



# Frog Environmental BMP Case Study

## Concrete Company in Southern California

This case study features a concrete manufacturing facility in southern California. The site is approximately 2 acres and is 25% impervious.

### Overview of Pollutant Challenges

- High Total Suspended Solids (TSS) and high Iron (Fe) were problems for this facility due to concrete dust.
- Industrial material stockpiles were causing high TSS.
- Runoff needed to be minimized to decrease pollutants.
- Water flow needed to be slowed to promote water retention to aid settling of solids.
- Industrial materials needed to be covered to avoid exposure.
- Discharge needed to be removed at one of the outfalls.
- Perimeter was eroding and discharging into a creek.
- Run-on from neighboring businesses was causing problems.

### BMP Recommendations Implemented

- Drive-through gravel-lined basins excavated in key areas of storm water flow to promote water retention and decrease water velocity, including broadcast flocculant in basins, upstream of basins and across site in unpaved areas to facilitate the clumping of fine solids susceptible to suspension.
- Straw wattles are deployed in front of material stockpiles prior to rain events to filter solids and minimize the runoff of aggregate materials which have been identified as a source for TSS and Fe.
- Industrial wattles deployed at outfalls.
- Tarps are deployed over material stockpiles prior to rain to minimize the exposure of storm water to aggregate materials which have been identified as a source for TSS and Fe.
- Discharge has been eliminated at Outfall 2.
- A berm is installed along the north perimeter to prevent erosion and eliminate direct discharge into the water body along this point.
- Run-on from neighboring businesses eliminated via perimeter re-grading.

This facility implemented suggested BMPs immediately, resulting in significant sample improvements:

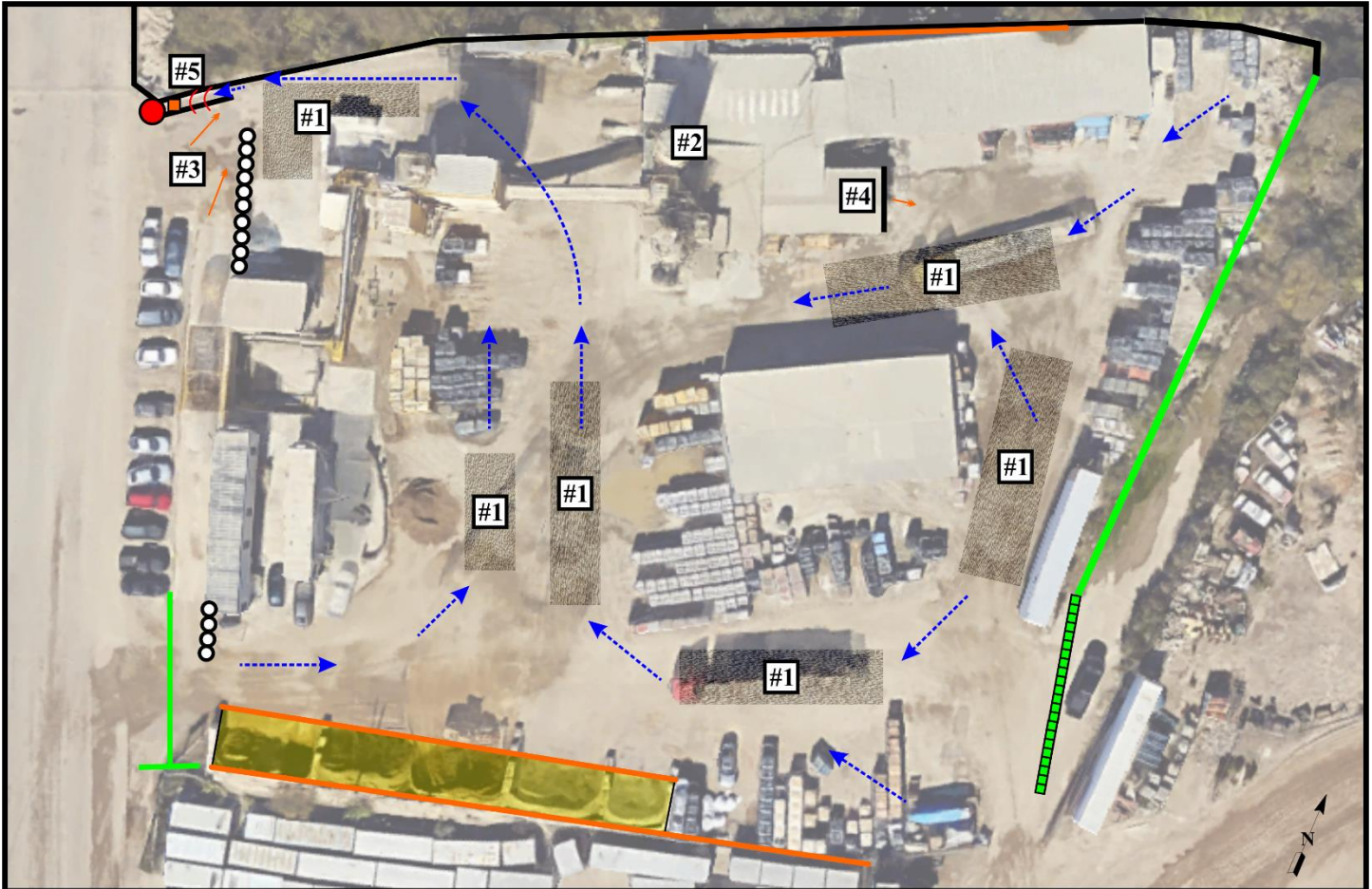
### **Storm Water Sample Results:**

#### Percentage Reduction After Recommended BMP Implementation

	TSS	Fe
<b>California Industrial General Permit NAL Limits</b>	<b>100</b>	<b>1</b>
<b>Sample Results 2012-2014</b>	<b>2,220</b>	<b>223.35</b>
<b>Sample Results 2015-2016</b>	<b>74</b>	<b>2.68</b>
<b>Percentage Reduction</b>	<b>97%</b>	<b>99%</b>



## Site Diagram Indicating Implemented BMPs



- Gravel-Lined Basin	- Tarped Prior to Rain	- Industrial Wattle	- Eco-Block	<b>#1:</b> Disperse flocculent in basins
- Re-grading	- Straw Wattle(s)	- Hay Bale	- Sample Point (#7)	<b>#2:</b> Implement regular vacuuming schedule
- Earthen Berm	- Concrete Berm	- Sandbag	- Storm Water Flow	<b>#3:</b> Re-grade driveway
				<b>#4:</b> Re-direct water from production area
				<b>#5:</b> Deploy wattles and hay bale

### Additional BMP Recommendations

- Vacuum areas around batch operations and aggregate unloading areas to minimize buildup.
- Regularly inspect integrity of bunkers, transfer equipment, and support equipment and repair as necessary.
- Regularly inspect and dispose of products no longer usable in designated waste dumpsters and keep lids closed/covered to prevent dispersal by wind or rain.
- Remove packaged finished products from exposure prior to rain events.

BMPs can play a central role in reducing exceedances and cleaning up pollutants on industrial sites. To receive a complimentary BMP Evaluation of your industrial facility contact us at 310-241-0866.