



ENVIRONMENTAL GROUP, INC.  
ENGINEERING, ARCHITECTURE AND SURVEYING, PC

March 29, 2010

Ms. Ashley Ley, AICP  
AKRF Environmental Planning Consultants  
34 South Broadway  
Suite 314  
White Plains, New York 10601

**Re: RASCO Materials, LLC – Site Plan Approval  
Response to Comments**

Dear Ms. Ley:

The following is a response for information requested in your March 1, 2010 letter to the Town of Dover Planning Board. Given the short time constraint before the next Planning Board meeting on April 5, 2010, I am sending the information as soon as it becomes available. The Comments (*italics*) and responses are provided in the order they were presented in the letter.

**I. Site Plan**

*Comment:*

*The site plan should be revised to contain the following information:*

- *The location of the proposed construction trailer;*
- *Additional detail should be provided on the proposed berm, including plantings and grading;*
- *Additional detail should be provided on the road widening, including any grading;*
- *The bulk table should be shown on the site plan.*

**Response:**

The attached revised site plan shows the trailer (Figure 3).

Additional detail on the berm, roadway widening, bioretention area, and plantings and gradings is provided on Figure 3A (attached).

The bulk table is shown on the revised plan (Figure 3).

**II. Contingency Plan**

*Comment:*

*The Spills section should identify NYDEC notification requirements for petroleum and hazardous spills. Specifically describing what types of spills need to be reported, the time frame within which spills must be reported, and who has responsibility for reporting a spill*

**Response:**

Section 3.1.5 (Spills) of The Contingency Plan has been modified to address the issues raised by the commenter. A revised version is included with this transmittal.

**III. Noise Analysis***Comment #1*

*The analysis procedure contained in the Spectra Report does not specifically address the Town of Dover Noise Code or the Town of Dover Environmental Performance Standards:*

**Response:**

We regret the oversight. A review of the Town of Dover Environmental Performance Standards for noise indicates that the allowable levels are less stringent than those required in 6NYCRR Part 360-1.14(p). Therefore, since the noise analysis performed by Spectra identifies compliance with 6NYCRR Part 360-1.14(p), the Town's code will automatically be met.

*Comment #2*

*The analysis procedure combines the predicted levels associated with the proposed facility and an estimation of background noise levels then compares them to 6NYCRR Part 360-1.14(p). Our review assumes that the Dover Environmental Performance Standards and 6NYCRR Part 360-1.14(p) limits apply to the source only and not the cumulative of the "source plus background."*

**Response:**

The commenter has assumed correctly. However, the noise model produced by Spectra includes both "noise level after all attenuation" (source only) and "source plus background" (resultant level). While it is evident we are in compliance with both criteria, our conclusions are based on the more conservative, "source plus background", results.

*Comment #3*

*For several receptors, the requirements of 6NYCRR Part 360-1.14(p) are satisfied because "15 dBA of foliage attenuation" is assumed. The NYSDEC permit limits the operation of the site from March 1 through December 1, provided that the ambient temperature is 45 degrees Fahrenheit or warmer. As such, the site is permitted to operate for 4-5 months in the leaf-off season. Therefore, the Applicant should verify that the assumed foliage is evergreen. It is noted that a worse case scenario noise analysis is typically in the winter months when most trees/foliage lose their leaves and the ground is frozen so there is minimal ground absorption.*

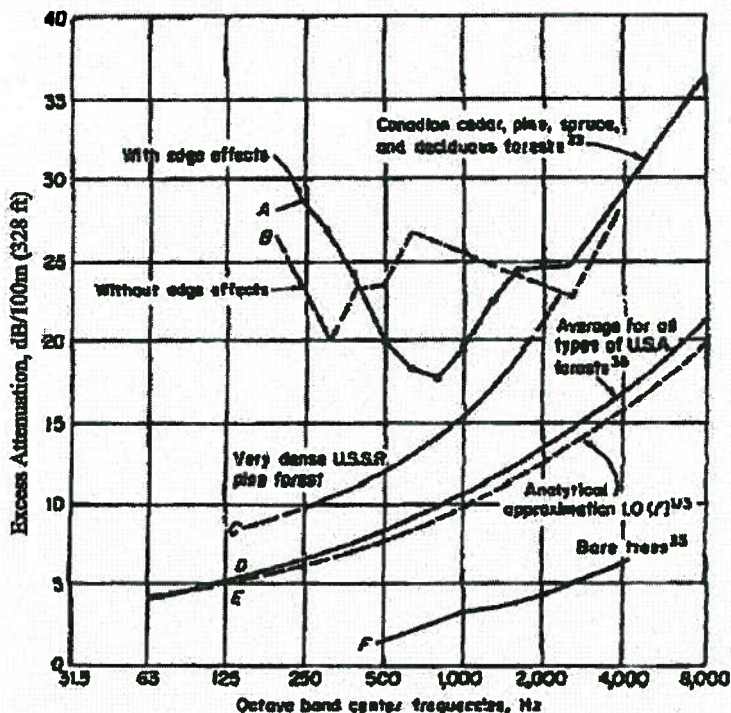
**Response:**

Taking the issue of ground absorption first, it should be noted that the noise projections in Spectra's model were run without the benefit of atmospheric absorption, which attenuates noise by 1 to 2 decibels at distances of up to 1,000 feet. As a result, the noise projections in the model are conservatively high and overstate actual projections by at least 1 to 2 decibels. It must also be noted that, while running between March 1 and December 1, RASCO will never be operating in a frozen ground condition.

The tree cover in the vicinity of the Mid-Hudson Recycling Facility is characterized by a mixture of deciduous and coniferous trees with shrubs and herbaceous ground cover. From the RASCO site to the surrounding receptors, the thickness of intervening vegetation ranges from 500 feet to 2,300 feet. This significant vegetative buffer in all directions will greatly reduce noise propagation from the site when the facility is operational.

This conclusion is supported in literature. Specific reference was taken from Noise Vibration and Control Engineering by Leo Beranek, author of many sound propagation publications, in which he describes noise attenuation due to intervening vegetation. The following chart, taken from Beranek's book shows measured excess attenuation for sound propagation through trees. In this chart, one can see that for thick forests attenuation due to trees is on the order of 10 to 25 decibels per 100 m (328 feet). For forests that are thinner, the vegetative attenuation is on the order of 5 to 12 decibels for every 328 feet. Using these numbers, the attenuation due to vegetation at this site, with forest thicknesses ranging from 500 feet to 2,300 feet, will range from 15 to 30 decibels (depending on direction). In our analysis, Spectra employed the lowest of all estimates in the credit taken for attenuation due to vegetation. Spectra's incorporation of 15 decibels is conservative for the vegetative thicknesses surrounding the site, and is only one-half that cited in the literature as the maximum attenuation due to intervening vegetation.

The model as constructed incorporates a leaf-off conditions (early November to late April in this part of the Hudson Valley). The issue of leaf-off conditions is clearly defined in the literature. As can be seen in the table below, bare trees yield excess attenuation on the order of 0 to 6 decibels per every 328 feet of vegetation, depending on octave band frequency. In the range of sensitivity to the human ear (500 to 8,000 Hz), attenuation due to bare trees is on the order of 2 to 6 decibels for every 328 feet of trees. In the setting at hand, this equates to attenuation from bare trees on the order of 7 to 36 decibels, depending on direction and frequency.



**Fig. 7.12** Measured excess attenuation for sound propagation in tree zones (forests). For very thick forests, the upper two curves show excess attenuations of 10 to 25 dB per 100 m (328 ft) at frequencies below 2,000 Hz. For less thick forests, the average curve shows excess attenuations of 5 to 12 dB per 100 m at these frequencies. Deciduous trees without their leaves (bare) yield excess attenuations of 0 to 5 dB/100 m. Curves A and B are Canadian; C is Russian; D is American; E is Eq. (7.23); and F is German.

Ground cover is also a significant source of noise attenuation. The convention in noise analysis is to act conservatively and not take credit for tree cover and ground cover in the same noise model, which is what Spectra did in its model. As outlined in Beranek, one typically takes credit for the cover type that yields the highest attenuation. For most of the year, attenuation due to trees dominates. During leaf-off conditions, however, groundcover and shrubbery play a more significant role in sound attenuation. As stated in Beranek, "The excess attenuation over thick grass and through shrubbery is higher [than trees]. The excess attenuation at 1,000 Hz for this situation can be as high as 23 decibels per 100 meter (328 ft.), and usually increases roughly at the rate of 5 decibels for each doubling of frequency", (e.g. 28 decibels 2,000 Hz, 33 decibels 4,000 Hz, etc.). Spectra supports the above approach and did not apply the maximum attenuation from groundcover in all directions around the site once the trees lose their leaves. There is also a significant thickness of shrubbery in the vicinity of the site that does play a role in noise attenuation. As a result, attenuation due to bare trees (7 to 36 decibels depending on direction and frequency), plus the increasing role of attenuation due to groundcover and shrubbery (23 to 33 decibels) provides a rationale for including a 15 decibel reduction across all operation scenarios for the RASCO facility.

*Comment #4*

*The analysis only examines compliance to the daytime limits. Since the NYDEC permit limits the hours of operation to 7 AM to 8 PM, and these hours correspond to Dover's Environmental Performance Standards, this is acceptable.*

**Response:**

Agreed

*Comment #5*

*The Applicant should confirm whether or not the Receptors used in the analysis were located at property lines or if they were located at specific noise sensitive uses/buildings. Both the Dover Environmental Performance Standards and the 6NYCRR Part 360-1.14(p) state that their limits should be met at the property line.*

Spectra concurs with the commenter that the DEC regulation and the Dover Environmental Performance standards state that the limits should be met at the property line. Spectra also acknowledges that our model identifies limits met at the receptor. Two of the receptors, A&B, are within the Howland Lakes Partners property line. Receptors C, D, & E are technically outside the property limits. To properly comply with the Town and DEC requirements, Spectra reran the model (see attached) for Scenario #2 (the most conservative scenario) to identify the noise level at the property line for receptors C, D, and E. The results, as expected, indicate compliance with both the regulation and the Town's Environmental Performance standard.

*Comment #6*

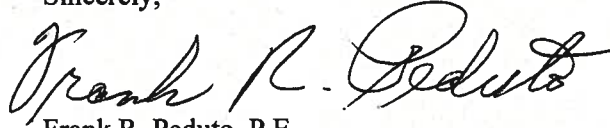
*The Noise Analysis did not address the vibration limits specified in the Town of Dover Environmental Performance Standards.*

**Response:**

The Town Planning Board agreed to postpone a vibration analysis until the facility is fully operational.

I trust these responses, with supporting attachments, adequately address all the issues raised in your March 1, 2010 letter. If there are any further questions please call me at 518-782-0882. A complete copy of these submittals will be provided to the Town Planning Board as required.

Sincerely,

A handwritten signature in black ink that reads "Frank R. Peduto". The signature is written in a cursive, flowing style.

Frank R. Peduto, P.E.  
Senior Environmental Engineer

Attachments

cc: Victoria Polidoro, ESQ  
Betty-Ann Sherer, T/O Dover  
Joseph Berger, P.E. T/O Dover Engineer  
Jack Nelson, RASCO  
Jon Adams, ESQ

Attch: