

## Land Recycling Program Q&A Database

The following questions and responses were found in the database:

ID# 221

Category: Agricultural Land

Question: Are farms ineligible for Act 2 liability relief?

Response: Generally, yes. Act 2 was enacted to facilitate the cleanup of former industrial sites and return them to productive use, and to help prevent the needless development of prime farmland that has residual concentrations of agricultural chemicals applied to the land using normal, routine and proper application methodologies established by the EPA, DEP, the PA Department of Agriculture, and the chemical's manufacturer. Such normal agricultural practices do not constitute "releases" for the purposes of Act 2. If specific areas of a farm have been affected by a spill or release of regulated substances (i.e., through a practice) that does not fit within the scope of normal and routine agricultural practices, Act 2 would be available for those affected parts of the farm. An example of this would be a release of fuel oil from a leaking storage tank.

Regulations:

References:

ID# 222

Category: Agricultural Land

Question: What if the farm has a known release of a contaminant?

Response: The Department will use its authority under statutes other than Act 2 to enforce the cleanup of releases to farmland properties of agricultural chemicals that do not fit the definition of being released in the normal course of farming practices, such as leaks from fuel storage tanks.

Regulations:

References:

ID# 223

Category: Agricultural Land

Question: Can I take a whole farm through the Act 2 program?

Response: No. Regardless of whether there have been other releases on a farm, the presence of agricultural chemicals applied during normal and routine farming procedures is not eligible for Act 2 liability relief. In addition, since it is the Department's policy that a remediator may choose the regulated substances, release, and media to be addressed under an Act 2 NIR, the remediation of a release under Act 2 on farmland does not open the door to the Department requiring that all releases, including those from the proper application of agricultural chemicals, be addressed. As is the case with any Act 2 remediation, the release of liability applies to those regulated substances identified and addressed under the NIR submitted to the Department for the specific release on the property, and does not apply to those substances that are the result of normal agricultural practices.

Regulations:

References:

ID# 224

Category: Agricultural Land

Question: Why is the Department restricting use of Act 2 on farms?

Response: Act 2 is designed to remediate industrial sites, revitalize existing sites with infrastructure in place and to save farmland/open space. Allowing Act 2 on farms would go against the intent of the legislature. Moreover, using agricultural chemicals in the normal course of farming activities does not constitute a "release" for purposes of Act 2. As such, we are restricting its use on farmland.

Regulations:

References:

ID# 40

Category: Attainment

Question: How do you apply 75%/10X rule in situations where compliance with two different SHS MSCs are required, such as an MSC for surface soil and another MSC for subsurface soil?

Response: Two separate attainment tests, each applying the 75%/10X rule would be required (e.g. 0-2 feet and 2-15 feet).

Regulations:

References:

ID# 46

Category: Attainment

Question: For groundwater attainment demonstration during a period of four quarters instead of eight quarters, how many samples do I have to take from each well during the four-quarter period?

Response: Under the background standard, eight. (Section 250.707(a)(2)(x) of the regulations).

Under the Statewide health standard, one sample per well per sampling event, or a total of four samples.

Regulations: 250.704(c), 250.707(a)(2)(x)

References:

ID# 67

Category: Attainment

Question: We will be submitting a bid for monitoring well abandonment and treatment system demolition.

The site recently obtained closure from the state under the PA Act 2 program for historical soil and groundwater issues. Are there any regulations we should be aware of for our scope of work? If so, could you provide a web page reference, or perhaps your phone number for direct dialogue?

Response: The requirements for abandonment of wells per DEP, is located in the "Groundwater Monitoring Manual" which is available online. Here are the directions:

Go to the DEP Online Documents Warehouse: <http://www.dep.state.pa.us/eps/>

Click on Technical Guidance Final Documents

Click on Bureau of Watershed Management folder

The fourth item down is the groundwater manual. You can view it in PDF or text.

Go to chapter 7, Well Abandonment procedures pp. 72-70.

Regulations:

References:

ID# 69

Category: Attainment

Question: I have some questions regarding the use of the 95% UCL procedure. Based upon the volume of the excavation area, I obtained 48 post-excavation samples and had planned on using the 75/10X rule to demonstrate attainment. However, since the samples were composite samples consisting of approximately 15 discrete samples, and advanced statistical method must be used to demonstrate attainment. The parameters of interest include arsenic, beryllium, cadmium, chromium (total), copper, lead, nickel, zinc and mercury. To date, all samples have satisfied the MSCs for residential sites(0-15', used aquifer).

My questions are as follows:

- 1) Page IV-46 of TGM, Section 4., Items 1-5. Must I complete this section?
- 2) Page IV-51 of TGM, sample size calculation. I am concerned about the number of samples required to demonstrate attainment. A number of samples were obtained, plus the excavation will be backfilled. Therefore, obtaining additional samples in the future may be difficult, if not impossible.
- 3) Page IV-61 of TGM, Item 4, how do I calculate  $S_x$  for the type of samples obtained? Simple  $S_b/\text{square root of } n$  or something different?

4) Page IV-52 of TGM, first paragraph, describes other equations for calculating UCL for composite samples.

Response: Question 1: Yes, for the 95% UCL procedures. No, for the 75%/10X rule.

Question 2: Please take more samples than the calculated minimum number of samples. Otherwise, you may need to adjust beta.

Question 3:  $S_b$  would be calculated based on composite sample data, and  $n$  is the number of composite samples.  $S_x$  would be calculated from  $S_b/\text{square root of } n$ .

Question 4: The equations are essentially the same as those listed on Pages IV-61 and IV-62 except that the  $X_i$ 's were based on the data of composite samples and  $n$  is the number of composite samples. Make sure that every composite sample was made from the same number of discrete samples so that all composite samples will have the same weight.

Regulations:

References:

ID# 71

Category: Attainment

Question: If a remediator excavates down to bedrock and still exceeds the Statewide health standard, do they grid off the sidewalls to determine attainment of the soil standard in addition to doing a groundwater investigation? It seems to me that it would be logical to sample the sidewalls since that is the only remaining location containing soil. In addition, should the random sampling grid just be applied to those walls or is there a different procedure in this instance?

Response: Yes, the sidewalls are to be gridded as you have described. The area considered for the attainment sampling on the sidewalls would be the zone which was indicated as being contaminated above the standard. For example, if the contamination was not apparent from 0-4 feet, then that area would not be considered in the attainment sampling.

Regulations: 250.703(b)

References:

ID# 82

Category: Attainment

Question: In the situation where an excavation is sampled, based on biased sampling as per Section 250.707(b)(1)(iii)(B), and the consultant finds that 1 out of the 5 samples is above the applicable standard, they will then re-excavate the area with the elevated levels. How does resampling continue? How many samples?

Response: The referenced attainment method utilizes the non-exceedance rule. Therefore, the areas that indicated attainment need not be resampled. The additional samples are to be taken in the area of additional excavation (where the initial sample exceeded the standard). The number of additional samples is a function of the total volume of excavation (initial excavation plus secondary excavation) minus the number of samples that passed. For example, suppose 200 cu yd were excavated and 5 samples were taken, one of which failed. The remediator would excavate in the area of the sample failure using the best professional judgment as to when to stop. Then, if he excavated less than 50 cu yards (for a total of 250) he would only have to take one sample. If he excavated a total larger than 250 cu yd, he would take additional samples at the rate of 1 per every additional 100 cu yd.

Regulations:

References:

ID# 205

Category: Attainment

Question: I have seen this twice now in the last week where a consultant is looking at 4 consecutive quarters of groundwater data and wanting to use the 75%/10X test to demonstrate attainment.

Reading Section 250.704(d)(3) it seems that in order to even consider suggesting that only 4 consecutive quarters of data is adequate for attainment purposes you need to have all contaminant concentrations below the MSC. The only way the 75%/10X test can be applied is if you have a minimum of 8 consecutive quarters of data. In one of these cases it doesn't even look like they have the Department's preapproval to reduce sampling quarters...I'm wondering about the application of the 75%/10X test.

Response: You are correct that they need at least eight consecutive quarters of groundwater data to use the 75%/10X rule. They may use four consecutive quarters or less of

groundwater data with written approval from the Department under the conditions in 250.704(d). The requirement in 250.704(d)(3) prevents them from using the 75%/10X rule and requires use of the no exceedance rule.

Regulations:

References:

ID# 208

Category: Attainment

Question: It is my understanding that once we attain 8 consecutive quarterly sampling events for a monitoring well in which groundwater contaminants are detected below Statewide health standards, we have met the compliance guidelines for Act 2 for the contaminants of concern at that well and we are no longer obligated to continue sampling that well. It is also my understanding that we can then discontinue monitoring that well without first receiving either written or verbal approval from DEP.

Response: Numerical attainment is demonstrated on a well-by-well basis. Hence, if you have 5 wells and achieve numerical attainment on 2, and must continue sampling the other 3 to achieve attainment, you need not sample the first 2 for purposes of numerical attainment. Just keep in mind that attainment under Act 2 (e.g. Statewide health standard), is partly numerical attainment of the generic numbers, and also a fate and transport analysis (could be based on professional judgment) that the site will continue to maintain SHS attainment in the future – OR that the final report contains a post-remediation care plan to address how the future non-attainment will be identified (e.g. monitoring) and an action plan for what steps will be taken to maintain the standard.

That caveat blurs the issue of sampling a bit. A professional should make an informed decision that the attained wells are no longer needed to be able to show continued attainment in the future by the use of fate and transport analysis. This decision is based in part by the geographic array of wells and other known factors which may suggest or help give confidence against the contamination moving toward the “attained” wells.

Regulations:

References:

ID# 211

Category: Attainment

Question: Certain semi volatile constituents have PQLs which are higher than the groundwater MSC (in the case I am working on it is chrysene). If the compound in question is detected below the PQL but above the Statewide health standard, is that compound considered to have met attainment under the Statewide health standard?

The other somewhat interesting issue is that chrysene's MSC is based upon solubility and therefore if it is above the MSC there must be some level of free phase chrysene in the monitoring well. Since with Statewide health you are not supposed to leave free product at the property boundary, does chrysene above the solubility limit constitute free product in this instance?

Response: In demonstrating attainment of any standard under Act 2, the concentration of a regulated substance is not required to be below the level of the PQL. Therefore, if a regulated substance is present in a sample at a level that exceeds the MSC but is below the published PQL, then that sample can be used to demonstrate attainment of the MSC for that substance.

The solubility of a substance can be affected by numerous factors. The solubility values reported in the regulations are based upon measurement at a temperature of 20°C whenever possible. Ambient temperature at the time of sampling and/or analysis may affect the apparent solubility of a substance. Also, organic substances may adsorb onto particulate matter suspended in groundwater. This adsorbed amount of the substance could influence the analytical result depending on the specific extraction and analytical methodology used, and also result in an apparent exceedance of the solubility value. Neither of these situations necessarily indicates that separate phase liquid is present. The Technical Guidance Manual refers to EPA publications on the determination and removal of free product in Section IV.E. You would need to make a determination based upon site-specific information as to whether an exceedance of the published solubility value indicates the presence of separate phase liquid.

Regulations:

References:



ID# 229

Category: Attainment

Question: If a source of contamination is located near the apparent up-gradient property boundary, is the groundwater point of compliance located at the down-gradient property boundary?

Response: For background standard cleanups, the point of compliance is throughout the area of contamination. For Statewide health and site-specific standards the point of compliance is the property boundary which existed at the time the contamination was discovered. This may be the up-gradient and/or down-gradient property boundary as appropriate for the specific site conditions.

Regulations:

References:

ID# 236

Category: Attainment

Question: For attainment of the Statewide health standard (SHS) medium-specific concentrations (MSC) in regard to groundwater (nonresidential, used aquifer), do all monitoring points on the property have to demonstrate that 75% of the samples collected within each monitoring well are below or equal to the SHS with no sample exceeding 10 times the SHS on the property, or can we use just the property boundary wells for analysis as the point of compliance?

I have a site (retail gas station) where the property boundary wells are below the SHS MSCs (with eight consecutive quarters of data), but several wells on the property near former source areas still exceed the 75%/10X rule. The plume is stable on the property and we have demonstrated the natural attenuation is occurring, and hydraulically downgradient monitoring wells are below PQLs.

Please advise if I can demonstrate attainment under the SHS just using data from the point of compliance wells (property boundary), and demonstration through analytical modeling that the plume is stable on the property. If not, I would likely have to revise the attainment standard for site-specific.

Response: The answer is that you apply the 75%/10X rule to the POC wells which should be located at the property boundary. Wells in the interior of the property may exceed the selected standard. In the general case, the only other thing to demonstrate is

that if the plume exceeds the standard in the interior, there must be evidence that the standard at the POC will be maintained in the future either through natural attenuation or some postremediation care plan that includes monitoring and action steps to be taken before the POC wells fail. In the case you described, you meet these standards.

Regulations:

References:

ID# 47

Category: Background Standard

Question: Can a person propose to demonstrate attainment of the background standard for sediment as a media?

Response: Yes. Act 2-95, 302(b)(1) does allow for demonstration of attainment of “media of concern...including soil and groundwater”.

Regulations:

References: Act 2, Sec 302(b)(1)

ID# 48

Category: Background Standard

Question: How does the DEP address groundwater contamination entering a subject property which transforms or degrades to a compound similar to a spill which occurred on the subject property? How is background determined?

Response: The statute provides for establishing the background value for a regulated substance by measurements of concentration “...that is present at the site, but is not related to the release of regulated substances at the site.” For groundwater, this must be upgradient of the on-property source. Therefore, contamination which is released to the environment and subsequently migrates onto and through the subject property and is changing in both concentration and in regulated substance, would in total represent concentrations on the site, but not related to a release on the site. The remediator determines the background concentration values by combined use of sample analysis and fate and transport analysis which supports the conclusion. It is the remediator who has the burden to demonstrate

that the concentrations are the result only of transformation or direct migration of chemicals from the background area.

Regulations: 250.202

References:

ID# 72

Category: Background Standard

Question: In Section 250.707(a)(3)(ii) the wording “A minimum of twelve samples shall be collected from any combination of monitoring wells,…” needs to be explained or reworded.

Response: This issue is addressed in Section II.A.4.a of the Technical Guidance Manual. When background groundwater condition is due to naturally occurring or areawide contamination, a minimum of twelve samples should be taken offsite and twelve samples taken onsite. The number of wells sampled onsite and offsite must be the same in each round of sampling. For example, if three wells are sampled offsite, three wells must be sampled onsite. In this example, each of the wells must be sampled four times at a minimum. The samples must be independent of one another. The onsite and offsite samples must be taken at the same time. The time frame for establishing this condition is not predetermined, as it is in the upgradient release. By increasing the number of wells onsite and offsite, the number of sampling events necessary to meet the minimum of twelve samples can be reduced (two wells will require six sampling events, six wells will require two sampling events). The offsite wells must be located upgradient of the site. The number and horizontal and vertical location of the wells onsite must be adequate to characterize any release of regulated substance at each site.

Regulations:

References: TGM Section II.A.4.a

ID# 83

Category: Background Standard

Question: If a successful background demonstration is made on a site in which the levels are above a Statewide health standard, can the DEP approve the background standard cleanup?

Response: Yes, the background standard is separate from the statewide standard and under Act 2, is viable for receiving liability relief. In the past, some DEP field offices provided language in the final report letter for background sites to the effect that the standard was attained, but the concentrations of substances on the site are above recommended Statewide health levels.

Regulations:

References:

ID# 242

Category: Background Standard

Question: Does PA have an established average background level for arsenic in soil? (Statewide or regionally?)

Response: No. Pennsylvania has not established average background concentrations. Levels of arsenic and other naturally occurring substances vary considerable across the state. Some literature references are available for certain rock and soil types in Pennsylvania. Under the Act 2 program, background concentrations are determined on a site-by-site basis.

Regulations:

References:

ID# 73

Category: Combination of Standards

Question: When using a combination of the Statewide health standard for soils and the site-specific standard for groundwater, to what extent does one consider the effect of soils on groundwater?

What about the reverse situation when using site-specific for soils and Statewide health for groundwater? Are the considerations different?

Response: When using Statewide health for soils, and site-specific for groundwater, a remediator must use the soil/groundwater value in determining the Statewide health standard, and consider soil as “source” in the groundwater pathway fate

and transport analysis (used in determining the site-specific standard for groundwater).

In the reverse situation, a remediator must consider the soil to groundwater pathway in the fate and transport analysis to ensure that the site-specific standard for soil is protective of the groundwater and that the contaminant concentration in groundwater at the point of compliance will not exceed the Statewide health MSC.

Regulations: 250.308, 250.404, 250.604

References:

ID# 231

Category: Combination of Standards

Question: My site has soil concentrations that will meet the nonuse aquifer values, however there are still areas that are above the nonuse aquifer standards for PCE, TCE and 1,1,1-TCA and 1,1-DCE. For these areas, I would like to use the site-specific standard with capping and deed acknowledgement. This question is in regard to soils only—can I combine both the nonuse aquifer and site-specific standards? I'm not sure if getting a nonuse aquifer designation would be any benefit—perhaps it should just be a site-specific closure? I have put wells in to check groundwater concentrations, which appear to be below standards, and only want to get liability relief for soils.

Background: The site is a commercial site where bulk chemicals are repackaged from tanker trucks to smaller drums/containers. This loading occurs in a covered, but open on two sides space. The drums/containers are stored in several adjacent warehouse type rooms, that are enclosed. The facility has been active for at least 35 years and will remain active with similar activities, under a new owner. Spillage has occurred and soils are elevated (above the nonuse aquifer numbers) in some areas to 4 feet, others to 12 feet and in a smaller area to 15 feet. I have requested a nonuse aquifer determination. I want to combine the nonuse aquifer status for soils with a site-specific standard—so all I will need to do is cover and deed acknowledge the areas with elevated concentrations of TCE; PCE; 1,1,1-DCE & 1,1,1-TCA.

Response: If you are meeting the residential nonuse aquifer soil standard, you would not need a deed acknowledgement in the nonuse designation area, but would in the area covered by the site-specific standard. Keep in mind though that in the nonuse area, you would still need to meet the direct contact soils number, which is the same for nonuse or used aquifers (in soils). Based on this, the site would be

protective in a residential setting. In summary, a combined cleanup with residential nonuse aquifer designation (for soils) would meet the normal direct contact number and then, if lower, the nonuse aquifer value for the sub area using this cleanup standard. The remaining cleanup area using the site-specific standard would use the deed acknowledgement requirements of HSCA.

If this is being done as a combination of standards remediation, remember that you need to comply with all of the requirements of both standards. This means that for those substances that you are addressing under the Statewide health standard, you must comply with all of the requirements of that standard, including the NIR, request for a nonuse aquifer determination, and demonstration of attainment of the standard for those substances. For the part of the remediation being conducted under the site-specific standard, all of the requirements of that standard also apply. This includes the NIR, the 30-day comment period, and the notices required for all of the reports submitted in support of the site-specific standard. Under the site-specific standard you must include consideration of vapor intrusion for all substances, including those covered by the Statewide health standard cleanup. It might be simpler to accomplish all of this under the site-specific standard. In this case the nonuse aquifer standard cannot be used but similar considerations would be made in the exposure pathway analysis for the risk assessment.

Regulations:

References:

ID# 31

Category: Deed Notices

Question: Is a deed acknowledgement or restriction currently required on a site attaining the Statewide health nonuse aquifer residential standard?

Response: No, a deed acknowledgment or deed restriction is not needed in the case of an approved residential nonuse aquifer site.

Regulations:

References: Act 2, Section 303(g)

ID# 49

Category: Deed Notices

Question: It was indicated that a deed notice was required for a nonresidential Statewide health standard cleanup. Under what standards and conditions are deed notices (or restriction) required?

Response: Deed acknowledgments are requirements of the Solid Waste Management act and the Hazardous Sites Cleanup act and are required of all sites, unless specifically waived by Act 2. Act 2 waives these requirements for sites remediated under the background and residential Statewide health standards.

Regulations:

References:

ID# 50

Category: Deed Notices

Question: Is there standard language or a format that the Department wants to see as a part of a deed notice?

Response: Model language for deed notices and deed restrictions is available on the Land Recycling web page under Voluntary Cleanup and Standards, Forms and Lists at <http://www.dep.state.pa.us/dep/deputate/airwaste/wm/landrecy/Forms/Forms.htm>.

Regulations:

References:

ID# 160

Category: Deed Notices

Question: How to implement off-property deed notice?

Response: The deed acknowledgment provision of the SWMA and HSCA apply only to the source property. A remediator cannot compel another property owner to notice his deed.

Regulations:

References:

ID# 207

Category: Deed Notices

Question: A tanks case will be using the site-specific standard. The constituent of concern is elevated benzene in the groundwater. Is the remediator required to put a deed restriction on the property if a municipal ordinance is already in place which prohibits the drilling of wells? If so, could you give me a citation out of the Act or the regs to back it up?

Response: No. A deed restriction is only necessary when it is part of the remedy (such as an institutional control to achieve the site-specific standard by restricting use of the groundwater) and would not commonly be used if a municipal ordinance is in place. However, Section 304(m) of Act 2 requires that whenever a remediation attains the site-specific standard, the deed acknowledgment requirements of the Solid Waste Management Act and HSCA apply. This acknowledgment consists of a notice to subsequent owners that the property has regulated substances that exceed the residential Statewide health standard remaining after the remediation. This notice is to include whether residential or nonresidential exposure factors were used to comply with the site-specific standard. The only exception to this is that in the case of federally regulated tanks, no deed notice is required.

Regulations:

References:

ID# 215

Category: Deed Notices

Question: This question is relative to Section 250.702(b)(4). We have a large former industrial site that is going to be developed into a strip mall. The consultant has been working on the site characterization for over a year. His plan was to use site-specific for soils, and SHS for GW. He has put in about 20 wells, many of which are property boundary wells. Based on between 4-5 quarters of GW



monitoring (some wells were added later and have one less quarter of data), none of the wells has had any SHS exceedances.

Here's the question. There is an area of SPL within the middle of the relatively large site. Some product removal has been completed (55 gals recovered) but will need to cease soon due to site construction activities. The impacted area has been pretty well delineated and seems confined to the center of the site. So far, we don't anticipate that it will extend beyond where it's apparently been for some time, based on the age of the site. We plan to ask for some postremediation care to ensure that the SPL isn't going to migrate off-site.

The question is with the POC. Is the POC just the property boundary? Can the consultant seek and get SHS liability relief even if SPL is present, as long as it doesn't migrate off site? (That's my understanding.) Section 2540.702(b)(4) says that "...if SPL is present, attainment at the POC shall also be demonstrated within the soil and groundwater directly impacted by separate phase liquids." Does this mean there is a new POC within the interior of this site, which is the only place where the GW is directly impacted by the SPL? Based on the data we have so far, the property boundary POC wells are not showing any signs of direct impact by the SPL.

Can the consultant just finish out the remainder of his sampling (to get 8 quarters) at the property boundary wells, propose some postremediation care for those wells to be used to evaluate the SPL migration in the future, drop sampling from the rest of the wells not having anything to do with the SPL, and get final report approval?

Response: The POC for the Statewide health standard has not changed – your understanding is correct. Attainment is demonstrated only in the POC wells. If there is SPL in the attainment samples from the POC wells, then attainment of the Statewide health standard cannot be demonstrated. SPL may still remain in the interior of a property as long as the fate and transport analysis shows that it will not migrate to the POC, or if it does, there must be a postremediation care plan to assure that the standard is maintained into the future at the POC. This section has not changed from the original regulations. What has changed is that, by policy, when SPL is present in the POC attainment wells, the Statewide health standard is no available. This was included in the final TGM at Section I.D.8.c.2. At sites where SPL remains within the interior of a property, remediators should document that presence in the deed to the property voluntarily (although this is not required by law under a Statewide health standard residential cleanup).

Regulations:

References:

ID# 51

Category: Ecological Evaluation

Question: Are the eco-receptors identified in 250.311(a) the only receptors that an ecological risk assessment must consider?

Response: Yes. These are also the receptors that must be considered when conducting a site-specific ecological risk assessment.

Regulations:

References:

ID# 52

Category: Ecological Evaluation

Question: If an ecosystem is impacted by LNAPL, what assessment process should you follow under the Statewide health standard?

Response: The ecoscreen must be followed in the same manner as for any other site. Impacts resulting from the LNAPL will most likely show up, if they are present at all, in Step 5 (if no CPECs have been identified) or in Step 6 (if CPECs are present). In fact, Step 5 was inserted into the process specifically to identify impacts from non-CPEC compounds (like petroleum hydrocarbons) that may be present on a site.

Remember that if separate phase liquids are present, under the Statewide health standard, attainment must be demonstrated at the point of compliance in the soil and groundwater directly affected by the separate phase liquid.

Regulations:

References:

ID# 53

Category: Ecological Evaluation

Question: When addressing a site to a combination of standards such as Statewide health and site-specific, can the ecological screening process be used? Do you only have to do an ecological risk assessment for media being addressed under the site-specific standard?

Response: When combining standards, a remediator is required to meet the requirements of each of the standards for the site, media, or substance, as appropriate. With respect to application of this rule to ecological assessment under a combination of standards (Statewide health and site-specific) for soil and groundwater respectively, the Statewide health ecoscreen is required AND the site-specific ecological assessment is required for eco exposure to the groundwater. Basically, any time one is applying the Statewide health ecoscreen is required. What needs to be stressed however is that any time that the site-specific standard is being applied, the site-specific ecological risk assessment procedures apply to the media or substances being addressed under the site-specific standard.

Regulations: 250.311

References: TGM Sec IV.H

ID# 54

Category: Ecological Evaluation

Question: Why is the ecoscreen applicable only to the Statewide health standard, and not the site-specific standard?

Response: The screen assumes that the Statewide health standard has been met, and the protectiveness of that standard is an inherent assumption in the first three criteria for determining if the screen must proceed to the onsite evaluation stage. If a site is remediated to a higher site-specific standard, this protectiveness cannot be assured to allow a site to drop out of the process. For sites remediated under the site-specific standard, the consideration of ecological receptors is performed using guidance developed by EPA or other sources as described in the TGM, Section IV.H.

Regulations:

References:

ID# 248

Category: Ecological Evaluation

Question: Can you direct me to the cleanup standards for sediments? If I collect samples in a river bottom, what criteria must the results meet? Is it the Ontario SEL #s? Do I use the “soil standards”?

Response: The Land Recycling Program has not established numeric cleanup standards for sediments. For remediations being accomplished under the Statewide health standard, sediments are addressed through the application of the ecological screening process described in Section 250.311 of the regulations. The numeric soil standards published in the regulations cannot be used for sediments, as the exposure assumptions used to develop those values are not applicable to sediments. For remediations under the Site-specific standard, the ecological risk assessment process is used to demonstrate attainment for sediments. Guidance for conducting ecological risk assessments may be found in the Technical Guidance Manual, Section IV.H, which may be found on the web at <http://www/depweb.state.pa.us/landrecwaste/cwp/view.asp?A=1243&Q=465356>. A remediator may also propose to use the background standard for sediments. In this case the demonstration of background attainment is as described in Subchapter B of the Chapter 250 regulations, and in Section 250.707(a).

Regulations:

References:

ID# 55

Category: Fate and Transport

Question: On the Department’s Quick Domenico model, the recommended vertical dispersivity default value is <0.001 ft. Why is this coefficient so small?

Also, please describe the source width and thickness inputs to the model. Is this intended to be the assumed area of groundwater contamination and therefore should not include unsaturated impacted soil?

Response: A value of 0.001 is a recommended value for “initial uncalibrated” or conceptual applications. Use of a low vertical dispersivity such as 0.001 results in a higher calculated projected concentration at the water table surface at any distance from

the source. Therefore, a low vertical dispersivity is consistent with conservative use of the model for “worst case” predictions and as a screening tool when hard data on the vertical concentration profile is ambiguous or lacking, as sometimes occurs.

The documentation does not intend to restrict the Az term to 0.001 or its use as a calibration term. Any vertical dispersivity >0 can be used in QD, and a value other than 0.001 may be necessary and justified for calibration purposes, but, values in excess of 0.001 should be justified by monitoring data.

Regarding the source thickness – typically, for floating contaminants, this is the thickness of contaminated soils that contribute contamination to the water table plus the water table fluctuation that creates a smear zone.

Regulations:

References:

ID# 57

Category: Fate and Transport

Question: When modeling groundwater at a site for fate & transport of contaminants and you have several years of data from several wells and you have decreasing trends, what value should you input into the model as the “initial” concentrations?

Response: The initial concentrations to model future transport should be based on actual monitoring data that are consistent with current and future site conditions. If several years of data that the Department considers to be valid are available, then the “initial” concentrations and  $t=0$  could be taken from the beginning of the sample data and the fate and transport analysis compared to the actual data. If a pump and treat system will be in place, that should be considered in the evaluation, and therefore the initial concentration input into the model will be less than if the pump and treat system was not started. Note the gradient and flow would also be different. Conversely, if a pump and treat system will be turned off, this factor also should be considered.

Regulations: 250.604

References:

ID# 173

Category: Fill Management

Question: Under the Fill Management Policy, what are the testing requirements for fill? Do we have to test for everything?

Response: It will depend on the environmental due diligence and source(s) of spills/releases identified by due diligence procedures. Testing is based on the knowledge of the chemicals used on the site resulting from the environmental due diligence.

Regulations:

References:

ID# 174

Category: Fill Management

Question: Under the Fill Management Policy, does the clean fill policy apply to both active and abandoned mines?

Response: The policy does not apply to fill being placed in active or abandoned mines unless the activity is permitted or approved by the Department as part of a facility specific reclamation project.

Regulations:

References:

ID# 175

Category: Fill Management

Question: Under the Fill Management Policy, if fill material is excavated within a right-of-way, can the material be put back into the right-of-way? What if the concentrations exceed the clean fill values?

Response: According to the Management of Fill policy, excavated material can be put back into a right-of-way without a permit. This provision applies to material that qualifies as regulated fill. Placement of clean fill by definition does not require a permit. Material that exceeds the values in Table GP-1 for regulated fill must be managed as waste under a permit.

Regulations:

References:

ID# 176

Category: Fill Management

Question: Under the Fill Management Policy, if the site that is the source of regulated fill is not an Zct 2 site and the receiving site is, is a General Permit required?

Response: Yes.

Regulations:

References:

ID# 177

Category: Fill Management

Question: Under the Fill Management Policy, how is background defined? After fill is placed, can the level of regulated substances in it be used as the background level for future fill placements?

Response: The background provision of Condition 7 applies to the substances on Table GP-1b (inorganic substances). Background is the concentration of a substance present on a site before beneficial use activities occur under the general permit. This is intended to be the concentration before any placement of fill has occurred. Credit cannot be taken for concentrations in any fill that has previously been placed under the general permit. For any fill placement, either the first time or multiple times at a receiving site, either the higher of the values in Table GP-1 or the receiving site background will be the ceiling concentration.

Regulations:

References:

ID# 178

Category: Fill Management

Question: Under the Fill Management Policy, how is this situation handled? In constructing a new highway, is PADOT required to test for all regulated substances on an agricultural area where pesticides and/or herbicides were used, or is testing only required if there is a known spill of pesticides and/or herbicides.

Response: PADOT could just do screening rather than full blown testing in areas that are not known to be subject to a spill or release unless the results indicate that more in-depth testing is needed.

Regulations:

References:

ID# 179

Category: Fill Management

Question: Under the Fill Management Policy, can discretion be used in the sampling protocol, for example 12 samples per 3,000 yd<sup>3</sup> of material? Can a determination be made in a lesser number of samples?

Response: One can use the procedure in Appendix A(d) which refers to 250.707(e). Also, when the contamination in the material is known to be fairly uniform and without "hotspots" (from existing data, records, etc.), then fewer samples may help confirm the already recorded contamination levels. In order to reduce the



sampling frequency required by Appendix A, one should be able to demonstrate that contamination is uniform in that pile or at that location.

Regulations:

References:

ID# 180

Category: Fill Management

Question: Under the Fill Management Policy General Permit, is the registration applied to the source, the destination, or both?

Response: The registration applies to both. The registration process requires that the applicant identify the receiving property where the material will be used as construction material. An application for registration may include one or more sources of fill material. As stated in Condition 26, a registration is required for each location of beneficial use. A registration will be required for each new site where fill will be beneficially used. If one applies for more than one receiving site, a separate registration may be received for each receiving site in that group. Furthermore, an applicant must indicate in the application where all of the regulated fill will be coming from and can include more than one fill generating location. (See 26(b)). If a new fill generating location is to be added to an existing registration for a receiving site, the permittee must follow Condition 28 and submit information required in subparts (a) – (f) of Condition 26.

Regulations:

References:

ID# 181

Category: Fill Management

Question: Under the Fill Management Policy, if a property receives regulated fill from multiple sources, are multiple deed notices required?

Response: The deed notice requirements are that the exact location and the chemical composition of the fill be noticed in the deed. If fill from multiple sources is placed at different locations on a property, all locations must be identified. If fill from multiple sources is placed at one location at a receiving site, all of the fills

with their chemical analyses must be included in the deed notice as well as each fill's exact location in that receiving site. If placement occurs over a period of time, this may require multiple deed notices for a property.

Regulations:

References:

ID# 182

Category: Fill Management

Question: Under the Fill Management Policy, if a site is receiving regulated fill from three sites, are registrations required for each source?

Response: If the three sources of fill are already listed in the original registration application for a site where the fill is to be used beneficially, then only one registration is required, per Condition 26(b). If all three sources are not included in the original registration, then the information required in Condition 26(a) – (f) should be submitted for each new source of fill for that site, and the new fill sources should be included in the existing registration, per Condition 28.

Regulations:

References:

ID# 183

Category: Fill Management

Question: Under the Fill Management Policy, is a broker of waste required to obtain a permit for the use of fill when a receiving site is found?

Response: If the receiving site is already registered under this general permit, then this would be a new source of fill that needs to be registered under Condition 28. If the receiving site is not registered, the broker or site owner can apply for registration under this general permit.

Regulations:

References:

ID# 184

Category: Fill Management

Question: Is regulated fill a waste that is subject to the storage and transportation requirements of the municipal and residual waste regulations?

Response: Yes.

Regulations:

References:

ID# 185

Category: Fill Management

Question: If regulated fill is going into a large quarry, how many certifications and deed notices are required?

Response: A quarry, which is an open pit, cannot be filled using this general permit, which is issued under the authority of the residual waste regulations. Section 287.611(e)(3) of these regulations states that a general permit will not be issued for the “use of residual waste to fill open pits from coal or noncoal mining except for coal ash mixed with residual waste...” Also, this general permit requires the material to be used as construction material and in connection with an approved construction project. Quarry reclamation does not fit that activity. Furthermore, the definition of “construction material” in the residual waste regulations does not include valley fills or the use of residual waste to fill open pits from coal or other mining.

Regulated fill may be placed on previously reclaimed mine lands in association with an approved construction project, subject to the requirements of the general permit, including the prohibition on placing regulated fill into waters of the Commonwealth.

Regulations:

References:

ID# 186  
Category: Fill Management  
Question: Under the Fill Management Policy, if clean fill is used as cover in a landfill, is the clean fill considered a waste that is subject to fees?  
Response: No, fill material is not a waste if it meets the requirements for clean fill under the policy. Fees are not required in this case.  
Regulations:  
References:

ID# 187  
Category: Fill Management  
Question: Under the Fill Management Policy, if the clean fill status of material that is coming into PA from NJ is questionable, may the regional office staff required testing?  
Response: DEP staff can request additional sampling if there is reason to believe that the material does not qualify as clean fill.  
Regulations:  
References:

ID# 188  
Category: Fill Management  
Question: Can the clean fill certification form that is provided to the owner of the receiving property also be required to be given to the Department?  
Response: No. However, the Department may request this information if it receives complaints regarding the placement of the fill.  
Regulations:  
References:

ID# 225

Category: Fill Management

Question: Can one sample and analyze material that is to be excavated in place prior to generating a stockpile of fill using the sampling procedures described in Appendix A to make a fill determination? It would typically save several months of time to do this prior to start of a construction project in an area where due diligence indicates a release has or may have occurred and provide useful information on potential quantities of fill types.

Response: Material that is proposed to be used as either clean or regulated fill must be sampled in place before excavation using the protocols in Appendix A to the Management of Fill policy. The Department considers excavation and stockpiling prior to sampling to be blending or mixing in order to achieve the fill limits.

Regulations:

References:

ID# 226

Category: Fill Management

Question: The Application for Regulated Fill General Permit under item #10 requires a recorded deed notice to be submitted with the application – what if an owner records this notice and the Department denies the application? Shouldn't this be a requirement upon approval of the application?

Response: Evidence of the recording of a deed notice is required to be submitted with the permit application. If the Department denies the application, the deed notice may be removed.

Regulations:

References:

ID# 230

Category: Fill Management

Question: Are asphalt shingles which are buried in the ground and used to bring an area to grade (time of disposal still unknown at this time) considered historic fill? Clean fill? Regulated fill? If so, what would the responsible party have to do to be allowed for this material to remain in place?

Response: Asphalt shingles would be considered historic fill if they were placed prior to 1988 (see definition of historic fill in the Management of Fill policy). Historic fill cannot be clean fill, but may meet the definition of regulated fill.

If the material was to remain in place, the requirements of Act 2 rather than the fill policy would apply. According to Section III.A.1 of the Technical Guidance Manual, the material is to be closed in place under the appropriate residual waste regulations by using pathway elimination under the site-specific standard for the non-media solids on the ground and any one or a combination of Act 2 standards for soils and groundwater outside the perimeter of the closure area.

Regulations:

References:

ID# 235

Category: Fill Management

Question: I have a general question regarding analytical requirements for clean fill. I understand that analysis is not mandated and that you can use reasonable due diligence. If under your investigation you can determine that certain substances that are listed on FP-1A are not present but can not eliminate the entire list, are you still required to analyze for the entire parameter list?

A potential client of ours is trying to certify a soil pile as clean fill. They asked someone at the local DEP office whether they could use their knowledge of what was known or suspected to be present to determine what compounds would be required for organic analyses. The response they forwarded to us from the DEP representative was that analyses were required then you need to analyze for everything. It doesn't make sense to me that you can not eliminate some of the parameters by investigation. If that's the case, what is the value of the due diligence?

We want to try to provide the appropriate level of analyses but certainly do not want to blow their budget by analyzing for more than would be required.

Response: The requirement for testing of material proposed for use as clean fill is based upon a person's knowledge of the material. If, through the due diligence process, the person has knowledge of the history of the material so that the identity of those regulated substances that are reasonable expected to be present in the material is known, then testing is required only for those substances. The only instance where a more complete scan for substances might be necessary is if the history and nature of the material are completely unknown.

Regulations:

References:

ID# 241

Category: Fill Management

Question: In characterizing fill to determine if it is regulated or unregulated under the Management of Fill policy, what analytical lists are acceptable to the DEP? Would PPL suffice, or would TCL be necessary? Also, if my fill material qualifies by definition as "historic fill," do I characterize/treat it any differently than material that is not historic fill?

Response: The environmental due diligence will tell you which substances to test for in making a clean fill determination. The past use of the property will in most cases determine the substances of concern.

Historic fill may only qualify as regulated fill, not as clean fill, and is subject to the same requirements as all other types of regulated fill. As always, obtaining representative samples is of primary concern, which may be more difficult given the non-homogeneous nature of many historic fills.

Regulations:

References:

ID# 63

Category: General

Question: I'm a bit confused over the Hazardous Sites Cleanup Act. Wouldn't all brownfield sites (that require cleanup) have hazardous substances present anyway, so they would all end up falling under the HSCA? Is the difference between voluntary cleanup and Hazardous Sites Cleanup that one is considered involuntary (the latter)? In short, my main question would be: why do we need the HSCA when we have Act 2,3,4, and 6 of the Land Recycling Program?

Response: The Hazardous Sites Cleanup Act (Act 1988-108) meant to provide authority for the DEP to act on sites that present significant threats to human health and the environment (not all contaminated sites meet this criteria). Our authority to act includes enforcement authorities and also authority to hire our own contractors to do the environmental study and cleanup (and then bill the responsible party). This program is still active.

The Land Recycling and Environmental Remediation Standards Act (Act 1995-2), was meant to establish environmental cleanup standards to be used to remediate (whether it is done voluntary or by DEP enforcement order or by HSCA) sites that are regulated under a myriad of other statutes. [for example the clean streams law gives the DEP authority to fine and/or issue orders to persons who pollute any waters of the commonwealth, including groundwater – but it does not in itself provide the cleanup standards]. Further, Act 2 was meant to provide a process under which any person could obtain liability relief from ever having to do more cleanup in the future (except for some re-openers in Act 2, Section 505) either because the DEP wanted it, or because citizens sued for more cleanup. This process is commonly referred to as the Voluntary Cleanup Program. It incorporates the environmental standards mandated by Act 2 and promulgated in regulation (Chapter 250), and an administrative process for what papers to send in and notices to send to municipalities and newspapers. Any environmental cleanup outside the voluntary process would still use the environmental standards mandated by Act 2. Therefore, all cleanup uses those standards.

In summary:

Voluntary cleanups use Act 2 standards and process with any contaminated site being eligible.

Enforcement ordered cleanups use Act 2 standards and part of the Act 2 process (public notices) and in addition other requirements which are listed in the



enforcement order (these would be specific to the site such as schedules for work to be done).

Regulations:

References: Act 2 Section 505

ID# 65

Category: General

Question: Can a person be required to perform a site remediation under Act 2? If not what programs are in place to require a site remediation under an enforcement action?

Response: Act 2 does not required remediation, but rather provides the standards and process by which remediation (with liability relief) is completed.

The enforcement authority for requiring remediation is mainly in the PA Clean Streams Law (CSL) and the Hazardous Sites Cleanup Act (HSCA). The CSL references releases of contaminants to the “waters of the Commonwealth”. This includes groundwater, and soils as they affect groundwater.

So the process in place basically allows, on a voluntary basis, for a remediator to enter the voluntary cleanup program. However, individual DEP regional offices may exercise enforcement authority-requiring cleanup – under the CSL or HSCA. This is generally only done if there is evidence of a significant threat to human health or the environment (e.g. someone’s well is contaminated, there are identifiable impacts to surface water, illegal hazardous waste disposal has occurred on the site). The cleanup standards that apply when enforcement authority is used are the Act 2 remediation standards.

Regulations:

References:

ID# 84

Category: General

Question: Does liability relief apply to all areas of a site that have been characterized, or just to those areas where attainment has been demonstrated?

Response: The remediator of the source property will receive liability relief for all areas of contamination that have been characterized and, where necessary, remediated, which are identified in your final report, whether or not the site characterization showed that they exceeded the selected standard. Since the demonstration of attainment only applies to that volume of soil identified as exceeding the selected standard, areas which are contaminated at levels below the standard need no attainment demonstration, but since the characterization shows that the standard is not exceeded, the liability relief applies. The key to liability relief lies in identifying the areas of concern and the contaminants involved in the final report submitted to the Department. Further, that liability relief applies only to the areas characterized and to the specific contaminants identified in the report.

Regulations:

References:

ID# 249

Category: General

Question: Can ASTM, EPA, or other environmental science training classes be used to fulfill the Land Recycling Program training required to participate in the Low Risk management practice?

Response: The Low Risk management practice developed by the Department as part of the 2004 Enhancements Report created a process whereby simple low risk sites could receive an expedited review and approval from the Department. There were a number of conditions and limitations set forth in the Low Risk procedure including a requirement for training. The Enhancements Report states that a consultant preparing the final report for a Low Risk project “must have attended a Land Recycling Program client workshop within the last 2 years.” The intent of the training requirement is to assure that the consultants have a specific understanding of the assessment, remediation, and attainment requirements pursuant to the Land Recycling Act, the associated regulations, and the technical guidance. Therefore, training applicable to the Low Risk training requirement is limited to approved training classes conducted by the Land Recycling Program.

Regulations:

References:

ID# 85  
Category: Institutional Controls  
Question: If an institutional control exists, such as a municipal ordinance prohibiting groundwater wells for drinking, is it a requirement that deed restrictions (another institutional control) be utilized on all properties throughout the plume?  
Response: No. Any combination of remedial measures that attain a standard is acceptable. Deed restrictions (not to be confused with deed acknowledgements under HSCA and the SWMA) can be used at the discretion of the remediator as one of the options for attaining a standard.  
Regulations:  
References: Act 2, subsection 304(i); TGM section II.C.2.b.iv; TGM section II.C.4; TGM section II.C.9

ID# 37  
Category: Laboratory Certification  
Question: If a person is conducting field laboratory measurements that are not required by the DEP, is that person required to be registered?  
Response: No. The Environmental Laboratory Accreditation Act provides that if a facility is engaged in the testing and analysis of an environmental sample that is required because of an environmental statute administered by the DEP, that facility must register with the DEP to continue testing and analysis. The key is that the testing or analysis must be required by an environmental statute. Field measurements that are required by an environmental statute would be included. Sampling activities are not covered by the Act.

Many field measurements are not required to be performed by a person registered under the Act. For example, if field measurement/testing is used to determine where to place a well screen or where to take a sample AND that field measurement/testing is not required by the DEP per regulation or statute, then that activity is not covered under the Act. The sample itself, collected as a result of the above field measurements, would then be analyzed by a lab that must be registered under the Act.

Regulations:

References:

ID# 27

Category: Liability Relief

Question: Can persons get liability relief for areas that they characterize and/or for substances that they characterize where concentrations of regulated substances are above the PQL but below the Statewide health MSC?

Response: Yes. They get liability relief for these substances and the area characterized in the final report, even where the concentration of those substances are below the Statewide health standard. This inherently gives the remediator the motivation to do a more complete site characterization to levels below the selected standard. The qualifier for entering the program is that there is evidence that there has been an environmental release – either by sample results or by historical record OR the standard to be attained is the background standard.

Regulations:

References: Act 2 Section 501 (a)

ID# 45

Category: Liability Relief

Question: Do other property owners qualify for an Act 2 Release of Liability if the remediator attains an Act 2 standard on its property as well as these other properties impacted by a release identified in the Final report?

Response: Yes. The scope of the liability protection afforded by Act 2 is set forth in Section 501 (see below). If the property is identified in the final report and the report is approved by the Department, then pursuant to Section 501(a)(1), the owner qualifies for the liability protection afforded by Act 2.

Regulations:

References: Act 2, Section 501

ID# 206

Category: Liability Relief

Question: I am currently working on a site with numerous areas of concern (AOCs), all of which have some contamination. Since we are dealing with manmade compounds, presence of any level generally implies contamination. We have generally been delineating these AOCs to at least below the nonresidential Statewide health standards (NRSHS). About half the AOCs (sites) have some data which exceeds the NRSHS, and the other half of the AOCs have contamination, but no exceedances of the NRSHS. We will likely seek to obtain liability protection to the NRSHS. I have 2 questions.

For the AOCs where we have some exceedances, we will likely perform some partial removal to remove the exceedance and demonstrate attainment. Since we characterized more area of each AOC than we would remediate, will we receive liability protection for the area we characterized?

For the AOCs where we have contamination but no exceedances, we would not plan to perform any removal or other remediation. Will we receive liability protection for the area we characterized since contamination was documented (even though it was below the NRSHS)?

Response: You will receive liability relief for all areas of contamination that have been characterized and, where necessary, remediated which are identified in your final report. Since the demonstration of attainment only applies to that volume of soil identified as exceeding the selected standard, areas which are contaminated at levels below the standard need no attainment demonstration, but since the characterization shows that the standard is not exceeded the liability relief applies. The key to liability relief lies in identifying the areas of concern and the contaminants involved in the final report submitted to the Department. Further, that liability relief applies only to the areas characterized and to the specific contaminants identified in the report.

Regulations:

References:

ID# 246

Category: Liability Relief

Question: If a contaminant plume migrates offsite and impacts a downgradient property, the property qualifies for a release of liability if mentioned in an approved final report. Does the "site" owner have to name the downgradient property? If the "site" owner refuses, can the downgradient property owner obtain a release of liability using the background standard?

Response: The intent of the statute is to automatically include owners of the “site” that is compliant with the Act. Since plumes can go off the source property yet still be part of the “site”, those properties should by logic be eligible for liability protection. To be clear, Section 501 (a) relating to Cleanup Liability Protection, says that the protection extends to [among other], “the current or future owner of the identified property...” Therefore, preparation of the final report should provide for identifying properties (such as through boundary maps with plumes overlain) if the intent is to provide the greatest liability coverage. Further, it is advisable to list the names of the owners, but in you example the site owner does not want to do that. The situation is that as long as the property is identified (and that could be by showing relative property boundaries), the properties should fall under Section 501(a).

The second question you had is whether the downgradient property owner could use the background standard to obtain liability protection. The answer there is yes, but it may not be necessary based on the above paragraph.

Regulations:

References:

ID# 216

Category: NIR Submittal

Question: I have a question in regard to standards chosen on the NIR and later submittal of the final report where demonstration has shown attainment of a more stringent standard. It seems that in 301(b) of Act 2 it can be interpreted to mean that if you went through the procedures for a site-specific standard, you can “default” back to background or Statewide health if you demonstrate their requirements.

What about the case of an NIR that is submitted for the nonresidential Statewide health standard (soils in this case) – my understanding is if they demonstrate attainment of the residential standard (and in many cases the residential and nonresidential standard are the same – especially for petroleum related compounds) then they achieve a SHS residential closure and wouldn’t need to do a deed acknowledgement. The consultant I am working with is still thinking they need to resubmit the NIR to reflect this change (NR to R). If anything, they can rewrite their summary to indicate they meet residential standards...but would anything else be required?

Response: Going from nonresidential Statewide health to residential Statewide health would not require a new NIR. The standard under which they are demonstrating attainment would, of course, need to be defined in the final report and final report summary.

Regulations:

References:

ID# 32

Category: Notification

Question: If a person is voluntarily cleaning up a site and does not go through the LRP, under what circumstances are they obligated to notice the DEP of the contaminated site? Specifically, if GW or surface water is not contaminated (soil contamination only).

Response: Reference to Section 91.33, related to threats to waters of the Commonwealth. Generally, DEP considers any release to soil as potential release to waters of the Commonwealth.

Regulations:

References: 91.33

ID# 228

Category: Notification

Question: I understand that if the cleanup is completed within 90 days of the release, public notification is not required. Is the 90 days from the time of the release or from the time the release is discovered? For example, I am removing a heating oil tank and I discover a release (corrosion holes) during closure activities. If I complete the cleanup and submit the final report within 90 days do I have to do public notification even though I do not know how long the tank has leaked?

Response: This section applies to remediations under the background or Statewide health standards, and it is from the time of the release.

Regulations:

References:

ID# 42

Category: Pathway Elimination

Question: My metals finishing plant is located in a major city with public water provided throughout the city and had a spill that has contaminated groundwater off the property. I plan to propose using the site-specific pathway elimination standard for groundwater to demonstrate that no complete pathways exist for groundwater ingestion. Are deed restrictions (for groundwater use) required from each owner of the properties down gradient from my property?

Response: No. Other options available under the site specific pathway elimination standard for use as an engineering or institutional control as a post remedial measure include a municipal ordinance prohibiting groundwater use for drinking water or notices to the down gradient property owners combined with periodic review of DEP well drilling licenses to assure no wells have been drilled in the area, review of public water billing records to assure that properties are still being billed for public water, or results of a letter or door-to-door survey of the property owners or other activities which can provide assurance the remedy is still effective. These options are also available for sites attaining nonuse aquifer MSCs under the Statewide health standard.

Regulations:

References:

ID# 234

Category: Pathway Elimination

Question: Scenario: Someone is chasing lead contamination in soil, and it does beneath the ballast on a railroad track. The ballast is 2 ft thick.

Questions:

1. Does DEP consider the ballast the 0-2 ft part of the soil profile?
2. Would samples collected beneath the ballast be considered the 2-15 ft section of subsurface soil?
3. Would DEP accept the ballast sufficient for pathway elimination?

Response: Since the contaminant is lead, the answers to your questions became fairly simple. The basic question was what standard applies to this situation. In the case of lead, the nonresidential direct contact numeric values are 1,000 mg/kg for the 0-2 ft



interval and 190,000 for the 2-15 ft interval. However, the soil-to-groundwater value of 450 trumps both of these values and the Statewide health standard MSC for lead is 450 mg/kg throughout the soil column. This would also be true for any substance where the soil-to-groundwater value is less than the direct contact value.

More generally, we would not consider ballast to be the 0-2 ft soil interval because it is not soil. The ballast would not be a sufficient pathway elimination measure because it would not eliminate all exposure pathways. It would only eliminate the ingestion pathway, but would still allow for leaching from soil to groundwater and also inhalation for volatile regulated substances. The question of how to handle samples collected from below the ballast could have several possible solutions depending on the specific regulated substances involved and could probably best be handled on a case by case basis in consultation with your regional office case manager.

Regulations:

References:

ID# 56

Category: Postremediation Care

Question: How does one apply the requirement for Fate and Transport analysis (in a postremediation care plan) in cases where natural attenuation is used to achieve the standard at some point before the POC? What factors or requirements must be considered?

Response: The fate and transport analysis must show that the selected standards have been attained and will be continuously attained. The fate and transport analysis must comply with EPA or ASTM QA/AC requirements. A postremediation monitoring program must be established to confirm the success of natural attenuation. Factors to be considered may include:

- Is a receptor impacted?
- Has the source been removed?
- Is the plume expanding and will it extend beyond the POC?
- Is the amount and rate of attenuation sufficient?
- Is site characterization comprehensive enough to support a natural attenuation decision?

Regulations:

References:

ID# 44

Category: Program Management

Question: I have a dispute with regional program staff regarding an Act 2 required report currently under review. I believe the regional office review is not consistent with the Act 2 regulations or the TGM. The deemed approved review period is coming to a close and the regional office is now telling me that my report is not acceptable and will be disapproved. Do I have any recourse before the regional office takes a final action on the Act 2 report?

Response: Yes. Remediators identified in the NIR who believe that impending regional decisions on a required Act 2 report are inconsistent with the Act 2 regulations or the TGM may elevate the issue to an Issue Review Panel. This panel will meet on an as-needed basis and its decisions will apply to the regional office. Disputes to be reviewed by the Issue Review Panel may be directed to Tom Fidler, Chief of the Land Recycling and Cleanup Program ([tfidler@state.pa.us](mailto:tfidler@state.pa.us)) located in our Central Office, Harrisburg, Pa.

Regulations:

References:

ID# 121

Category: Remediation

Question: What are the DEP requirements for insitu treatment or exsitu with re-injection of treated groundwater?

Response: The Department's web page describing the requirements and procedures for obtaining an EPA Rule Authorization Letter for a Class V well used to inject remediation materials into groundwater is complete.

To see or direct outside people to this web page go to the SUBJECTS page of our external homepage, then scroll down to subjects under U and click Underground Injection Control Requirements For Remediation Wells.

Regulations:

References:

ID# 39  
Category: Risk Assessment  
Question: Do we consider the effects of a proposed remediation measure in the baseline risk assessment?  
Response: If a remediation measure other than pathway elimination is proposed, a risk assessment report to develop site-specific cleanup standards should be submitted to the Department for approval. If there is a complete pathway, then the remedial investigation can be combined with a simplified risk assessment documenting the current and potential future complete exposure pathways and how the proposed pathway elimination measure will be effective – but this simplified risk assessment is technically not a baseline risk assessment. Baseline risk assessment only evaluates the current and potential future risks without considering the effects of any proposed remediation measures. If a remediation measure is proposed to address risk, no baseline risk assessment is required, under Section 250.405(c) of the regulations.

Regulations: 250.405

References:

ID# 238  
Category: Risk Assessment  
Question: I have a question regarding exposure assumptions for a trespasser. The Act 2 regulations state that exposure factors must be justified by supporting data. What would you recommend for default exposure assumption for a trespasser scenario on an industrial facility?

Response: EPA Region 4 has the following guidance on the trespasser scenario: Region 4 considers the typical trespasser to be an adolescent aged 7-16 (10 year exposure duration) with a body weight of 45 kg as representative of this age range. Trespasser exposure frequency should consider site-specific factors such as distance from the site to residences and the attractiveness of the site to the trespasser.  
Exposure frequencies in risk assessment reports may be as low as 24 events/yr or as high as 100 events/yr. An example to specify the exposure frequency may be like this: 65 events/year exposure frequency, assuming exposure by an individual

trespasser 3 times per week during summer months, once per week during spring and fall months, and no exposure during the winter.

Regulations:

References:

ID# 58

Category: Sample Analyses

Question: What course of action do laboratories have when they cannot achieve the MCLs in samples from a site remediation? The drinking water methods and their detection limits are for very clean drinking water samples. Act 2 allow levels of “light hydrocarbons” to be present; however, these types of interferents prevent labs from reaching the PQLs that are based on MCLs. Also, do you expect labs to perform all of the tests specified (used to derive PQLs, MSC, etc) to reach every Act 2 limit? This seems cost prohibitive.

Any guidance you can provide would be helpful. Consultants expect to get data that achieves all Act 2 limits and they are not interested in hearing lab limitations.

This type of pressure could result in some labs reporting detection limits that are not actually achieved (bordering on fraud) and jeopardizing cleanup efforts/liabilities.

Response: The list of PQLs in Seciton IV.F of the Technical Guidance Manual makes reference to particular analytical methodologies solely for the purpose of establishing the PQL for each regulated substance. Section 250.4(f) of the regulations allows a laboratory to use any valid and generally accepted methodology for analyzing samples of environmental media. In demonstrating attainment of any standard, the concentration of a regulated substance need not be less than the PQL for that substance. This means that for those substances where the MSC is less than the PQL, attainment may be demonstrated if the substance is reported as “non-detect” at the level of the PQL. Section 301(c) of Act 2 specifically prohibits the Department from establishing alternative ways to demonstrate attainment for substances where maximum contaminant levels and health advisories have already been established. This means that is an analytical methodology cannot achieve the PQL, and that PQL is equivalent to the MCL, then attainment of that substance cannot be demonstrated. The laboratory is always free to choose another valid methodology that sill achieve that PQL.

The alternative methods for establishing a PQL listed in Section 250.4 of the regulations only apply when no PQL is listed in the tables in the Technical Guidance Manual. The Department does not expect a laboratory to go through these exercises unless a PQL has not been established.

Regulations: 250.4(f)

References: Act 2 Section 301 (c)

ID# 59

Category: Sampling

Question: We allow composite samples for inorganics (in this case, metals) under Act 2, don't we? I could swear that I read somewhere in the regs or the TGM something to the effect that "compositing is not allowed for organics" which kind of meant to me that compositing is allowed for inorganics. But now I can't put my finger on the reference I'm thinking of.

Response: Yes. We allow composite samples for inorganics (in this case, metals) under Act 2 under the conditions that nonparametric methods and 75%/10X rule are not used.

Regulations: 250.707(b)(1)(i), 250.707(d)(2)(iii)

References:

ID# 214

Category: Sampling

Question: Please respond to following issues:

1. Is there a particular NIOSH method you can recommend to sample naphthalene from a soil boring?
2. Is it acceptable to modify these industrial hygiene (IH) methods if necessary?

Example: Is it acceptable to shorten the method specified sample volume or time providing the laboratory detection limits are below regulatory limits?

The dilemma I'm facing is that I need to sample soil borings for naphthalene. NIOSH 5515 specifies 200-1000 liter samples at a rate of 2 liters per minute

(LPM). The laboratory informs me that they need a 3 liter sample to meet the regulatory limit of 0.42 mg/m<sup>3</sup> (naphthalene is oil gas, residential). Is the following modification acceptable?

Sample the soil gas for naphthalene using NIOSH 5515 specified sample media at a rate of 2 LPM for 3 minutes for a sample volume of 6 liters. The 6 liter sample is more than sufficient to achieve the necessary detection limits.

The concern about following the NIOSH 5515 specifications is both the required time (100 minutes per boring) and the limitation of the boring volumes (it may not be possible to pull 200 liters of air from a boring without sampling ambient air).

Response: It is acceptable to modify these industrial hygiene (IH) methods if necessary. The sampling rate of 2 LPM and the total volume of 200-1000 liter samples specified in the NIOSH Method 5515 are not appropriate for soil gas sampling. We would suggest a sampling rate of 30 to 200 mL per minute (depending on the soil characteristics) for a sample volume of 6 liters, provided that the laboratory detection limits are below regulatory limits, and the filter recovery and the desorption efficiency from sorbent tubes are acceptable.

Regulations:

References:

ID# 232

Category: Sampling

Question: I am new to working the Pennsylvania area and I am looking for what chemical compounds I need to sample based on Act 2 requirements. My site (soils and groundwater) may have petroleum products from gasoline stations and auto repair garages. Is there a short list of petroleum products that I should be sampling for?

Also, identified in the Phase I report are dry cleaners and laundry facilities near my site. Is there a specific list of chlorinated solvents that I need to sample for?

Response: In general, there are no specific lists of contaminants to be sampled for to satisfy Act 2 requirements. The expertise of the consultant and/or remediator are relied on to determine, through environmental due diligence, what regulated substances may have been released.

The one exception to this is for the release of petroleum products. Our Technical Guidance Manual contains a short list of substances to be sampled for based upon the particular petroleum products that have been released. This short list is also provided in the Closure Requirements for Underground Storage Tank Systems under the Storage Tanks program. The short list is contained in Section IV.E of the Technical Guidance Manual and may be accessed on the web at <http://www.dep.state.pa.us/dep/deputate/airwaste/wm/landrecy/manual/Manual.htm>.

There is no corresponding list of chlorinated solvents for dry cleaning establishments; the sampling should focus on typical solvents used in the industry and their breakdown products.

Regulations:

References:

ID# 237

Category: SIA

Question: Is a site that is within a Keystone Innovation Zone the same as a Keystone Opportunity Zone for purposes of eligibility as an SIA site? Previously Keystone Opportunity Zones were determined to have the same SIA eligibility effect as Enterprise Zones. I would like to know if Keystone Innovation Zones can be considered likewise.

Response: Yes.

Regulations:

References:

ID# 26

Category: Site Characterization

Question: Is drilling through the basement of a building required to determine the full extent of contamination?

Response: As presented in the DEP Act 2 workshops, a person may propose that a building or other structure is part of a pathway elimination measure, characterize the contamination outside the building “footprint” and presume that the structure is preventing direct contact horizontally. To address the potential environmental concerns vertically (other than vapor intrusion which is discussed later) the groundwater should be sampled to determine the effects of the contamination on that media. If groundwater is not adversely impacted, and it is determined by the licensed professional that there is adequate information to develop a fate and transport analysis, the site characterization of soil under the structure is not necessary. The basis for this answer is found in the TGM, Section I.D.7.b.i (page I-13):

Here, the soils are characterized outside the building footprint to assure that the horizontal extent above the standard is no larger than the building footprint.

For Statewide health sites, soil gas or indoor air sampling per the vapor intrusion guidance would address vapor intrusion concerns.

Site-specific standard sites would follow normal risk assessment procedures. One concern a remediator should consider when weighting this issue, is to what extent the contamination under the building may be a source of future contamination of groundwater. This would be a factor in performing the fate and transport analysis, as part of the demonstration of attainment requirements.

Regulations: 250.2042(g)

References: TGM, I.D.7.b.i

ID# 61

Category: Site Characterization

Question: Do you have to assess both the soil and the groundwater at a site or can you opt for just one or the other?

Response: If the licensed environmental professional determines that the contamination has likely reached, and has impacted the groundwater, then both groundwater and soils must be assessed. This should be discussed with the DEP licensed professional. This is true even if the remediator is choosing to attain an Act 2 standard for soils only, however the rigor to which assessment is applied to groundwater when it is not a part of liability relief may be less.



Regulations:

References:

ID# 87

Category: Site Characterization

Question: Some DEP regional offices required the characterization of the entire property and remediation of all areas found to have contamination above the Statewide health standard regardless of the site identified in an NIR. Does this continue to be the policy of the DEP?

Response: No. That was never the policy of the DEP. As clarified in the revised Technical Guidance Manual, a remediator may voluntarily submit an NIR for a property without being obligated to study the whole property. It is up to the discretion of the remediator as to what is included in the request for liability relief under Act 2. It is up to the Department to take a separate action if deemed necessary. The only exception to this is with Special Industrial Areas (SIA), which by statute cover the entire property.

TGM I.B. (relating to Voluntary Nature of Act 2):

“If the Department is aware of contamination on a property, which is NOT part of a proposed remediation under a submitted NIR, the Department may suggest that the remediator include this area, or site, as part of the NIR. However, if the remediator declines to include other known areas of the property, the Department will NOT interfere with the voluntary cleanup and will approve a final report that otherwise meets the requirements of Act 2. The Department always reserves the right, as a separate action, to apply its enforcement discretion in requiring remediation of other contamination on the property which was not addressed by the voluntary cleanup in the NIR. However the exercise of such enforcement discretion is intended to be based on DEP’s knowledge of other contamination on the property, which may significantly threaten human health and/or the environment, not on a requirement that the property owner perform an environmental site assessment to identify other areas of concern.”

Regulations:

References: TGM I.B

ID# 122

Category: Site Characterization

Question: Is a vertical profile of groundwater quality data required at every site?

Response: No. The need to establish a vertical profile of groundwater quality based on sampling, is based on the licensed Professional Geologist's conclusion that there could be downward migration of contaminated groundwater or separate phase liquid. In order to develop an adequate sampling plan a site conceptual model should first be developed. The model should focus on contaminant fate and transport processes, such as contaminant pathways, how the geologic materials control the contaminant pathways (depositional environments, geologic structure, lithology, where the site is in relation to the local and regional recharge and discharge zones, etc.), types of contaminants present (i.e., hydrophobic versus hydrophilic), and the processes that influence concentrations of the contaminants present such as dilution, biodegradation, and dispersion. If the licensed Professional Geologist concludes that there is likely downward migration of contaminants, then multiple wells at completed appropriate depths is warranted. As long as the conclusion is reasonable based on the interpretation of data, the department will accept the conclusions of the Licensed Professional Geologist.

The recommended guidance is the DEP Groundwater Monitoring Manual, available online at:

<http://www.dep.state.pa.us/eps/docs/cab200149b1126000/fldr200149e0051190/fldr200149e32221af/doc20026sb490900e/383-3000-001.pdf>

Regulations:

References:

ID# 123

Category: Site Characterization

Question: I have been told that any data I have that is older than 2 years should not be considered in an Act 2 submittal, but it seems unwise to ignore it. What is the value of historic data with respect to the Act 2 program?

Response: The issue of use of data should be ruled by common sense. Here are some issues to consider when using historic data:

- Does the data set comply with current collection and analytical methods?

- Is the historic information a complete data set in terms of old versus new analytical parameters?
- What is the history of releases at the site?
- Have the source areas been identified?
- Is the site currently active or abandoned Brownfield property?
- What remediation activities have been implemented?
- Will historic data be used to identify pathways and receptors?
- How was it used to make decisions?
- How will it be used to make new decisions, and is it sufficient to reach a conclusion? Will historic data be used for delineation of the groundwater plume, extent of soil contamination, or attainment demonstration at the site?
- Does the historical data support an acceptable site conceptual model?
- Can the sources of the historic data be located and is it reliable?

Here are some guidelines in using historic data:

- In almost all cases, all historical data has value.
- The usefulness of data for site characterization is a function on the actual or reasonable presumption that the site conditions have not changed (e.g. no new releases).
- \* Therefore, sites that are not reasonably expected to have had new releases, and the data is less than 2 years old, can use that data as their assessment data, pending the professional judgment and strongly advisably concurrence of the DEP project manager.
- \* Sites that are not reasonably expected to have had new releases and the data is more than 2 years old, should have historic data submitted with limited additional current data to confirm the presumption (e.g. a phase I type judgement) that there have been no new releases.
- Sites that are expected to have had releases, should in all cases give both historic data and current data, per direction of a Phase I type analysis.
- The usefulness of older data for attainment is dependent on media.
- \* For soils attainment, current data (some judgement can be exercised for data up to one year old) is needed.
- \* Historic groundwater monitoring data is useful to see trends, but the numeric attainment tests data usefulness must be limited to the time after which groundwater remediation has stopped and rebounded.
- \* The 8 sample rounds of groundwater data shall be collected within a term not exceeding three (3) years.

Generally, historic groundwater data, including at least the last 4 quarters, is acceptable for attainment, and this can be extended to cases where there has only been soil remediation. Hence, one may need only 8 quarters minimum, but could use 3 or more years, to calculate the 75%/10X, or an approved statistical test.

Regulations:

References:

ID# 204

Category: Site Characterization

Question: When applying a site specific standard for contamination at a regulated storage tank facility (regulated under Chapter 245) does the full extent of soil and/or groundwater contamination need to be delineated to the Statewide health standard? Chapter 250 of the Land Recycling program indicates we must delineate to a standard, not necessarily the Statewide health standard.

We have received different answers from different case managers in the storage tank program. Please clarify this issue so we can consistently manage our projects in different regions.

Response: Characterization is required to be sufficiently detailed that the remediator can provide the Department with assurance that all concentrations of regulated substances above the selected numeric standard have been identified. For the site-specific standard, characterization is not required to the level of the Statewide health standard. Section I.D.7.b.i of the Technical Guidance manual addresses this issue, and is provided below:

In soils, the characterization must be as least to a concentration sufficiently below the selected numeric standard, or to where it can be demonstrated that the pathway elimination measure is adequate to protect public health and the environment, to ensure that all areas containing regulated substances at or above the selected numeric standard have been adequately characterized, and that is sufficient to support a fate and transport analysis which shows where the contamination is currently located and those areas to which it is moving. The remediator determines the concentration level for characterization below the minimal level stated above. The remediator must state what factors were used in determining the level used to define the site boundaries.

The obligation to replace affected or diminished water supplies, found in 25 Pa. Code Section 245.307 under the Storage Tank Act (Act 32), may require additional sampling/investigation beyond the site characterization requirements necessary to determine and achieve a standard under the corrective action regulations and Act 2.

Regulations:

References:

ID# 243

Category: Site Characterization

Question: Is it appropriate to use 99% UCL results for site characterization under the Statewide health standards? I have a site where 190 soil samples were collected on a 6 acre property in a biased fashion. They derived a 99% UCL value to determine what contaminants of concern are above the SHS. Is this an acceptable approach? More than one distinct area of contamination exists. I was under the impression that the statistical analysis applies to attainment only.

Response: They could use 99% UCL or other approaches to determine which regulated substances that they would like to use the Statewide health standards. This is a site management decision of the remediator. The Department would not dictate such decision. However, such decision should not be confused with the attainment demonstration. The approach you described may be good for selecting SHS or SSS (a remediation decision), but is not appropriate for attainment demonstration. For attainment demonstration, they would calculate the 95% UCL for each distinct area of contamination that exceeds the SHS MSCs. They should not include data from clean areas for such calculations.

Regulations:

References:

ID# 33

Category: Site-Specific Standard

Question: A person had a site-specific standard site with no current or probable future drinking water use of groundwater (in town with public water, municipal ordinance), but there was use of groundwater for non-DW purposes (e.g. washing cars, watering lawns, etc.). How do they consider risk and appropriate standards under the site-specific standard? For example, must they meet DWLs because someone could drink out of the hose?

Response: Fundamental to the site-specific risk based cleanup approach is that actual current and future risk is considered. Exposure pathways associated with inhalation, ingestion, dermal contact, ingestion of produce from home gardens must be considered. Drinking water levels would not need to be met because the scenario of someone drinking out of the hose represents incidental ingestion and not a relevant pathway for the risk assessment.

Regulations: 250.402(b), 250.602(c)

References:

ID# 38

Category: Site-Specific Standard

Question: How do I determine a complete exposure pathway? Do I use groundwater modeling results to determine an incomplete exposure pathway if such results indicate acceptable concentrations at the exposure point?

Response: The complete exposure pathway determination is based on the consideration of the chemical and physical properties of contaminants and the direction and rate of groundwater flow. This is just a qualitative evaluation. A pathway is considered to be complete if there is a release, and exposure point where contact can occur and an exposure route by which contact can occur. Detailed quantitative evaluations, such as using a groundwater model to predict exposure concentration, are not used in the complete pathway determination. Instead, such detailed quantitative evaluations should be included as part of the risk assessment report. A pathway is considered complete if exposure is present at the current or future exposure points. This is true for any level of exposure, even if that concentration level equates to an acceptable risk. Having demonstrated a pathway is complete, a person could then apply a pathway elimination measure, or demonstrate that the risk is within the acceptable range.

Regulations: 250.603

References:

ID# 88

Category: Site-Specific Standard

Question: A person completed a baseline risk assessment and found that the risk was within the acceptable limits of Act 2. Do they have to develop site-specific numeric values, or can they submit the baseline RA as their demonstration of attaining the site-specific standard?

Response: It is not necessary to develop site-specific numeric values in all cases under the site-specific standard. As presented in the Act 2 client workshops, there are 5 attainment options under the site-specific standard:

#1 Document in the RI that no complete exposure pathways exist

#2 Make demonstration that baseline risk is within allowable limits (see note below)

#3 Show that pathway elimination is effective

#4 Use sampling and statistical analysis to show site-specific numeric standards are met

#5 Use residual risk assessment

Note:

When using the baseline risk assessment to demonstrate attainment for groundwater, a person must demonstrate that risks at all exposure points (in soil, groundwater, surface water, and/or air) that may be inside the property, at the POC wells and off property, if necessary) as well as fate and transport analysis to establish a complete and accurate site conceptual model. A mistake that is sometimes made is to take one or two quick rounds of site characterization samples (indicating concentrations corresponding to  $1 \times 10^{-4}$  risk or less) and using that alone as a base line risk assessment. This does not represent an acceptable baseline risk assessment.

The baseline risk assessment site characterization data requirements include groundwater monitoring data over multiple quarters to account for seasonal variations.

Regulations:

References:

ID# 30

Category: Soil-to-Groundwater Values

Question: Under what circumstances would the Statewide health standard saturated soil-to-groundwater generic numeric values be applicable?

1. Are persons required to take soil samples below the water table to demonstrate attainment of a standard?
2. Would soil-to-groundwater numeric values be applicable in wetlands, or how else would attainment demonstration be made in wetlands?
3. Also, how is the determination of saturated soil made?

Response: #1 & 3: The wording of the regulations uses the phrase “soil in the zone of groundwater saturation” to include those soils that are intermittently or periodically saturated by rising and falling groundwater levels. These soils may be identified either after monitoring groundwater levels over at least 4 quarters to determine the seasonal high water elevation for a site or by observation of evidence of periodic saturation, such as soil mottling. In the case of soils below the water table, contamination becomes a groundwater issue, as the soil is in constant contact with the groundwater rather than being only periodically saturated. Sampling of these permanently saturated soils is not necessary. Instead, sampling of the groundwater itself would be used to determine the effects of the soil on the groundwater.

#2: As with stream sediments, the primary impacts of contamination in wetlands are to ecological receptors and the ecological screen under Statewide health or the ecological risk assessment process under site-specific would be needed to demonstrate attainment. Also as with stream sediments, the remediation of wetlands can actually be more harmful than the contamination itself. This is another reason wetlands are treated similar to sediments.

It must be emphasized that there are 5 options for satisfying the soil-to-groundwater portion of the Statewide Health Standard. The 1/10<sup>th</sup> provision for saturated soils is only applicable in selecting the generic value to compare to the other options to determine the appropriate soil-to-groundwater value.

Regulations: 250.308(a)(2)(ii), 250.308(a)(4)(ii)

References:

ID# 212

Category: Soil-to-Groundwater Values

Question: I have a question concerning the soil to groundwater pathway numeric values calculation for saturated soils. First of all, why is the PADEP calculating a numeric soil to groundwater value to predict whether soil impacts will migrate from saturated soil to groundwater above the groundwater MSC. If the groundwater MSC is met, the saturated soil to groundwater value is irrelevant. Similarly, if the soil to groundwater value is attained, but the groundwater MSC is not, groundwater is still a concern.

The language used to determine a saturated zone soil to groundwater value is not clear. Referring to 250.308(a)(2)(ii), for soil in the zone of groundwater saturation, the standard is 1/10<sup>th</sup> of the generic value calculated by the equation in



paragraph (3). The calculated generic value for benzene is 0.13ppm. What would be the numeric value in the saturated zone 0.013 or 1.3ppm?

Response: The language in the regulations came about as a result of the wording in Act 2 in Section 303(b)(4) stating that the soil to groundwater pathway numeric value applies throughout the soil column. We are not talking about permanently saturated soils here, but soils that may be periodically saturated during times of elevated groundwater levels. The equation used to calculate the soil-to-groundwater values (the generic value) uses a dilution factor of 100 to account for the leachate passing through the unsaturated zone. When soil is saturated this dilution does not occur, so the regulations require that a remediator use one-tenth of the generic value when calculating the MSC for soils within the zone of groundwater saturation. We specifically chose the term “zone of groundwater saturation” rather than “saturated soils”, and define that to mean soil that is below the seasonal high water level, as evidenced by soil mottling or other evidence of periodic saturation. This one-tenth value essentially reduces the dilution factor from 100 to 10. For example, if benzene is in soil within the zone of saturation, the remediator would use 0.013 mg/kg (one-tenth of the published value of 0.13) as the generic value to compare to the 100X GW MSC value to calculate the soil-to-groundwater value.

We agree that when permanently saturated soil is contaminated by regulated substances, then it is a groundwater issue, not a soil issue.

Regulations:

References:

ID# 34

Category: Statewide Health Standard

Question: If a person can demonstrate that their site meets the soil buffer requirements under the Statewide health standard, do they have to demonstrate continued attainment by presenting a fate and transport analysis?

Response: No. The modeling used to establish the buffer distances incorporated fate and transport considerations, so additional analysis is unnecessary. The soil buffer approach is one of five options a user has to demonstrate compliance with the soil-to-groundwater portion of the Statewide health standard.

Regulations: 250.308

References:

ID# 35

Category: Statewide Health Standard

Question: What is the effect of sulfates being taken off the GW MSC list and listed as SMCLs?

Response: The effect of moving sulfates to the SMCL section of Table 2 in the regulations is that for those substances the point of compliance may be moved away from the property boundary up to and including the point of use. The effect is that the SMCL is not enforced in the aquifer, but at the point of exposure.

Regulations: 250.302

References:

ID# 36

Category: Statewide Health Standard

Question: What are the attainment sampling obligations of a person demonstrating attainment of SHS in groundwater where a drinking water well exists on the adjacent property?

Response: Attainment demonstration is made by sampling, but fate and transport analysis is also needed which may trigger the need for a postremediation care plan. For sampling, the attainment demonstration is made at the point of compliance (property boundary) and via sampling on all those wells off the source property which the site characterization showed were in an area with groundwater exceeding the MSCs. Finally, fate and transport analysis is performed to show continues compliance with the standards, or if analysis shows no-compliance in the future, then a postremediation care plan is required detailing how compliance will be maintained.

Regulations: 250.302

References:

ID# 77

Category: Statewide Health Standard

Question: Do we have a clean up standard for ferrous sulfate? This stuff is a hazardous substance with a low pH, <2. There was a release to the soil. It was neutralized with a lime solution. The soil was excavated. Now they want to sample to see that it is clean but they would like a target number. Any suggestions?

Response: Our Statewide health standards for inorganics are based on the metals present, not the associated anions. There is a Statewide health direct contact numeric value for iron. There is no soil-to-groundwater value because there is no groundwater MSC for iron, only an SMCL. The value for iron on a residential site is 66,000 mg/kg, and for a nonresidential site 190,000 mg/kg. The remediator would also be able to use either the background or site-specific standard, if appropriate data are available (toxicity values to calculate a site-specific standard, for example).

Regulations:

References:

ID# 78

Category: Statewide Health Standard

Question: Is the residential direct contact standard for arsenic now 41 mg/kg? The proposed clean fill policy shows a residential regulated fill concentration limit of 41 mg/kg.

Response: No, the Act 2 MSC has not changed. The direct contact value for arsenic remains 12 mg/kg. If and when any changes are made to any of the published Statewide health standards, they must first be published in the PA Bulletin.

Regulations:

References:

ID# 210

Category: Statewide Health Standard

Question: Given the recent changes in MSCs, should we be using the arsenic MCL value of 10ug/l or the current MSC of 50ug/l? The new tables reflecting the most recent

changes in the MSCs do not show the arsenic value being changed. Could you please advise us on this matter?

Response: EPA will not begin enforcing the 10 mg/L MCL until January 23, 2006. At that time the Department will also change its MSC to match the EPA MCL. Until that time, the MSC for arsenic in groundwater remains at 50 mg/L. All final reports in which arsenic is identified as a contaminant that are approved on or after January 23, 2006 will demonstrate attainment of the new standard.

Regulations:

References:

ID# 239

Category: Statewide Health Standard

Question: Chapter 250 lists the residential, used aquifer MSC for lead in groundwater as 5ug/L and references the source as the MCL. However, EPA's MCL is listed as 15ug/L. Could it be a simple typo, or is there another explanation?

Response: The MSC of 5ug/L for lead in groundwater is based upon the Pennsylvania state MCL for bottled water. EPA has not published an MCL for lead, but establishes an action level of 15ug/L to be met at the tap by treatment. Section 303(a) of Act 2 authorizes the Department to adopt groundwater MSCs based on both State and federal standards.

Regulations:

References:

ID# 245

Category: Statewide Health Standard

Question: I have a client that has asked me about a Region III RBC for TCE at 0.26 ppb in soil. Wanted to check with you to see if that number has any validity with PADEP Act 2 criteria. If the limit is valid I am concerned because it is below lab MDL currently. Risk based criteria and lab technology occasionally don't meet.

Response: Under Act 2, a remediator would screen soil concentrations based on our Statewide health standard of 0.5 mg/kg rather than the Region III RBC. We recognize that lab technology cannot always meet risk-based standards and therefore we use the PQL as the lower limit in demonstrating attainments of a standard (which does not become a factor for TCE).

Regulations:

References:

ID# 113

Category: Tank Remediation

Question: MSC exceedances in soil and groundwater for MTBE, yet release of liability granted (SHS). Southeast region asked why release was given, with MTBE contamination. Answer received: organic compounds no longer regulated under Act 2 if contaminant source is UST. New regs separating Act 2 & 250?

Response: The attainment tests used under the Statewide health standard do allow for exceedances of the selected standard. Organic regulated substances are regulated under Act 2 for regulated tanks, and the Act 2 standards do apply.

Regulations:

References:

ID# 233

Category: Tank Remediation

Question: I have been involved with a site under the Storage Tank Corrective Action Process and am working to obtain an Act 2 release of liability. I have demonstrated attainment of the Statewide health standard for groundwater even though we've detected MSC exceedances in the past. I attempted to demonstrate attainment of the Statewide health standard for soils based on UST closure samples, but the regional office claims that we must request a site-specific standard for soils unless we resample per the systematic random sampling procedure. I was informed by the regional office that when there are groundwater impacts, the tank closure soil samples cannot be used for attainment. To attain the Statewide health standard, I would have to do attainment sampling at the tank excavations. The regional office asked if I want to change my soil attainment to

the site specific standard for all of the soil parameters so that I do not have to do further work at the site.

This policy is new to me in that we've been successful in the past at having PADEP recognize the UST closure samples as attainment samples. I suspect that this "policy" is specific to that particular regional office because we are not finding that this is the interpretation in other regions. If this is a policy adopted by PADEP, I believe it should be made public and put in writing since it impacts the way in which Act 2 closures are obtained.

Response: What the region is enforcing are the "localized contamination" requirements at the bottom of page 13 of the tank closure guidance (253-4500-601). It says that localized contamination is defined as contamination not more than 3 feet from the source and not impacting groundwater. The conformational sampling for localized contamination is different (five samples, no exceedance of the standard) than for Statewide health standard arraignment (systematic random sampling) or attainment under site-specific pathway elimination. Thus, the suggestion from the regional office. You are not directed to only go site-specific; this was only a suggestion. You could do a normal Statewide health standard remediation. If your characterization did not show ANY contamination above the Statewide health MSCs, then you have no area to apply the attainment sampling to (ref: 250.703(b)). It is important to note that this means that, under Act 2, contaminated soil below a Statewide health standard gets the relief from liability but is not required to have attainment sampling (e.g. systematic random sampling), only characterization sampling.

Regulations:

References:

ID# 41

Category: Waste Interface

Question: Is it permissible to move waste on a site that is in the process of going through the voluntary cleanup process? e.g. consolidation of a large area into a smaller "footprint" (e.g. landfill).

Response: Yes. The fundamental issue is when does a party become a generator of waste when excavating contaminated media and non-media solids. Our policy is that a party may move contaminated soils and non-media solids within the area of contamination associated with the release (AOC). This may be done with or without resort to Act 2. If the remediator wishes to move the contaminated media

and non-media solids outside the AOC he may do so when the SSS standard is used so long as the remediator qualifies for the redistribution of the material under 287.101(e) and the redistributed material is not hazardous waste.

Regulations:

References:

ID# 43

Category: Waste Interface

Question: Is Act 2 applicable to unpermitted waste piles that ceased disposal before September 7, 1980?

Response: Yes, pursuant to 250.9 (a). Solid waste management areas or facilities that were not permitted or did not have an approved closure plan which ceased disposal activities before September 7, 1980 may be closed in-place by covering, grading, revegetation, and related closure activities for waste left in place consistent with best management practices to eliminate the pathway of exposure under the Site Specific Standard and to prevent pollution, odors, and other public nuisances. Areas of media contamination outside the cover may be remediated under any one or a combination of Act 2 standards. For clean closures where non-media solids are removed, impacted soil and groundwater may likewise be remediated to any one or a combination of Act 2 standards.

Regulations: 250.9(a)

References: