

WRAPPED IN PLASTIC

IS IT A GOOD IDEA?

The Monthly Dirt
a monthly newsletter on the California Construction General Permit
by WGR Southwest, Inc.

A **quandary** ... have you been in one? Oxford Dictionary defines it as “a state of perplexity or uncertainty over what to do in a difficult situation.” Picture this ... you are the project manager for a commercial construction site that is very active. Grading just recently finished, utilities are going in, the slab is being poured next week, and masonry materials are being delivered later today. And on top of all that, the first rain event of the year is expected in two days. The SWPPP calls for hydraulic mulch and for a first lift of paving to be performed early during the project—but you are not ready for either of those activities. So what do you do for erosion control? The QSD mentions that one option is to place plastic sheeting down on top of all of the areas of soil disturbance. Sounds simple enough! But then you remember from your QSP / QSD class that the Construction General Permit states the “General Permit prohibits the discharge of any debris from construction sites. Plastic and other trash materials can cause negative impacts to receiving water beneficial uses. The State Water Board encourages the use of more environmentally safe, biodegradable materials on construction sites to minimize the potential risk to water quality.” This edition of **The Monthly Dirt** addresses the plastic quandary by helping you to evaluate other options and encouraging your company to set policy for BMPs.

WHAT'S THE PROBLEM WITH PLASTIC?

The problem with plastic is that it is an easy “go-to” or “quick fix” - but it has long term repercussions. Sure, you can get that plastic sheeting down over the site in a few hours. But after a few days or weeks, it will be placed in the dumpster and hauled off site to a landfill. Statistics about plastic use, disposal, and its fate are alarming.

THE QUANDARY – Compliance with the Construction General Permit and controlling erosion are usually our first thoughts when it comes to BMP selection. We will typically go with what works—and plastic definitely works extremely well in some situations. It is quick to install and economical. Not only can it keep rain drops from coming into contact with exposed soil particles, but it can also be used to convey clean water across the site, and keep underlying soils from becoming saturated with water. There is great environmental benefit to discharging clean water, controlling erosion, and avoiding the over-excavation of saturated soil. However, the quandary develops with realizing there are other alternatives to using plastic, but they are typically not as cost effective and easy to implement. Ignoring or dismissing plastic pollution and landfill limitations lessens the quandary, but ultimately is a short-sighted mentality that will eventually come back to hurt us and our children. (Click [here](#) to read an article on microplastics that we ingest each year.)

Environmental Facts about Plastic¹

- About 8.3 billion tons of plastic has been produced since the 1950s – the weight of roughly a billion elephants or 47 million blue whales.
- Only about 9% of this plastic has been recycled, 12% has been burned and the remaining 79% has ended up in landfills or the environment.
- Up to 12.7 million tons of plastic enters the oceans every year.
- The equivalent of a truckload of plastic enters the oceans every minute.
- There are five trillion pieces of plastic in our oceans – enough to circle the Earth over 400 times.

¹ Greenpeace, <https://www.greenpeace.org/usa/key-facts-about-plastic-pollution/>

PLASTIC ALTERNATIVES – There are erosion control practices and products that can be used instead of plastic sheeting. For the most part, these alternatives will require planning and possibly additional budgeting.

Scheduling: This is EC-1, or BMP #1, in the CASQA and Caltrans storm water handbooks—simply schedule the project during the dry season when erosion and sedimentation is less of a concern. Ironically, though this is arguably the cheapest BMP to implement, it is a BMP that most project managers choose to ignore. (Of course, if the schedule happens to work out so grading is performed during the dry season, it's easy to take credit for good planning.) Strategic scheduling is a great alternative to wrapping a site in plastic, and should become a greater consideration when it comes to erosion control and good site management.

Hydraulic Mulch: This is EC-3 in the CASQA manual and SS-3 in the Caltrans handbook. Hydraulic mulch, bonded fiber matrix, or other spray-on soil binders are extremely effective in allowing a soil-disturbed site to shed clean water and prevent erosion. However, many project managers have only budgeted to apply this soil cover at the end of the project and are unwilling to do so on soils that will be disturbed again.

Erosion Control Mats and Geotextiles: In some situations, mats or geotextiles can work quite effectively. They tend to perform better in sandy soils or soils that have higher infiltration rates. It is

important to have adequate time to prepare the subsurface soil and install them correctly per the manufacturer's recommendations. If the underlying soil does not allow for uniform contact with the erosion control mat / geotextile, significant erosion can occur under the blanket.

Project Sequencing: Similar to "scheduling" is the proper sequencing of construction activities to avoid having large areas of exposed soil when the rains arrive. We often suggest the paving (or at least a first lift of paving) be installed early on at commercial or subdivision projects. A huge benefit of doing this is to avoid paying for temporary erosion control measures. If the parking area and roadways can be paved before the rains come, it will control erosion and give a stable and clean surface to work on. But this takes planning and a willingness to do things differently than what has been done in the past.



BMP SELECTION POLICY – According to CalRecycle's 2014 Disposal Facility-Based Characterization of Solid Waste in California, construction and demolition (C&D) materials are estimated to account for 21.7% to 25.5% of California's waste disposal. Ten to twelve percent of these wastes contain plastics. The CalGreen Code requires new residential and non-residential projects to recycle or salvage a minimum of 50% of the C&D materials (diverting them from landfills). Selecting to cover large areas of exposed soil with plastic sheeting increases the project's C&D waste. Although plastic is cheap and easy to install, builders may want to reconsider its use and select one or more of the alternative methods. Using alternative soil covers, will not only reduce the project's C&D waste, but will help meet the CalGreen Code, local ordinances, and qualify the project for LEED points. (By the way, LEED points can be more valuable than the cost difference between plastic sheeting and hydraulic mulch.) But this will take a commitment from developers and their contractors. A good way to communicate this commitment to those involved in the BMP selection and implementation is to develop a **BMP policy** that specifies acceptable erosion and sediment control practices. This policy should be shared with QSDs who prepare the SWPPP, QSPs that oversee the implementation of the SWPPP, BMP installers, and key contractor and subcontractor staff.

IN SUMMARY – Just to be clear, **The Monthly Dirt** is not advocating that plastic sheeting be removed from our BMP tool box or outlawed by the State Water Board. It will always play an important role in erosion and sediment control - and sometimes it is the best BMP. However, before resorting to plastic sheeting, more ecological friendly erosion control measures should be considered. Hopefully, this is done when the SWPPP is being prepared by the QSD and when the project team is reviewing the SWPPP at the start of the project. **MD**

BMP Policy Ideas

Does your company leave the BMP selection completely up to the QSD or civil engineer, or do you have a say in what BMPs are used and not used? Is the contractor allowed to select whatever BMP works for them or their budget? It may be a good idea to draft a BMP policy that can be provided to those selecting, specifying, and purchasing BMP products. Consider including the following guidance:

- Prohibitions against products containing monofilament
- Hydraulic mulch and hydroseed specifications
- Acceptable concrete waste management systems
- Acceptable drain inlet protection devices
- Track out control specifications
- When and how to install paving during the project
- Spill response measures and notifications
- When & where compost socks, fiber rolls, silt fence, and curb cutback should be used
- When plastic sheeting may be used

2020 Training Events

A great New Year's resolution is to get more storm water training. To help you towards that goal, we have resolved to bring you a class each month.

February 20: Storm Water Sampling School
Click [here](#) to register.

March 19: Storm Water Treatment School

April 28—30: QSP/QSD Class. [Registration](#)

May 25—31: PDU Week

June 4: BMP Roundup

July 28—30: QSP/QSD Class

August 14: Kayak Tour of the Lower Mokelumne River Watershed

Sept. 21—25: Storm Water Awareness Week

October 27—29: QSP/QSD Class

November 12: BMP Roundup

December 10: Storm Water Sampling School

An Inspection of a Plastic Covered Slope

Check out the below video of an inspection of a plastic covered slope to see what they did right and what needs correction.



Video credit: <http://www.sheetflow.com/>

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Please contact us if you have any questions ...

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