

7037.3600 DETERMINATION OF NUTRIENT ADDITION FOR PETROLEUM HYDROCARBON BIODEGRADATION.

Subpart 1. **Nutrient evaluation and addition.** Nutrient requirements are determined as described in items A and B:

A. Minimum nitrogen addition to a land treatment plot must be based on the calculations and table in this item and is subject to the maximum nitrogen application rates and management requirements under subparts 3 and 4:

$$[(\text{average TPH in batch of soil, ppm}) \times (\text{spreading thickness, inches}) \times 0.0128] - [\text{organic matter, percent} \times 50] = \text{pounds of nitrogen per acre required}$$

In this formula "average TPH in batch of soil" refers to the average total petroleum hydrocarbon level of the batch of petroleum contaminated soil, expressed as parts per million (ppm); "organic matter, percent" refers to the value obtained or determined as given in part 7037.3300, subpart 1.

Nitrogen application rates determined by the above calculation may be reduced depending on the crop grown within the previous year and whether nitrogen fertilizer was added within the previous year, as given in the following table:

Condition	Nitrogen Rate Reduction, pounds of nitrogen per acre
Previous crop—alfalfa	100
Previous crop—soybeans, clover, or other legume	40
Nitrogen applied within last year	1/3 of a pound for each pound of nitrogen applied

If the nitrogen application rate as determined under this item is less than 25 pounds of nitrogen per acre, then nitrogen need not be applied.

B. Minimum phosphorus addition to a land treatment plot must be based on the calculation below and previous phosphorous fertilizer additions as given in this item and is subject to the maximum phosphorus application rates and management requirements under subparts 3 and 4:

$$[(\text{average TPH in batch of soil, ppm}) \times (\text{spreading thickness, inches}) \times 0.0027] - [\text{phosphorus concentration, ppm} \times 2] = \text{pounds of phosphorus per acre required}$$

In this formula "average TPH in batch of soil" refers to the average total petroleum hydrocarbon level of the batch of petroleum contaminated soil, expressed as parts per million (ppm); "phosphorus concentration" refers to the extractable phosphorus concentration of the native soil as determined under part 7037.3300, subpart 2, and

expressed as ppm. If the land treatment site has been soil tested within the last three years for phosphorus, results from the last soil analysis may be used. If the extractable phosphorus concentration is not or has not been conducted, a value of five parts per million shall be used in the above calculation.

Phosphorus application rates determined by the above calculation may be reduced by one-half pound for each pound of phosphorus applied within the previous three years.

If the phosphorus application rate as determined under this item is less than ten pounds of phosphorus per acre, then phosphorus need not be applied.

Phosphorus content of commercial fertilizer is typically listed as phosphate (P_2O_5). One pound of P_2O_5 equals 0.44 pounds of phosphorus.

Subp. 2. **Maximum nutrient application rates.** The maximum rates of nitrogen and phosphorus to be applied in a one-year period are as follows:

Condition	Maximum nitrogen application rate, pounds per acre	Maximum phosphorus application rate, pounds per acre
Land treatment plot cropped after spreading	200	120
Land treatment plot not cropped after spreading	100	60

The cropping conditions in the above table refer to part 7037.2400.

Nutrient application in subsequent years is not required.

Subp. 3. **Other fertilizer management considerations.** Additional fertilizer management considerations are as described in items A and B:

A. Timing and methods for fertilizer application are given in part 7037.2200, subpart 2. If fertilizer is applied in separate multiple applications and the monitoring requirements of part 7037.2700 have been met prior to application of the required amount of fertilizer, then the remainder of the fertilizer need not be applied.

B. Acceptable nutrient sources for application include compost, manure, other organic fertilizers, or inorganic fertilizers.

Statutory Authority: *MS s 116.07*

History: *17 SR 2914*

Published Electronically: *November 3, 1998*