Phase II Stormwater Program

Fall 2013

Erosion Control vs. Sediment Control—Understanding the Difference

What are Erosion and Sediment Controls? Why are they necessary? Can you get away with just using one method or are both needed? By understanding the difference between erosion control and sediment control it will enable you to see the importance of each control measure. These terms are defined as follows:

Erosion—This is the detachment of soil particles from the ground surface by running water, wind, ice or other geological agents. Erosion control methods protect the soil surface by stabilizing the soil.

Sediment—These are the particles of soils that have been detached. Erosion is the primary source of sediment. Sediment control methods trap the soil particles after they have dislodged and prevent or minimize their migration off-site.

This site was heavily grassed and silt fence was maintained. This picture was taken after 13.6 inches of rain in February 2013. There was no erosion onsite, so no sedimentation occurred. There were no deficiencies found at this site which covers 10 acres.

As these definitions indicate, if the erosion process is controlled effectively, the need for sediment control is much less. In most cases, it is not possible to have one control method without the other, because both controls are dependant on each other. Erosion Control practices help prevent soils from becoming detached from the soil structure. Sediment Controls aid in preventing the possibility of sediment bypass and subsequent transport of sediment to downstream waterways, adjoining properties and nearby roads.

Erosion Control Methods

It is best to address this issue at the planning stage. First minimize soil disturbance by controlling erosion (minimizing disturbed area, seeding, mulching, matting, etc.) Next, control the amount of soil runoff and stabilize the exposed soil. Erosion control should be the primary focus, as sediment controls are typically only 50% effective.

With this in mind, there are two types of erosion control methods. Stabilization measures—cover or maintain existing cover over soil. These measures can be vegetative in nature such as planting shrubs, trees, or grass and non-vegetative such as installing geotextiles, riprap or gabions. The other erosion control method is Structural Practices— these involving devices to divert, store, or limit runoff.

This site totals 24 acres. It had been grassed, but not maintained. This photo was taken after 13.6 inches of rain in February 2013. There were many areas of erosion and sedimentation. The silt fence failed and allowed sediment to enter the street. Numerous deficiencies were found at this site.

Sediment Control Methods

Sediment control methods are part of structural control practices that focus on channeling runoff to either trap the sediment or filter the sediment, limiting the discharge of pollution from the site. The following is a partial list of practices that can be used.

1. Earth Dike
2. Silt fence
3. Sediment trap
4. Sediment basin

The easiest, cheapest, and most effective of all the controls is **Grassing**. Establishing a stand of grass is the most effective way to stabilize an area. Temporary grass seed is used in areas where more construction will be done in the near future, permanent grass seed varieties should be used when construction is finished or when there will be no construction for a 6 month or more time frame.

The next control that should be utilized is maintenance. Controls require constant maintenance to be effective. For example, silt fence is installed, but never maintained. Within a few months, the silt fence has failed. It may have torn loose from the posts, been knocked down, water may have washed under it, or it may have become full of sediment and no longer be holding it back. If the silt fence is checked on a regular basis, problems can be seen and corrected as they occur. Then the silt fence will be effective and do its job.

More information on Erosion and Sediment Controls is available from:

www.epa.gov
www.adem.alabama.gov
City of Phenix City Engineering Department - 334-448-2760
http://swcc.alabama.gov/pages/erosion_control.aspx?sm=b_b