

GUIDELINES FOR SOIL ANALYSES

Required Analyses

If you can provide us with a document from MDE or other appropriate regulatory agency that states that “the soil is contaminated with virgin oil and not used oil, oil refuse, or oil mixed with waste,” then we need analyses for only BTEX and TPH. The TPH must be GRO by Method 8015 Modified, purge & trap, if the contaminant is gasoline; DRO by Method 8015 Modified, solvent extraction, if the contaminant is distillate fuel other than gasoline; Oil & Grease by Method 9071B if the contaminant is heavier than No. 2 oil; TPH by all three methods if the contaminants are unknown.

In the absence of an appropriate government document, we need analyses for BTEX, TPH (as described above), a complete TCLP (metals, volatiles, semi-volatiles, pesticides and herbicides) and PCBs. The only exception to these requirements is for soil excavated as part of a corrective action plan under the UST program, for which TCLP organics are not required

All of these analytical requirements are stipulated in our Oil Operations permit except BTEX, which is required by our air permit. You can verify this by contacting Al Simkins at MDE Oil Control Program (410-537-3402).

Depending upon the history of the job site, additional analyses may be required to assure the quality of our end products. For example analyses for total metals and/or PAHs may be required when those compounds are known or suspected to be present at concentrations greater than soil cleanup standards.

Sampling Frequency

The number of samples that must be analyzed depends on the variability of contaminant levels. The goal is to accurately characterize the soil as it leaves the site of origin. If the soil is uniformly contaminated, then one representative, composite sample would be sufficient. When the levels of contamination are highly variable and the amount of soil is large, then more than one composite sample is needed. For large jobs, a rough rule-of-thumb is at least one composite sample for the first and second 1500 tons of soil and each 3000 tons thereafter unless there is reason to believe that the 3000 ton average TPH varies by less than 500 ppm, benzene by less than 2 ppm, toluene by less than 20 ppm, PCBs by less than 1 ppm, and all TCLP analytes remain below hazardous thresholds. If there are zones of contamination, then a composite sample should be analyzed for each zone. For many jobs, only one composite sample need be analyzed for PCBs and most TCLP analytes (metals & benzene are the most likely to be of concern).

Soil that comes into our facility is treated in batches, and the level of treatment depends on TPH; thus the need for accurate TPH data. Furthermore, our operation is restricted based on potential emissions of toxic air pollutants; thus the need for accurate benzene & toluene data.

We have no latitude in the types of analyses required, but the number of analyses is a judgment call. We leave a lot of the discretion up to the soil generator and those most familiar with the job site, but we have to feel confident that the soil has been accurately characterized.

Feel free to call me at our Hagerstown plant (301-791-6220 ext. 125) any Tuesday, Wednesday or Thursday or e-mail me (dsimmons@cleanearthinc.com) anytime.

Dave Simmons
Environmental Control Coordinator
Clean Earth of Maryland, Inc.