sensitive areas.

# Pumping and Dewatering

## Dewatering Components

- Sump Pit
- Portable Sediment Tank or Dewatering Bag
- Instantaneous Volume Meter
- Stabilized Outfall Location
- Well Points



# Pumping and Dewatering – Sump Pit



Constructed per DelDOT Standard Detail E-7 & Spec. 906.02.C



# Pumping and Dewatering – Sump Pit



# Pumping and Dewatering – Sump Pit



# Pumping and Dewatering – Stabilized Outfall



# Pumping and Dewatering – Stabilized Outfall



# Pumping and Dewatering – Stabilized Outfall



# Pumping and Dewatering – Stabilized Outfall



# SWM Facility Construction



- Multiple Types of SWM Facilities require the CCR to be present during construction.
- CCR must complete facility checklist
- Level of inspection varies depending on the facility type.
- Contractor schedules are very helpful to the CCR when planning for facility construction.
- Notify CCR at a minimum 48 hours in advance of construction starting (DelDOT Spec. 910.03)

**Delaware Department of Transportation  
Bioretention Facility Construction Checklist**

Contract No.: T200912002	Contract Name: Jamison Corner Road Relocated
Contractor: Mumford & Miller	DelDOT Project Mgr.:
CCR Name: Jacob Wideman	CCR No.: 20151021 074
BMP No.: 831	BMP Location (Road Crossroads): Jamison Corner Road

**Construction Dates & Time:**

DATE	TIME IN	TIME OUT	DATE	TIME IN	TIME OUT
*See daily BMP Observation logs for dates and times*					

**Delaware Department of Transportation  
Bioretention Facility Construction Checklist 2 of 3**

Contract No.: T200912002	Contract Name: Jamison Corner Road Relocated
BMP No.: 831	BMP Location: Jamison Corner Road
CCR Name: Jacob Wideman	CCR No.: 20151021 074

**Key**

- ✓ Item meets standard
- X Items not acceptable
- N/A Items not applicable
- See Comments

**I. Pre-Construction**

- ✓ A. Notification given.
- ✓ B. Upstream drainage flows. Very important.

**II. Excavation**

- ✓ A. Facility excavated.
- ✓ B. Infiltration Basins. (Note: Infiltration during the excavation.)
- ✓ C. Groundwater not saturated during the excavation.
- ✓ D. Bottom scarified.

**III. Structural Components**

- ✓ A. Discharge pipe installed from outlet structure to discharge point.  
Discharge Pipe diameter: 36"  
Discharge Pipe material: HDPE
- ✓ B. Outlet scour protection provided at discharge point.
- X C. Outlet Structure installed at elevation as per the approved plan.
- N/A D. Underdrain
- N/A E. Underdrain
- N/A F. Underdrain
- N/A G. Clean-out
- N/A H. Infiltration
- N/A I. 3" minimum
- N/A J. Geotextile

**IV. Grading**

- ✓ A. Grading as per approved plan.

**V. Bioretention Soil**

- ✓ A. Approved
- ✓ B. Approved
- ✓ C. Top-dress hardwood

**Delaware Department of Transportation  
Bioretention Facility Construction Checklist 3 of 3**

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**VI. Erosion and Sediment Control**

- ✓ A. Perimeter control installed around the edge of the facility and/or geotextile placed on top of the facility as per the approved plan. (Note: Neither should be removed until full stabilization of drainage area in the facility.)

**Comments (Date & Initial)**

- X III. C. The CCR could not verify that the Outlet Structure was installed at the proper elevation since the installation had taken place prior to the CCR being notified.

# SWM Facility Construction - Outfall



# SWM Facility Construction - Outfall



# SWM Facility Construction - Methods



# SWM Facility Construction - Methods



# SWM Facility Construction - Methods



# Conclusion



The CCR and ESL are here to help solve problems and maintain compliance per Federal, State, and DelDOT Regulations.

Working together will result in reaching goals of compliance.