



The Monthly Dirt
A monthly newsletter on the California
Construction General Permit

the PLASTICS PROBLEM

Simply trading one pollutant for another?

Picture this ... you're the project manager for a commercial construction site that is very active. Grading 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, rain 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 CGP 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 plastics problem by helping you to evaluate other options and encouraging your company to establish a policy for BMPs.

SO 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.

Environmental Facts about Plastic

- 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 our oceans every year.
- The equivalent of a truckload of plastic enters the ocean every minute.
- There are five trillion pieces of plastic in our oceans – enough to circle the Earth over 400 times.¹



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 in 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.)

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—all you have to do is schedule the project during the dry season when erosion and sedimentation is less of a concern. Easy, right? Ironically, although 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. However, strategic scheduling is a great alternative to wrapping a site in plastic and should be 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 a 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 toolbox 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 ecologically 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.

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

<https://www.greenpeace.org/usa/key-factsabout-plastic-pollution/>

Please contact us if you have any questions ...

The Monthly Dirt

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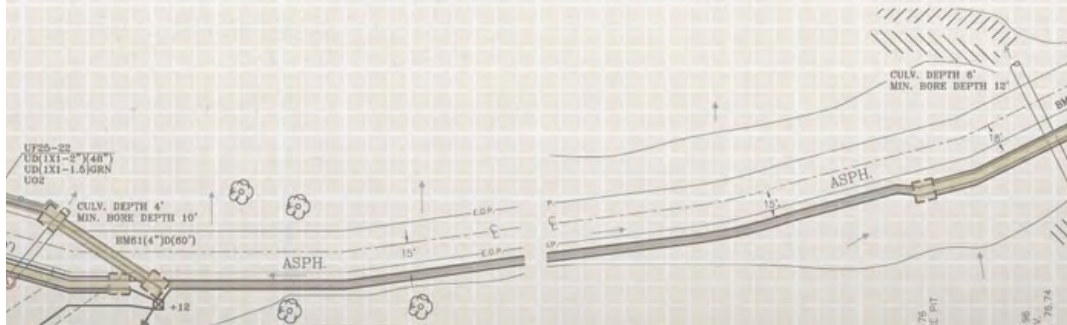
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BMP OUTLET

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