



Hillcrest Industries Update: 9/4/12



North side of glass pile with two applications of Posi-Shell (shot-crete like material)



Air pollution control equipment, material conveying and storage equipment for the crushing and screening of slag and colored glass.

Website: For updates on this site, visit DEC's website at <http://www.dec.ny.gov/chemical/83781.html>.

Added 9/4/12:

Application of Posi-Shell, the shot-crete like material, was completed Friday, August 31st. Injection of nitrogen and carbon dioxide resumed after the Posi-Shell was applied.

Results from Residential Sampling – Dust

DEC collected five dust samples from four residential properties in response to resident's concerns about health risks from exposure to dust releases from the facility. Dust samples were collected July 10-17, 2012. See **Dust Sampling Locations** on page 3 for an aerial map of the sampling locations. Eleven samples were collected on site of the facility at specific release points and from raw material and finished product. Matching the types of particles found on the residential properties with the types found onsite of the facility could provide DEC staff with an understanding of which release points need to be better controlled. The samples were submitted to DEC's Microscopy Lab for analysis. The lab determined the composition of the residential dust samples and the size of the particles to evaluate whether the dust could be from operations at the Hillcrest facility.

The microscopy lab found particles in all five of the residential dust samples with similar characteristics as the particles of glass fragments from the facility. The samples collected from the facility contained particles which ranged in size from fine particulate matter (particles 2.5 microns or less in size) to much larger sizes, well above 100 microns with most particles very large in size. By comparison, the width of human hair is 40 to 120 microns, where a micron is one millionth of a meter. Similarly the particles in the residential dust samples which were distinguished as either glass fragments, glass beads or slag fragments were also mostly very large in size, generally 10 microns and larger, but also contained smaller particles in the 2.5 to 10 micron range. The particles found in the residential samples attributable to facility releases appear to be from crushed clear glass that feeds the bead furnace and fines from the glass bead furnace cyclone. In addition to the glass spheres and fractured glass, some slag product was identified. Results of the analysis are available upon request.

Conclusion

The residential samples consisted primarily of large particle fragments from the Hillcrest facility. The facility release points for most of the particles found in the residential samples will be controlled through repair of leaking equipment, repairing and/or installing additional air pollution control devices and application of dust suppressant to the raw material piles and to the onsite roadways. DEC will continue to monitor the operations of this facility to ensure our particulate air pollution mitigation strategies are successful.

Results from Residential Sampling – Air

DEC collected four one-hour ambient air samples on August 8, 2012 between 12:00 p.m. and 3:00 p.m. in response to community concerns about odors and exposure to volatile air contaminants from the Hillcrest facility. See **Air Sampling Locations** on page 4 for an aerial map of the sampling locations. Three samples were collected in the odor plume in the neighborhood downwind from the Hillcrest facility, one of which was at the facility property line. A fourth sample was collected at the Attica High School between the gas well and baseball diamond, approximately 20 yards south of the parking lot. DEC's laboratory analyzed all air samples and provided the results for 41 volatile organic compounds (VOCs). These results were compared to DEC's Short-term Guideline Concentrations (SGCs) since the sample collection was a short period of time. SGC's were developed by the DEC to ensure that short-term exposures do not cause any significant health effects.

In addition to the 41 VOCs targeted by the sample method, our sampling results identified the presence of odorous chemicals of biogenic origin, such as fatty acid esters. As these decay products are not targeted air contaminants we routinely monitor, concentrations cannot be quantified. People differ in their ability to detect these chemicals by smell, but in some cases the odor thresholds can be very low – down to parts per billion (ppb) levels.

With the exception of one chemical (1,1,1-trichloroethane or 1,1,1-TCA), levels of VOCs detected in the four samples are very low, mostly less than one part per billion, and similar to what's found in typical urban background air. In general, these results do not show a consistent pattern of higher concentrations near the Hillcrest facility and decreasing concentrations moving away from the facility as would be expected if the facility was the main source of these VOCs. For many of the analyzed chemicals, results from the four samples were roughly the same and for several others, results from the two sites between Hillcrest and the school were higher than the Hillcrest and school results. None of the four samples showed any results above DEC's SGC. Two samples had somewhat higher results than typical background for 1,1,1-TCA, but there was not a consistent pattern observed that would suggest a likely 1,1,1-TCA source. Sample analysis is available upon request.

Uncertainties and Limitations

There is a lot of uncertainty with the collection of short-term, one hour samples. Air levels of these chemicals can change quickly, so a single one-hour sample only provides a "snap-shot" of one point in time, and levels could be much different at other times. When DEC conducts these types of air sample collections, they are considered for screening purposes for short-term exposures only. Results from single one-hour samples cannot be used to characterize long-term exposures. Because of the sensitivity of the sampling equipment nearby sources such as lawn mowing, cigarette smoking, residential storage of gasoline will also influence the air sample results. On the day that the samples were taken, the Attica high school appeared to have recently applied asphalt sealer on the school's parking lots and roadways. Asphalt odor was evident while standing in the vicinity of the pavement. Releases of volatile and semi-volatile organic compounds are very common from the application of asphalt sealers and could have influenced these sample results, although high levels of potential asphalt-related compounds were not observed.

Conclusion

In conclusion, the VOC results are generally low and below DEC's SGCs. A clear pattern suggesting emissions of solvent VOCs from the Hillcrest facility, affecting air quality in the adjacent community, was not observed. Air contaminants that are odorous at very low concentrations were observed in the analysis but are not reported in the results because their concentrations cannot be estimated with this method. Overall, the results do not indicate a health concern in the community from increased exposure to industrial solvent chemicals assessed with this sampling method. Nevertheless, acute health symptoms such as headache, nausea and cough could still be expected among residents experiencing persistent strong odors from chemicals not captured in these sampling results. ***Night Sample Results:** Results from a one-hour air sample, collected by a resident on August 26th at 9:30 p.m. while the odor was strong, are still being processed.

What is Hillcrest Industries? The Hillcrest Industries facility located on Favor Street in Attica collects boiler slag material (hardened residue collected from off-site coal boilers) and processes it into abrasive blast media (sandblasting materials). The facility also processes glass fragments (cullet) into reflective road striping beads and abrasive blast media.

What is the source of the odor? A pile of glass fragments that the plant uses to make sandblasting materials and reflective glass beads is the major source of odors. The odor is generated by decaying food residue which is adhered to the glass.

What is the source of the dust? Dust is generated when the boiler slag and glass are ground down to smaller sizes. Most of this dust is captured in dust collectors but some is released into the environment. Dust may also be blown off the roadways and the slag pile.

What is Hillcrest doing to address community concerns? The company is currently processing their stockpile of glass to reduce its volume with the goal of eliminating the pile. Since this process will take some time, we have directed the company to implement odor control measures. The measures recommended by their consultant include an air withdrawal and treatment system, a nitrogen injection system and application of an impermeable Posi-shell cover system. The Posi-shell cover system was completed on August 31, 2012. We believe these actions will lead to the reduction of odors.

To reduce particulate emissions (dust) Hillcrest has repaired leaking process equipment, sealed off broken bag filters, ordered replacement filters and applied a dust suppressant to the facility's roadways.

Also, nitrogen gas was injected into glass pile at nine locations to reduce the temperature. The temperature of the pile at each injection point is being monitored to evaluate the effectiveness of the method for controlling odors. The Hillcrest facility has applied a spray cover to the glass pile to further reduce odors. Additionally, Hillcrest is in the process of removing the piles of plastic and paper from the property.

What actions has DEC taken? DEC has investigated odor and dust complains in Attica, and visited the Hillcrest facility on several occasions to inspect operations and investigate environmental concerns. On June 20, 2012 DEC issued a Notice of Violation (NOV) to Hillcrest Industries. This NOV cited the facility for several violations including:

- Failure to obtain coverage under the Division of Water Multi-Sector General Storm Water Permit
- Excessive nuisance odors from the property that are adversely impacting the local community
- Operating a solid waste management facility without a permit
- Placing fill within 100 feet of a regulated wetland

DEC is proceeding with an enforcement action against Hillcrest Industries. DEC officials met with Hillcrest representatives on July 17 to discuss agency and community concerns and are continuing to work with Hillcrest to address concerns identified. DEC is requiring Hillcrest to move recyclable material that was used for fill in a low area on the property by August 1st. Most of this material has already been moved. DEC is also in communication with the village and several residents of Attica concerning Hillcrest and will continue to provide updates and information as requests are made and as new information becomes available.

Who to Contact

Comments and questions are always welcome and should be directed as follows:

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Dust Sampling Locations



Air Sampling Locations



Site Location

