State of Ohio Environmental Protection Agency

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May 15, 2007

Via electronic and regular mail
Mr. Todd Hamilton, P.E.
General Manager
Countywide Recycling & Disposal Facility
Division of Republic Waste Services of Ohio
3619 Gracemont Street S. W.
East Sparta, Ohio 44626

Re: Approval of Countywide Recycling & Disposal Facility's Modeling Protocol

Dear Mr. Hamilton:

Countywide Recycling & Disposal Facility (Countywide) is required to conduct ambient air sampling by Order 5.A of the March 28, 2007 Director's Findings and Orders. Countywide was to propose a sampling plan following Ohio EPA's identification of sampling parameters. In a March 28, 2007 letter to Countywide, the Director identified sampling parameters. Countywide proposed an ambient air sampling plan on April 10, 2007 and in a May 1, 2007 letter, effective May 7, 2007, the Director approved Countywide's ambient air monitoring plan. Three initial sampling sites are identified as part of the approved ambient air sampling plan. However, in his March 28, 2007 letter, the Director further required:

> Countywide shall conduct air modeling to identify sites for more permanent locations that supplement and may replace the initial third, northeast site. . . . A modeling protocol is to be developed and presented to Ohio EPA Division of Air Pollution Control (DAPC) for review and approval prior to the initiation of modeling.

On April 30, 2007, Countywide submitted a protocol for the air dispersion modeling. Countywide has retained Earth Tech to perform the dispersion modeling to identify locations of expected maximum concentrations. Ohio EPA may use this information to aid in the supplementation and or relocation of the permanent sampling locations. The Ohio EPA's Division of Air Pollution Control hereby approves the modeling protocol, effective May 11, 2007, based upon the following conditions:

AERMOD air dispersion model shall be used to determine maximum concentrations. All Ohio EPA and US EPA modeling guidance shall be followed for this project.

AERMOD modeling inputs shall include source information, meteorological data, receptor locations, concentration averaging times, and output options. AERMOD shall be run in "regulatory default" mode when modeling this facility. The latest version of AERMOD, and its pre-processors, should be used for this project.

Digitized Elevation Models (DEM) shall be used to characterize the surrounding geographical area. The Universal Transverse Mercator (UTM) system coordinates shall be used to determine the location of the sources, buildings, and fence line.

Five years of meteorological data shall be used, with upper air and surface data corresponding to the county in which the facility is located. Unless on-site meteorological data are available, the surface data from the Akron/Canton Airport (National Weather Service station number 14895) and upper air data from the Pittsburgh Airport (National Weather Service station number 94823) shall be used in this analysis. Meteorology from 1986 to 1990 shall be used unless on-site meteorological data are being used. AERMET shall blend the data sets together into a form that is compatible for AERMOD.

AERMET also requires micrometeorological parameters based on land cover data. These parameters include the surface roughness, the albedo, and the Bowen ratio. Unless on-site meteorological data are being used, the micrometeorological parameters determined from the Akron/Canton Airport, rather than Countywide Landfill, should be used in the AERMET program. Ohio EPA prefers that AERMET be run using one sector and four seasons. The one sector should reflect the predominant land use of the surrounding area.

To determine the location of the maximum concentration an initial 100-meter receptor grid shall extend from the property line out to one kilometer. If concentrations increase with distance, receptors should be placed beyond one kilometer until the maximum concentration is determined. Once the maximum concentration has been located a 10-meter refined grid should be placed around the maximum receptor. This grid should extend out 500 meters. Fence line receptors should be placed around the facility, spaced 50 meters apart. In addition, individual receptors should be placed at the locations of nearby residences and other areas of concern or complaints. The final receptor grid should extend out 10 miles from the facility, with receptors spaced 500 meters apart.

The landfill is comprised of 258 acres, which has been divided into cells. Landfill cells that are rectangular in shape shall be modeled as area sources. Those cells that are not rectangular in shape shall be modeled as areapoly sources. All cells shall be modeled with release heights and vertical dispersion parameters of zero. Flares are used to burn off landfill gas. Flares shall be modeled as point sources and stack

parameters shall be determined using equations found in Engineering Guide #69: Air Dispersion Modeling Guidance, Question 7.2.

Countywide has indicated that no buildings are close enough to the flare to require downwash considerations.

Three different source scenarios shall be modeled. Scenario one shall model the "affected area" (i.e., Cells 1, 3, 4A, 4B and 6A) as one single area source. The emission rate for this area shall be 1 gram/second/square meter (1 g/s/m2). [We realize this area is slightly different than that proposed in the March 28, 2007 letter. However, upon further analysis we decided we may wish to look at a smaller, more concentrated area in one of the scenarios.] Scenario two shall model all the cells in the "88 acres" (i.e., Cells 1, 2, 3, 4A, 4B, 5A, 5B, 5C, 5D and 6A) and Cell 7 together as a single area source. The emission rate of this single source shall be 1 g/s/m2. Scenario three shall only model the flares. Flares shall be modeled as point sources and stack parameters shall be determined using equations found in Engineering Guide #69: Air Dispersion Modeling Guidance, Question 7.2. An emission rate of 1 gram/second shall be used.

All input and output files, in addition to a brief modeling report summarizing the methodology and model results, should be included in the final submittal.

If you have questions regarding this matter, please call Patty Porter at (614) 644-3695.

Sincerely,

Robert Hodanbosi

Robert Hodanbosi, P.E.
Chief
Division of Air Pollution Control

cc: Jason Perdion, Baker & Hostetler LLP
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