

# SOP: Treating Surface Stains Caused by Fuel Leaks, Drips & Non-Reportable Fuel Spills<sup>®</sup>



**Best Management Practices (BMP):** This SOP will ensure that BMP are implemented when treating small volumes of hydrocarbon waste material.

## Specifications for this SOP:

- The contamination is petroleum hydrocarbon based (synthetic oil will not bio-remediate)
- The source of the petroleum hydrocarbon contamination is from:
  1. Non-reportable spills to land including: Class 3 *Spills* less than (<)100L / Leaks / Drips / Hydrocarbon Stains
  2. On-site facilities including: Wash-Pad Sumps / Oil-Water Separator Sumps / Sediment & Storm Drain Sumps / Shop Sweepings
- On-going treatment is a long-term maintenance plan to reduce site contamination from increased concentrations of petroleum hydrocarbons;
- Criteria for identifying contamination follow these general guidelines:
  1. The depth of contamination does not exceed 0.5m below surface grade
  2. The surface staining is less than 3m in diameter
  3. The volume of contaminated media is less than (<) 5m<sup>3</sup>

### *In-situ* Treatment (see Table 1)

The visible suspect/contaminated material will not be excavated or removed. All treatment will be performed within the boundaries of the stained/ contaminated area.

### Spill Assessment:

- Contain and remove any free product:
  - Use petroleum absorbent pads or equivalent absorption product(s) to remove free product prior to treatment

### Environmental Assessment:

- Identify the characteristics of the contaminated media:
  - Clay, Silt and Mud mixtures
  - Sand and Gravel mixtures
  - Pebbles and Cobble mixtures
  - Gravel and mixed fragments
  - Fibric, Silt and Sand mixture
  - Humic, Silt and Sand mixture

### Bioremediation *in-situ* Treatment:

- Add treatment product to contaminated area (see Table 1)
  - Dry or liquid product, depending on the media
    - Dry product: 1 bag/ 1m<sup>3</sup> of contaminated media
    - Liquid product: 1L concentrate to 50L water or as prescribed
- Mix treatment product with contaminated media
  - Use excavator, grader or equivalent to ensure a good mix
  - On hard surfaces (i.e. asphalt or cement pads) spread product to absorb, sweep and remove
- Assess the treated area:
  - Check for petroleum hydrocarbon odors & visible staining
- Repeat *in-situ* treatment if staining or odors persist

### *Ex-situ* Treatment (see Table 1)

- Stockpile contaminated media in a mini-biocell for treatment;
  - A small cell lined with 20mil poly and 1m soil cover, a cement pad or equivalent
- Mix treatment product with contaminated media
  - Dry product: 1 bag/ 1m<sup>3</sup> of contaminated media (see Table 1);
  - Use excavator or equivalent to ensure a good mix
  - Aerate with excavator every two weeks
  - Leave uncovered if no precipitation is in the forecast
- Assess the treated area:
  - Check for petroleum hydrocarbon odors & visible staining
- Repeat treatment within *biocell* if petroleum hydrocarbon odors or staining persist

### Disposal Options:

- Landfill intermediate cover and/or final cover material (Check with *Permit* requirements)
- On-site restoration (no *off-site* media relocation permitted):
  - Construct berms, ditches & use to backfill around the site
  - On-site road surface improvements

Table 1. Remedial Options for Media Characteristics.

Remedial Options for Media Characteristics	<i>In-situ</i> Bioremediation Dry Product <sup>1</sup>	<i>In-situ</i> Bioremediation Liquid Product <sup>2</sup>	<i>Ex-situ</i> Bioremediation Cell Dry-Product
Clay/ Silt/ Mud	YES		YES
Sand/ Gravel	YES		YES
Pebbles/ Cobble		YES	YES
Gravel/ Mixed Fragments		YES	YES
Fibric/ Silt/ Sand	YES		YES
Humic/ Silt/ Sand	YES		YES
Cement Pad/ Asphalt Road	YES	YES	
Large Rocks & Boulders		YES	

<sup>1</sup>Oil Gator<sup>®</sup> or equivalent & <sup>2</sup>Microblaze<sup>®</sup> or equivalent

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