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OIL SPILL EATER II
February 12, 2001
TESTING LIGHT-END HYDROCARBONS ON WATER

Bioremediation Test Procedure for:
Diesel Fuel, Jet Fuel, Gasoline, etc.

Materials Needed:

1. 3 liters of natural, fresh or ocean water.
2. OSE II
3. 2 liter wide-mouth beaker.
4. Small aquarium air bubbler.
5. Light-end hydrocarbons.
6. Hand spray aspirator (32 ounces)

Procedure:

1. Make a solution containing 2 ounces of OSE II in 128 ounces (one gallon) of natural, fresh or ocean water. This becomes your OSE II solution.
2. Put 1 liter of natural, fresh, or ocean water in the 2 liter wide-mouth beaker.
3. Add 100 ml of light-end hydrocarbons to the water.
4. Remove 100 ml of the oil and water solution from the beaker. Test for initial contamination level.
5. Since the spill quantity of light hydrocarbons is known (100 ml), apply 100 ml of the OSE II solution to the beaker using a hand sprayer. Spray the outer edges first, working your way to the middle of the light end hydrocarbons. This application will provide 1 part OSE II to 100 parts water to 100 parts light-end hydrocarbons on water which is recommended in the OSE II literature.
6. Turn on aerator (bubbler).
7. At time intervals of initial 0 day, 3 days, 7 days and 15 days after application of OSE II, remove 100 ml samples of test water for analysis. The remaining water can be sampled at any additional time, should 15 days prove inadequate for complete degradation of hydrocarbons.
8. Perform EPA Tests 8015 and 8020 to determine degradation.

SRP/AJL


By: Steven R. Pedigo
Chairman



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OIL SPILL EATER II
February 14 , 2001
TESTING - HEAVY-END HYDROCARBONS ON WATER

Bioremediation Test Procedures for:
Crude Oil, Hydraulic Fluid, Motor Oil, Radiator Fluid,
Chlorinated Hydrocarbons, Etc.

Materials Needed:

1. 3 liters of natural, fresh or ocean water.
2. One half pint of OSE II Concentrate.
3. One 2 liter wide-mouth beaker.
4. Small Aquarium (fish tank) with Bubbler for aeration.
5. Heavy- end hydrocarbons.
6. Hand spray aspirator (32 ounces).

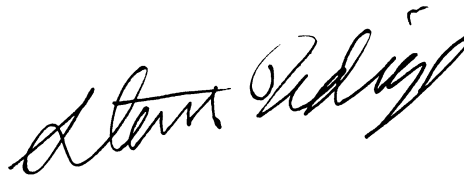
Procedure:

1. Make a solution containing 3 ounces of OSE II in 128 ounces (one gallon) natural, fresh, or ocean water. This becomes your OSE II Solution.
2. Put 1 liter of natural, fresh or ocean water in the 2 liter, wide mouth beaker.
3. Add 100 ml of the heavy end- hydrocarbon to be tested to the water.
4. Remove 100 ml of the oil and water solution from the beaker. Test for initial contamination level.
5. Since the spill quantity of heavy- end hydrocarbons is known (100 ml), apply 100 ml of the OSE II mixed solution to the beaker using a hand sprayer. Spray the outer edges, first working your way to the middle of the heavy- end hydrocarbons. This application will provide 2 parts OSE II to 100 parts water to 100 parts heavy-end hydrocarbon on water. This is recommended in our OSE II literature.
6. Turn on Bubbler Aerator.
7. At time intervals of (0 day initial) day 7, day 15, and day 30, (after application), remove 10 ml sample of water for analysis. The remaining water can be sampled at any additional time should 30 days prove inadequate for complete degradation of hydrocarbons.

Testing- Heavy-End hydrocarbons on Water
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NOTE: If the hydrocarbons are aged significantly, then sampling events will be changed and extended.

8. Perform EPA Test 8100 or 8030 to determine degradation.

A handwritten signature in black ink, appearing to read "Steven R. Pedigo". The signature is written in a cursive style with a large, sweeping initial "S".

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OIL SPILL EATER II
February 12, 2001
LIGHT-END HYDROCARBONS ON SOIL

Bioremediation Test Procedure for:
Diesel, Jet Fuel and Gasoline on Soil

Materials needed:

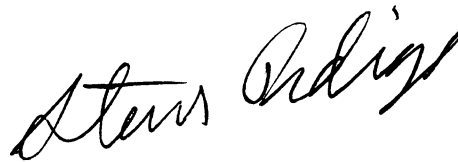
1. One (1) cubic Foot of Soil.
2. OSE II
3. Pan with dimensions as follows: 2 feet x 1 foot x 6 inches.
4. Natural, fresh or ocean water.
5. Light-end Hydrocarbon.

Procedure:

1. Make a solution containing 2.0 ounces of OSE II in 128 ounces (one gallon) of water. This becomes your OSE II solution. Use natural or fresh water for inland settings and natural ocean water for shoreline type cleanup or ocean settings.
2. Add 100 ml of Light-end Hydrocarbon to the soil and mix well. Spread the contaminated soil to a depth of six inches in the pan.
3. Remove 100g of soil from the pan. This soil will be analyzed as indicated below and will provide initial contamination levels to reference and compare to all other results.
4. Thoroughly wet the soil with 60 ounces of water (either fresh water or ocean water) depending on your test.
5. Since the spill quantity of light-end hydrocarbon is known (100 ml) add 100ml of the OSE II solution to the pan of contaminated soil. This application will provide one (1) part OSE II and 100 parts water to 100 parts Light-end Hydrocarbon that is recommended in OSEI literature.

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Testing Light-end Hydrocarbons on Soil
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6. Maintain a 30% moisture level in the soil.
7. Mix the soil by hand two times per week to allow adequate aeration and to promote bacteria motility.
8. At time intervals of initial, 3 days, 7 days and 15 days after OSE II application, remove a 100g sample of soil for analysis. The remaining soil can be sampled at any additional time should 15 days prove inadequate for complete degradation of hydrocarbons.
9. Perform EPA Tests 8015 or 8020 to determine degradation.



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OIL SPILL EATER II
February 8, 2001
TESTING - HEAVY-END HYDROCARBONS ON SOIL

Bioremediation Test Procedures for:
Crude Oil, Hydraulic Fluid, Motor Oil, Radiator Fluid,
Chlorinated Hydrocarbons, PCB'S, etc.

Materials Needed:

1. One Cubic Foot of Soil.
2. One Half Pint OSE II Concentrate.
3. Pan or Tray - 2 feet x 1 foot x 6" deep. (2' x 1' x 6" deep).
4. Natural, fresh or ocean water.
5. Heavy-end Hydrocarbons.

Procedure:

1. Make a solution containing 3 ounces of OSE II Concentrate in 128 ounces (one gallon) of water. This becomes the OSE II Solution.
2. Add 100 ml of the hydrocarbon to be tested to the soil and mix thoroughly. Spread the contaminated soil to a depth of six inches in the pan.
3. Remove 100 grams of soil from the pan. This soil will be analyzed as indicated below and will provide initial contamination levels to reference and compare to all other results.
4. Thoroughly wet the soil with 60 ounces of water, either fresh water or ocean water.
5. Since the spill quantity of the heavy- end hydrocarbon is known (100 ml), add 100 ml of the OSE II Solution to the pan of contaminated soil. This application will provide 2 parts OSE II Concentrate to 100 parts water to 100 parts of contaminated soil as recommended in OSE literature.
6. Maintain a 30% moisture level in the soil.
7. Mix with soil by hand two times per week to allow adequate aeration and to allow bacteria motility.

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8. At time intervals of 0 days (initial) 3 days, 7 days, 15 days and 30 days after OSE II application, remove a 100 gram sample of soil for analysis. The remaining soil can be sampled at any additional time should 30 days prove inadequate for complete degradation of Hydrocarbons.
9. Perform EPA Tests 8100 or 8030 to determine degradation.


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