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What makes a good Phase II assessment?

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What makes a good Phase II assessment? Well, you can't go by the cost, because every Phase II should be tailored to fit the site and its history, as well as who's requiring the Phase II. The basic idea is to convince someone that the site isn't contaminated (we hope).

Do you need a good Phase II? If you're the buyer, do you want to get an unpleasant expensive surprise? Maybe a really expensive surprise? If you're the seller, your buyer or his bank will ask me to review the Phase II, and if it's not good enough, I certainly won't recommend the purchase. So, YES, you need a good Phase II if you need one at all.

A good Phase II investigation decides whether there's any contamination on the site, at something like minimal cost. That means that you analyze at least one soil sample from every identified AEC, and that you analyze them for all the potential Contaminants of Concern (COCs) in each AEC. Because the Phase II tries to decide whether there's any contamination, the samples most likely to be contaminated are the ones that get analyzed. Sorry.

All good Phase II reports contain at least three things - a scaled map of the site showing sample locations, boring logs for all the test borings, and copies of the laboratory reports. Maps showing rectangular sites and rectangular buildings are a strong indicator that the report quality is poor; in contrast, surveyed locations are state-of-the-art. Boring logs should include measurements made by a photoionization detector (PID), and lots of detail about the soil. Data of all types should be presented in tables - the reader shouldn't have to read the sometimes impenetrable laboratory reports.

If groundwater is investigated, the report needs to include a table showing the construction details of the wells - and you'll need an absolute minimum of three wells because you need to determine the direction of groundwater flow, which can only be done with three (or more) wells. A common method of cost-reduction for Phase IIs is to install 1"-diameter wells using a Geoprobe rig. This usually works well, but if the site is an 'Establishment' site, DEP "guidance" requires 2" wells, installed using a different and more expensive drilling rig. Also, 2" wells generally last longer, so if you need groundwater monitoring, 2" wells are the way to go. Wells installed using a Geoprobe rig occasionally fail to reach their intended depth, resulting in dry (worthless) or nearly dry wells.

In general, for non-'Establishment' sites, I think the most cost-effective way to design a Phase II is to install as many test borings as possible, and to analyze the minimum number of samples - fewer analyzed samples than borings. A good Geoprobe driller with an experienced geologist can install, log, and survey between 18 and 30 test borings in one day, depending on the depth required. On small commercial sites, at the end of the day, there's a hole everywhere and banks will feel comfortable that the Phase II has looked in the right places (i.e., everywhere).

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