Dewatering Tips & Tricks

Handling Sediment-loaded Water

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Dewatering

What type of fabric can be used to turn dirty water into clear water?

What is the most effective way to treat a lot of dirty water?

Can I sprinkle a polymer into the pond and get clear water?

Favorite questions asked by Scott Bordeau

Dewatering – things to consider

- What are you dewatering?
- Pit, trench, temporary activity, long term issue?
- What is the soil particle size?
- How often should you inspect the activity?
- Who is in charge of the pumping?

- Will you be using bags?
- Did you plan for a settling basin? Sed trap?
- Do you have extras on hand?
- Where will the discharge go?
- What if the discharge is turbid?
- Will the discharge enter a surface water?

Typical Scenarios

- Mass grading before sed ponds done
- Trenching, pipe installation
- Pond excavation
- Basement excavation

The discharge water will look like this, right?

Possible Outcomes

Ditch to Waterway

Sediment in Wooded Wetland

DEWATERING

Talk about it before project starts:

- Where will water be pumped from, where to?
- What's the plan for pre-treatment?

How many sites have you seen or worked on where you did not have dewatering activity?

Where will you discharge?

Most of our sites do not have a wide upland vegetated buffer to discharge our hoses

Dewatering Cannon:
Large Sites, Pipeline Trenches

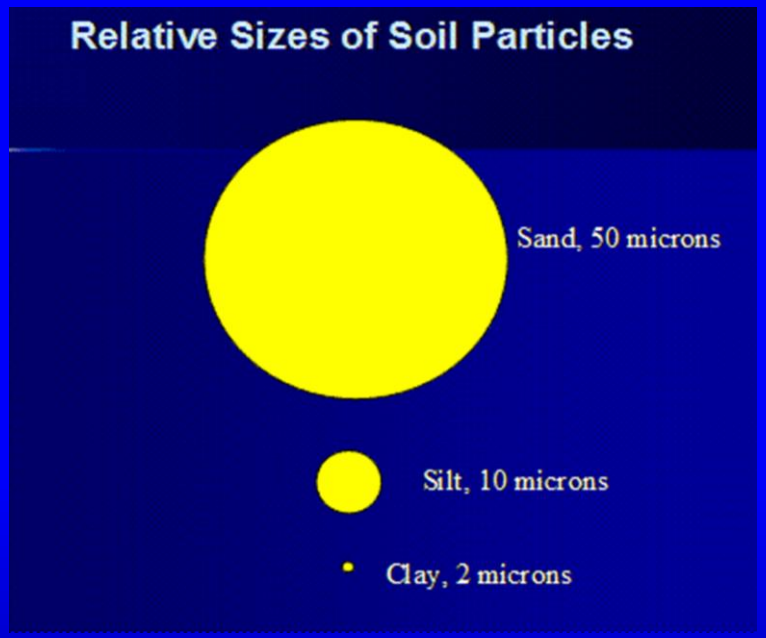
Know your discharge point…..

…..INSPECT YOUR DISCHARGE POINT

You conclude you need a dewatering bag or settling basin – where will it go?

Anticipate what you might need

Soil Particle Size



WDNR Requirement:

Dewatering bags MUST be selected based on:

- predominant soil texture
- pumping / flow rates
- volume
- device effectiveness

Sandy Soils	Silty Soils	Clay Soils
Larger particles	Smaller	Smallest, cohesive
Can take less time to settle out and filter through sediment control devices	Clings, can seal & coat, making it hard to infiltrate (especially with clay content)	Difficult to settle out; can plug up filtering devices, may need frequent cleanout
	Can be difficult to settle or filter	Can be easier to settle out using polymers due to polarity of clay particles


COKE EXPRESS
COKE EXPRESS

NO. NO. Please NO.

How fast can you fill a bag?

Polymer Use with Bags

Polymers - enhance the efficiency of geotextile bags

MUST meet the criteria in WDNR Conservation Practice Standard 1051, Sediment Control Water Application of Polymers

Get certification from supplier to show it meets 1051

Flocculation

The process of adding a flocculent, coagulant or polymer to dirty water or wastewater

The flocculent then binds with the particles (clumps) to form flocculent (floc)

Separating solids from liquid is the key

Four steps are needed for performance

1. Proper selection
2. Proper introduction
3. Proper mixing of polymer (agitation)
4. Proper collection of sediment

Alternatives:

Use a baffled tank or container. Can be re-used on next site.

Can help settle sediment.

Can be used in conjunction with floc log type devices

Trailer Size	Pump Size	Capacity	Mix Time
20' ft	Up to (2) 3" pumps	600 gal/minute	2 minute mix time
40' ft	Up to 6" pump	600 gal/minute	5-6 minute mix time (Heavy sediment in water)
32' ft	Up to (2) 3" pumps	600 gal/minute	3-4 minute mix time
53' ft	6" pump	600 gal/minute	Longer mix time (Heavy sediment)

Floc Log, Floc Soc, etc.

Work with supplier; do tailgate test; keep records

WDNR Std 1051 for Water Application

- Best when used with other BMP's or in a "Treatment Train"
- Can help with handling suspended Silt and Clay

- ✓ Mixing & agitation time
- ✓ Pit or device to capture FLOC
- ✓ Match the flow with log capacity

QUESTIONS?

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