



Deer Park Community Advisory Council

Summary of September 26, 2011 Meeting

ANNUAL REPORTS ON PLANT EMISSIONS AND AIR QUALITY TRENDS

Plant Emissions Report to DPCAC Shows Significant Reductions

Seeing reductions in 6 of the 8 categories of plant emissions reported annually to the Deer Park Community Advisory Council (DPCAC) at the end of September, members praised the decreases and let plants know they want the declines to continue. Data provided by DPCAC plants come from their Texas Commission on Environmental Quality (TCEQ) Emissions Inventory and US Environmental Protection Agency (EPA) Toxics Release Inventory (TRI). The latest data are from 2010. The report was made by Tracy Taylor of Dow Chemical.

The 8 categories covered in the DPCAC report include 4 of EPA's criteria pollutants, which the agency first regulated in the 1970s for their nationwide potential for health impacts. The Emissions Inventory covers criteria pollutants plus volatile organic compounds (VOCs) that contribute to the formation of ozone, a respiratory irritant. "TRI releases to air" is the category DPCAC has tracked the longest. In recent years, benzene and 1,3-butadiene numbers have been reported specifically.

Overall, criteria pollutants were reduced 8% from 2009 to 2010 and have declined 27% since 2006. VOCs are down 15% since 2009 and 28% since 2006. TRI air emissions decreased 10% from 2009-2010. Over a five-year period, they have declined 7% and steadily since 2008. Since 1987, when TRI data reporting was first required, DPCAC plants have added 5 plants and still reduced these emissions of mostly hazardous air pollutants 81%. Benzene air releases have been reduced 56% since 2006; they went down 18% between 2009 and 2010. Butadiene emissions have decreased 27% since 2007 and 14% in the last year. The multi-year trends are downward, as the community expects. There are three main reasons for the reductions: equipment improvements, fewer upset events, and better data gathering.

The two categories that saw increases were oxides of nitrogen (NOx) and carbon monoxide (CO). Both are formed when fuel is combusted. NOx emissions increased 1% from 2009 to

2010, but they have declined 44% over the last 5 years. The small net increase came from individual plants having sources that operated for more hours, improvements in emission calculation methodologies, and an increase in the nitrogen content of wastes handled at one facility. The CO emissions rose due to variability in operations of some plant furnaces.

The emissions report tells members what is coming out of stacks, flares, storage tanks, valves, loading operations, etc. at DPCAC plants. There are more contributors to air pollution than DPCAC's 14 plants. To understand what air monitors can tell us about the outdoor air we breathe, DPCAC invites Walt Crow of Houston Regional Monitoring (HRM) to report each year. The HRM report may be viewed at <http://www.deerparkcac.org>.

DPCAC is a 21-year old forum for community-industry dialogue. The group meets again on Monday, Oct. 24, 2011 for a Chemistry 101 lesson on Bis-Phenol A (BPA), an update on the City of Deer Park's pipeline mapping project, and a summary of a seminar on hurricane surge suppression. For details about the 6 p.m. meeting, contact Frank Marine at 281/930-2500 (o).

Air Quality Improvements Seen in Report to DPCAC

Deer Park Community Advisory Council (DPCAC) tracks air quality in two ways each September. The emissions report tells members what is coming out of stacks, flares, storage tanks, valves, loading operations, etc. at member plants. (See www.deerparkcac.org) There are, of course, more contributors to air pollution than DPCAC's 14 plants. To understand what air monitors can tell us about the outdoor air we breathe, DPCAC invites Walt Crow of Houston Regional Monitoring (HRM) to report each year. His September 2011 report may be viewed at <http://www.deerparkcac.org>. See HRM's [Houston Air Quality Trends Review for 2010](#) for additional information.

Crow said, "The number of air monitors in the multi-county Houston area allows us to understand air quality better than any other city in the nation." Members find that Houston air quality offers challenges but is not as poor as the perception—and significantly better than that of Los Angeles though our area now has 52 ozone monitors compared to that city's 28. Additional monitors are also sampling the outdoor air for toxics. The DPCAC report covers both ozone and air toxics and looks at the region as well as the City of Deer Park.

The 2010 measurements of all regulatory air monitors show attainment of National Ambient Air Quality Standards (NAAQS) for sulfur dioxide, nitrogen oxide, carbon monoxide, and the 8-hour/84 parts per billion (ppb) ozone standards. Attainment of the stricter 75 ppb ozone standard has not yet been achieved.

A chart of the Houston-Galveston-Brazoria area shows dramatic improvement in ozone concentrations from 1985 to 2010. Another shows significant declines in the number of days a monitor exceeds the ozone standard. For the 1-hour ozone standard, there were fewer than 10 exceedance days in 2010 compared to about 70 in 1988. The concentration of NO_x in the air has declined 50% since 1985, based on measurements at the monitors in continuous operation

since that time. The downward trends prevail even with stricter standards and more monitors. All regulatory monitors met the 84 ppb ozone standard in 2010, but this year exceedances at the Manvel Croix air monitor mean that we will not repeat that success in 2011.

The steady reductions in ambient concentration for both NO_x and volatile organic compounds (VOCs) must continue for the ozone standards to be achieved. HRM has tracked concentrations of certain Highly Reactive VOCs since a major air study in 2000 showed they were particularly productive at forming ozone. The area monitors have measured a 64% reduction in the concentration of HRVOCs in the air from 2003 to 2010 (since TCEQ regulations were implemented).

Since 1988, HRM has tracked four air toxic compounds that are indicative of other VOCs in the air (most air toxics are VOCs). The average annual concentrations for benzene, toluene, ethylbenzene, and xylenes, have been reduced by 87% over the last 22 years.

Measured annual average concentrations of benzene and butadiene at monitoring sites with gas chromatograph equipment show values below the TCEQ's Air Monitoring Comparison Values (AMCV) for both pollutants.

An automated gas chromatograph was installed at HRM Site 16 in Deer Park to replace a monitor with older technology that has been operating since August 1995. The monitoring site was originally established in 1992 in response to DPCAC members' requests. The new monitor measures VOC 49 compounds – the results show that all compounds are well below their respective long-term AMCVs. However, one compound, isoprene, exceeded its short-term health-based AMCV for 10 hours over a 3-day period last November. Despite internal investigation of potential sources, no definitive cause has been discovered. However, no other repeated exceedances have occurred since that period.

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