MARYLAND DEPARTMENT OF THE ENVIRONMENT
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Robert M. Summers, Ph.D.
Secretary

July 10, 2012

Larry J. Silverman, Esq.
7308 Birch Avenue
Takoma Park, Maryland 20912

Dear Mr. Silverman:

This is in follow up to our meeting in June wherein we discussed the proposed gasoline station at a Costco store in Wheaton. Since the meeting we have given some thought to the issues you raised and hereby offer a few comments that are pertinent to the matter.

As stated at the meeting, all gasoline stations are regulated uniformly regardless of size or location and are required to install and maintain specific pollution capturing equipment. This regulatory approach dates back to a time when the typical urban gasoline station had several pumps and a million gallons or two of sales yearly. Although there has been an industry shift to larger stations with sixteen or more pumps and up to twelve million gallons per year of product sales, Maryland has not changed its regulatory scheme at this time. This is not to say that a gasoline station, once permitted, poses zero risk to the public. There are a number of petroleum based toxic air pollutants that are emitted from gasoline stations that pose some level of risk to public health from the delivery and dispensing of fuel and the idling of vehicles. The difficulties are quantifying that risk, especially the incremental risk beyond existing levels, and determining what risk level is acceptable. A further complication is that available tools do not capture very well the cumulative effects of multiple toxic air pollutants or the incremental effect a single pollutant from multiple sources may have on public health. Given these issues and those mentioned later, the more distance that can be placed between a source and residences and community gathering places is certainly beneficial to minimizing risk.

In terms of quantifying risk, the first step is to determine the maximum ground-level concentration of a pollutant. This can be done through the use of mathematical models that estimate how air disperses as it moves away from an emission source. The maximum concentration can then be used to determine cancer risk and non-cancer risk associated with a particular pollutant. Models have their limitations, in that their accuracy is only as good as the inputs used. In the case of gasoline stations and other ground-level sources, the models often do not have available for input meteorological data that closely represent long-term conditions at or near the site. More general data are used, which can affect the accuracy of the model. Local topographical features that can affect model results are also not always well represented. Assumptions regarding emission rates from a source can also vary widely, especially when the sources are, in the case of gasoline stations, idling vehicles, which can emit at different levels

depending on idling time and the age of the vehicle. This is not to say that models have no value; but, whatever pollutant concentration results are provided via a model, they should be taken knowing what went into their development.

Once a maximum pollutant concentration is determined, risk can be assessed. Like models, risk assessments can also present uncertainties. In assessing risk two complications arise in such an exercise - the level of acceptable risk is not standardized and the risk associated with a given concentration from a source does not always take into account the existing risk from other similar sources nearby. For example, the Department uses a ten-in-a-million extra cancer deaths risk level as its acceptable risk when assessing cancer risk from toxic emissions from smokestack sources. The Environmental Protection Agency (EPA) often uses a level of one-in-a-million. Neither benchmark is right or wrong. As for cumulative effects, the Department's evaluation methods do not include any evaluation of cumulative effects; they merely assess a single source's impact on public health based on how emissions are dispersed in the atmosphere. The EPA has looked at the broader issue of cumulative impacts in its National-source Air Toxics Assessment (NATA), which was last conducted using 2005 data. Here, EPA compiled a nationwide inventory of emissions from outdoor sources, estimated the ambient outdoor concentrations of the emitted air toxics across the nation, estimated population exposures to these air toxics via inhalation and characterized potential health risks associated with these inhalation exposures. The NATA estimates that all 285 million people in the U.S. have an increased cancer risk of greater than 10 in one million. 13.8 million people (less than 5 percent of the total U.S. population) have an increased cancer risk of greater than 100 in a million. The average, national, cancer risk for 2005 is 50 in a million. This means that, on average, approximately 1 in every 20,000 people have an increased likelihood of contracting cancer as a result of breathing air toxics from outdoor sources if they were exposed to 2005 emission levels over the course of their lifetime. For a single pollutant such as benzene, NATA shows the cancer risk to be eleven and ten in a million, respectively, for Montgomery County and neighboring Prince George's County. Many of the pollutants that pose a risk, according to NATA, are mobile source related. NATA is a very broad tool to assess risk and no decisions regarding the permitting of a single source should be made using NATA results. NATA results do show, however, that risk from mobile source related emissions does exist; so, again, if there is an opportunity to move a new source, particularly one that is related to mobile sources, away from heavily populated areas it would serve to minimize the potential of adding any risk to what already exists.

There are references to the use of specific distances to address potential risks from gasoline stations. Both the California Air Resources Board (CARB) and the Environmental Protection Agency have published guidance regarding locating megastations in communities. Although neither agency has imposed any distance restrictions from a regulatory perspective, their guidance does support the concept that distance can play a role in reducing potential exposure. For gasoline stations dispensing 3.6 million gallons of gasoline per year, both the EPA and CARB recommend a 300 foot buffer between the gasoline stations and schools. Larger stations would conceivably warrant a larger setback. The EPA also recommends that for a school to be located within 1,000 feet of a gasoline station further study should be done before finalizing the location of the school. Again, although these documents are not binding, they do provide meaningful guidance to decision makers interested in taking the opportunity to factor in environmental concerns and minimizing environmental harm into the decision making process.

I hope the information above helps in some way to inform the issue for you. If you have any questions, please do not hesitate to contact me at 410-537-3260.

Sincerely,

Angelo Bianca, Deputy Director
Air and Radiation Management Administration

cc: Robert M. Summers, Maryland Secretary of the Environment