

**Site tour of  
Vermont Compost Company  
1996 Main Street  
Montpelier, VT  
October 20, 2011 (typos corrected 10/26/11)**

**W. Pennebaker**

On October 20, 2011, I toured the Vermont Compost Company facility at 1996 Main Street in Montpelier, guided by the owner/operator, Karl Hammer.

**Description of the facility and its operation.**

The facility is located on Main Street in Montpelier. While Main Street is a reasonably busy main road with a traffic count of about 3000 per day, the area is not particularly residential. The facility is on a 47 acre parcel, but composting activities are concentrated in an area of about eight acres near the road. Slightly more than two of those acres are where the final mixing, packaging and shipping of compost are done. These two plus acres are considered commercial and have an Act 250 permit.

Vermont Compost Company composts about 850 tons of food waste per year at the Main Street site, which translates to slightly more than 1100 cubic yards of food waste. This means that the facility handles about 5000 cubic yards of compost raw materials per year. In addition, the facility manages a companion facility located about four miles away at Fairmont Farms. The Fairmont Farms operation occupies 11 acres and uses a standard windrow system to compost cow manure, horse manure and wood chip mixtures. However, the final packaging and shipping is done at the Main Street site. No food waste has been composted at Fairmont Farms in the past year.

In addition to the owner, Karl, I saw two employees working on final stages of compost manufacturing and packaging, another turning a windrow, one apparently working on farming activities, and one employee in the office.

Vermont Compost Company activities are, except for the final processing and shipping steps, considered agricultural. The farm raises chickens that feed on food wastes brought in for composting and, because of that, the food wastes are classified as feed rather than solid waste. The operation is therefore agricultural. This is of some interest, since Karl said that one lawyer even asked if the chickens were a “ruse” to convert the operation to agriculture. While Karl joked about this (with some bad puns such as “ruse”ter), the numbers, to some extent, support the notion. The flock numbers about 1200 chickens and they sell about 16,000 dozen eggs each year, clearly not enough to support the number of employees working there. Not surprisingly, while Karl did not say what the total revenues are, he did say that revenue from sale of eggs is small compared to revenue from the sale of compost.

However, chickens apparently play an important role in formation of the compost, even though income the sale of eggs is minor. The chickens forage on the compost piles during the early stages of composting and therefore, in effect, process some of the food waste. According to Karl, chicken droppings are an important high-nutrient additive to the compost mixture. Even though some efforts have been made to minimize bird vectors, Karl actually views the presence of these “vectors” as an asset similar to chickens. Figure 1 shows the Vermont Compost Company chickens foraging in compost that had been processed for about two weeks (and thus, almost finished with the initial phase of composting).



*Figure 1: Chickens foraging on initial stage of compost.*

The terrain at the facility rises fairly steeply from the road. The 2+ acres where shipping and packaging are done is adjacent to where the office is located and is close to the road, above the road by about 20 feet. This area, which has an Act 250 permit, has an 8" base of crushed limestone in the areas used for composting.

The actual composting is carried out further up the hill. The pitch of the hill is relatively steep and only at the back edge of the composting operations does the slope become more moderate. The first couple of weeks of composting are carried out in two metal frame sheds partially covered with plastic and located fairly close to the top of the steeply pitched section of the hill (see figure 2). Karl told me that the base under these areas is native soil, but the low permeability of the soil at the site and blockage of soil pores by organic matter means that little runoff from the compost reaches ground water. It appears to this observer, however, that leachate from the compost is controlled more by accident than design. The berm to the right in figure 2 is made of top soil from the site, compost and wood chips, and is periodically harvested.

Although the facility is on relatively steeply pitched terrain, it is terraced such that each area where composting area is done is relatively level. Each terrace is bordered on the down-slope side by piles of compost or similar material that acts as a filter for water passing through. The structure is repeated as one goes from the top of the compost area, where the initial phase of composting is done, to the lower



*Figure 2: Plastic-covered metal frames covering initial compost stage.*



*Figure 3: Rear view of sheds for final processing and shipping*

buildings where compost is mixed with additives and packaged. Karl was clearly proud of the site water management and felt that the relatively steep pitch of the site was not a problem. As far as the VCC site is concerned, Karl stated that the worst site one could choose for composting would be one that was very flat. In short, there must be enough pitch to keep water draining rather than puddling.

The metal frames covering the two initial composting stage areas can be seen in figure 2. Figure 3 shows the sheds where final processing and shipping are carried out. In the foreground of figure 3, just behind the sheds, are plastic-wrapped compost packages received from Fairmont Farms. Most of the area in figure 3 is in the 2+ acres covered by the Act 250 permit.

### **Impacts:**

One neighbor located immediately adjacent to the facility on the same side of the road has been the source of a number of complaints in recent years. Karl indicated that these complaints were primarily about food wastes dropped on the neighbor's property by crows and other wild birds.

As a side note, I was told that this neighbor purchased their property in 2002, several years after Karl filed for permits for the composting facility on his property. Karl indicated that he tried to purchase the neighboring property, but negotiations foundered on price.

Other neighbors in a nearby development have also made complaints at various times, the primary concern being that their wells might be affected. However, I was given to understand that since the tests of water from a test well at the base of the composting facility were negative, nothing has come of these complaints. In general, the neighborhood in the immediate vicinity of the facility is quite rural, as can be seen in the backgrounds of figures 2 and 3.

There are four likely impacts from this facility:

1. **Birds and other vectors:**

*Bird vectors have been addressed by adding metal frames (partially covered with plastic) over the two areas where initial composting is done (see figure 1). Only at this initial stage are food scraps likely to reach the surface of the compost where birds might get at them. Note the fake owls in figure 1 that help to scare wild birds away. Karl, incidentally, was quite skeptical of the mono-filament grid used to control bird vectors at the Williston facility.*

2. **Odor:**

*Odor may be a problem during the very early stages of composting when the windrows must be turned frequently to keep them aerated. However, this observer can vouch that odors are not a problem after two weeks of processing. I stood next to a windrow which had just been opened up by a machine and the odor was at most very slight.*

3. **Water pollution.**

*Water pollution appears to be reasonably well controlled. The principle controls of pollution of runoff water from the composting operation are: 1) minimal penetration of runoff to the soil under each terrace, 2) filtering with compost or other suitable material at the down-slope edges of each terrace, and 3) a progression of terraces starting uphill at the earliest stages of composting. The main proof that these steps work is the lack of pollution in the test well located at the bottom of the hill close to the road. Tests there indicate only an elevated concentration of salts from runoff from the nearby road.*

#### 4. **Noise.**

*Machinery noise may be an issue. Although the excavator turning the windrows did not create that much noise, this was probably because the machine in the metal frame enclosure was surrounded by (indeed somewhat embedded in) compost that absorbed much of the noise. Without the enclosure and surrounding compost, the noise would probably have been much more noticeable. The noise from the front end loaders moving compost bales in the final processing and shipping area may actually be more of a problem and Karl told me that the noise I heard was fairly typical. I estimate that under typical conditions, noise like this would be quite audible for a considerable distance, hundreds of feet or more.*

#### **Other:**

Over the course of the tour, it became clear that Karl has a jaundiced view of regulation, both local and State. This is understandable, given that Karl has spent about \$300K on legal fees over the years.

Karl is proud of the products they produce and clearly feels that they are of the highest quality. Indeed, he stated that no one else in Vermont can produce compost products that compete in quality.

When viewed from the road, the site is quite messy, poorly maintained, and with debris in many places. The office building that is prominently visible from the road is in run-down condition. However, some of the debris appears to be used for fill and some is part of the water management system. The actual composting operations seem to be relatively well run and the parts of the facility used for composting are in good condition.

It is of interest to this observer that Karl was not at all enthusiastic about the new facility at Williston. He feels that the high-tech approach they are using is flawed and the best composting technique is simple – in fact, “the simpler the better”. According to Karl, the Williston facility is having problems with their forced aeration system. While this may be true, Karl's critique may be premature. The Williston facility has been operating only since July of this year and is still refining their process.