



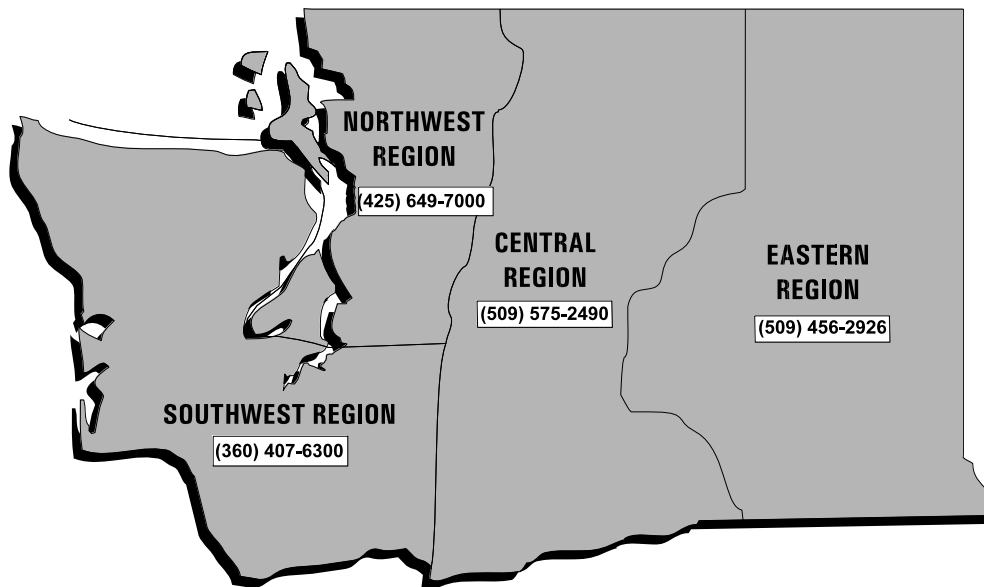
Choosing An Analytical Laboratory For Dangerous Waste Testing

Department of Ecology
Hazardous Waste and Toxics Reduction Program
August 2000
Publication # 00-04-022

For a copy of this document, please contact:

Department of Ecology
Publications
P.O. Box 47600
Olympia, WA 98504-7600

Please include your street address for UPS delivery



The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status or sexual orientation.

If you have special accommodation needs or require this document in alternative format, please contact the Hazardous Waste and Toxics Reduction Program at (360) 407-6700 (Voice) or (360) 407-6006 (TDD).

Ecology's telecommunications device for the deaf (TDD) number is (360) 407-6006. Regional TDD numbers are:

CRO (TDD) (509) 454-7673
ERO (TDD) (509) 458-2055

NWRO (TDD) (425) 649-4259
SWRO (TDD) (360) 407-6306

Introduction

If your firm generates waste, you may need to have it analyzed to determine whether or not it must be designated as a dangerous waste or extremely hazardous waste (EHW) pursuant to the Washington State *Dangerous Waste Regulations*, WAC 173-303. The task of finding an analytical laboratory for testing a waste can be difficult for those unfamiliar with all the technicalities of the regulations and analyses. To aid in this process we have created this guidance to help familiarize those given this chore. Analytical costs can be significant, but with a little background you can make sure you are getting results that will meet your needs without unnecessary testing, and with the quality you need. Cost should not be your only consideration in choosing a laboratory. Certain questions should be asked of the analytical lab to determine if they can produce the services you will need to meet regulatory requirements.

Ask whatever questions you must to determine the following:

Is the lab accredited or certified for the parameters of interest?

The *Dangerous Waste Regulations* do not require the use of accredited labs for dangerous waste designation analyses as is the case for samples analyzed in accordance with the Clean Water Act (WACs 173-216, 173-220, and 173-230) and the Model Toxics Cleanup Program (WAC 173-340). However, using accredited labs can be the best indicator that the lab has some expertise for that testing parameter. The Washington State Department of Ecology (Ecology) maintains a “List of Accredited Labs” at www.ecy.wa.gov/programs/eap/labs/documents/AllAccreditedLabListInternet.pdf. You can also call your local regional office for information about accredited labs. Although these labs are accredited for specific parameters, this does not represent a blanket approval for all tests performed at the laboratory.

Does the laboratory perform the test in-house?

To provide full analytical services, many laboratories will accept samples for testing that they will in turn send to another lab for the actual analysis. This is an accepted procedure, and there is nothing inherently wrong with it. But, some degree of control is lost by you, the person paying for the analyses. If a laboratory uses outside services, it should be able to provide you with all the information you require about those supporting labs.

Does the laboratory identify the methods used in its report, and are they the required methods?

The *Dangerous Waste Regulations* are very specific about which analytical methods must be followed for dangerous waste designation testing. If the laboratory uses a different method or significantly modifies the method, results will not be valid for designation unless you have received permission from Ecology to use the alternate or modified method(s). Many tests have several steps involved in obtaining the desired result. For example, some samples require an extraction procedure and sometimes a cleanup procedure before the actual analysis is run. All standardized methods for doing sampling, extractions, cleanups, and the direct analysis are in EPA's *Test Methods for Evaluating Solid Waste*, SW-846. Guidance for selecting the appropriate analysis is offered in Ecology's *Chemical Testing Methods for Designating Dangerous Waste*, Publication #97-407. The laboratory should include the method(s) followed in the analytical report to assure you that your data is valid.

Will the laboratory provide the quality control data that is associated with your analyses?

As part of any analytical method, specific quality control procedures are used to ensure that the results obtained are accurate and precise each time the analysis is performed. At a minimum these procedures should include the use of method blanks, standards and matrix spikes but they may also include the use of laboratory fortified blanks, duplicate samples and certified reference materials. If a laboratory is unable or unwilling to provide this data, the customer may have reason to suspect the quality of the results received.

Does the laboratory properly dispose of its dangerous waste?

Analytical laboratories fall under the same regulations that you do when it comes to disposal of hazardous waste. In addition to the chemical wastes generated in performing the analyses, any excess amount of your waste sample may also need to be managed as dangerous waste. Samples are only excluded from the requirements of the *Dangerous Waste Regulations* up until the time they are analyzed and no longer needed. Proper disposal will ensure that you will not acquire any liabilities from mismanagement by the laboratory.

Does the laboratory report holding times along with supporting information such as the date analyzed?

As a sample ages, the concentration of the compounds of interest may change. Analytical samples have a specified life span or “holding time” that, if exceeded, will invalidate the results. These holding times vary depending on the parameter being analyzed and are generally listed in the procedure being followed. To ensure that your results are valid, the holding time from the time of sampling until testing should be documented.

What does the laboratory need to know about your goals and the sample?

To provide you with meaningful results the laboratory will need information regarding your goals in the analysis and the type of sample you are submitting. Be sure to specify that you are submitting samples for dangerous waste designation. Be as specific as possible. For example, state that you are designating your waste under Washington's *Dangerous Waste Regulations*, WAC 173-303, for ignitability, TCLP organics and fish toxicity bioassay. Try to provide the laboratory with as much information about the sample itself. The information most useful to the lab will be regarding the type of material (water, solvents sludge, oily, multi-phase etc.) and the approximate concentration of the parameter that you are testing for. This helps them prepare and properly setup the instrumentation. Also provide any information that might affect the safety of the lab personnel. For example, if you know that your waste contains cyanide but you are only testing for TCLP metals, let the lab know about the cyanide levels so the analysts can be protected.

There are other significant concerns that will affect the usefulness of your testing that do not involve the laboratory. To properly designate a waste, the sample that you submit to the lab will need to be representative of the entire waste stream. The *Dangerous Waste Regulations* specify the sampling procedure that must be used for various situations. Using an incorrect sample container or one that does not provide the lab with sufficient quantity will invalidate the results. An improper sample container may interact with the chemical of interest or contaminate the sample. The sample must also be properly stored and handled until it is received by the laboratory to guarantee that the parameter that is being analyzed has not significantly changed in concentration or form. The laboratory may be able to provide this information and possibly the sample containers.

If you have any questions regarding the proper test procedure for your purpose or would like further information on this subject, please contact any of Ecology's regional offices listed inside the front cover of this document and ask for a Dangerous Waste Specialist.

