DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B585326171

FACILITY: Detroit Media Partnership		SRN / ID: B5853
LOCATION: 6200 METROPOLITAN PARKWAY, STERLING HTS		DISTRICT: Southeast Michigan
CITY: STERLING HTS		COUNTY: MACOMB
CONTACT: Frank Heaney , Facilities Service Manager		ACTIVITY DATE: 02/25/2014
STAFF: Francis Lim	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Inspection		
RESOLVED COMPLAINTS:		

On February 25, 2014, AQD staff Sam Liveson and I conducted an inspection at the Detroit Media Partnership –North Plant Facility located at 6200 Metropolitan Parkway, Sterling Heights. Mr.Frank Heaney, Facilities Service Manager assisted during the air quality inspection.

Facility Description

This facility used to be known as Detroit Newspaper – North Plant. The Detroit Media Partnership is the result of the partnership between the Detroit Free Press and Detroit News. The Free Press and News combined their business operations (publishing, advertising, circulation) but maintained separate editorial staff. Gannett Company, who now owns the Free Press, is the managing partner. MediaNews Group, owner of the News is the limited partner.

This facility prints the Detroit Free Press, Detroit News, USA Today, and Oakland Press, including the newsmagazine. Facility hopes to do more commercial printing, but not the high quality printing since the presses they use are nonheatset. The six state of the art offset lithographic web printing presses were installed in 2005. The six presses replaced the nine old presses at this site and seven presses in downtown Detroit.

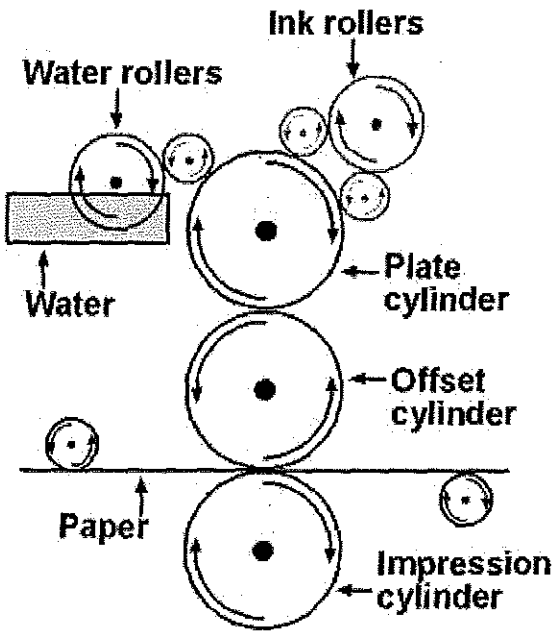
The presses were manufactured by MAN Roland, Germany. Each press has nine towers, approximately seven stories tall,150 feet long and 20 feet wide. The printing presses have a 50-inch web capable of producing 75,000 copies per hour.

This facility has an Opt-Out Permit No. 212-06 for an offset lithographic printing operation.

Process Description

Offset lithographic printing is a planographic printing method. The printing areas and nonprinting areas of the printing plate are on the same level or plane. Offset means that the printing is done directly from the image plate, but the inked image is transferred from the image plate to a rubber coated blanket cylinder, and then from the blanket cylinder to the substrate. The image to be printed obtains ink from the ink rollers which transfer ink to the image plate, while the non-printing area attracts a water-based film (called fountain solution, transferred by water rollers to the image plate), keeping the non-printing areas ink-free (water repels the oil based ink). The substrate (paper) is pressed against the blanket cylinder by the impression cylinder, transferring the ink from the blanket cylinder to the paper to produce the printed image.

The image plate is thin and flexible and usually made of aluminum.



For black and white printing, there is only one image cylinder/blanket/impression cylinder combination. For colored printing, additional image cylinder/blanket/impression cylinder combinations are needed, one each for black, red, blue, and yellow.

Air Emission Sources

The three major sources of air emissions from offset lithographic printing are from the ink, fountain solution, and blanket washing.

The facility is using nonheatset soy based inks. VOC content of nonheatset soy based inks is expected to be low. (NOTE: Soy bean oil is not exempt from the definition of VOC. But since the vapor pressure of soy bean oil is so low, when Method 24 is used to determine VOC content, only a small amount of soy bean oil evaporates.) From the EPA CTG Guidelines for Lithographic Printing, only 5% of the VOC is expected to be emitted. The rest of the oil and VOC (95%) are expected to be retained in the paper. Facility reports 0 VOC emissions from the ink.

Since offset lithography is a planographic printing process, a mechanism is necessary to keep the ink from spreading all over the image plate. This mechanism is to keep the nonimage area water receptive so that the ink does not flow to the nonimage area. A fountain solution is applied to the nonimage area of the image cylinder to make that area water receptive. In the past, facility used isopropyl alcohol as an ingredient of the fountain solution. Facility has been using Rycoline products Advance Edition 47/ACFS 147 Mild News Acid as fountain solution. It contains about 6% by weight of ethylene glycol which is a HAP. Mr. Haney informed staff that they are trying a different product called Bottcherfount N-1002 fountain solution that does not contain VOCs.

Rollers and blankets are automatically cleaned after each run. Solvent and water are used. Solvent used for automatic washing is Bottcher 260 NVM blanket wash. The automatic blanket wash system incorporates a closed-loop solvent reclaimer system to recycle the used solvent. The used solvent and water goes to a settling tank where the water and solvent is separated. The wastewater goes to the sanitary sewer, while the recovered solvent is filtered and goes to the recovered solvent tank. Filtered material goes to the waste storage tank. Water and virgin solvent is added to the recovered solvent – the mixture is ready to be reused again. When the recovered solvent loses its potency to clean, more virgin solvent is added to the mixture.

Amount of automatic blanket wash solvent used is determined by conducting an inventory of the fresh virgin solvent. Facility does not take credit for some solvent disposed as waste.

Solvent is also used to manually wash the blanket and some parts of the presses. The manual wash solvent is dispensed from drums into small portable containers. The manual wash solvent can also be dispensed and metered from the automatic blanket wash system. Rags

are dipped into the portable solvent containers and then used for cleaning.

EPA guidelines allow a 50% emissions credit for manual blanket wash if the solvent soaked rags are kept in closed containers and the VOC composite vapor pressure is less than 10 mmHg at 20 °C. The rags used for manual solvent cleaning are washed by a company called Aramark.

Facility is currently using a Bottcher 260 NVM blanket and roller wash solvent for automatic cleaning. Facility is using Bottcher 60 water miscible Blanket wash for manual cleaning. The cleaning solvent used is made up mostly of petroleum distillates. This product is what is recommended by the manufacturer. Bottcher 260 contains 30% by weight VOC according to MSDS. Bottcherin 60 contains 100 % VOC.

Water used for operations is "rehardened" by using a water rehardening agent manufactured by Rycoline Products. The water rehardening agent is a neutral inorganic salt solution containing no VOCs and no hazardous ingredients.

Permit-to-Install No. 212-06

Special Condition No. 1.1.
VOC content of fountain solution does not contain more than 5% by weight of any propyl alcohol, ethanol, and/or isopropyl alcohol. Total VOC emissions for the automatic blanket wash and manual wash for the period ending in December 2013 are 16.5 tons per year based on a rolling 12-month period. Emissions from the blanket and manual wash are less than the limit of 60 tons per year, based on a rolling 12-month period. Emissions from the non-blanket wash/manual wash (mostly fountain solution) are 2.5 tons, less than the limit of 10 tons per year based on a rolling 12-month period.

Special Condition No. 1.2.
Solvent wash usage is about 9823 gallons. Usage of blanket wash solvent is less than 17,647 gallons per year based on a rolling 12-month period.

Special condition No. 1.3.
All waste inks, fountain solutions, and cleanup solvents are stored in closed containers.

Special Condition no. 1.4.
Solvent cleaning rags are kept in closed containers. Partial vapor pressures of cleaning solvent were not verified, but it does not appear to exceed the limit.

Special Condition No. 1.5.
VOC content is determined through MSD sheets.

Special Condition No. 1.6.
Facility completes all required monthly calculations. However, calculations are not done monthly.

Special Condition No. 1.7.
Facility keeps the following information on a monthly basis: type and amount of each material used; VOC content of each material; amount of blanket wash used for manual cleaning; VOC emissions calculation for the blanket wash; and VOC emissions calculations from the non blanket/manual wash. Amount of blanket wash reclaimed is not kept because it is not necessary to determine emissions from the automatic blanket wash.

Special Condition No. 1.8.
Facility keeps a current listing of the chemical composition of each ink, fountain solution, blanket wash, cleaning solvents, and make up solvents. This information is necessary to estimate emissions.

Special Condition No. 2.1.
Opt-out limits are: for each individual HAP, 9.0 tons per year; aggregate HAPs, 22.5 tons per year; and VOCs, 90 tons per year – all based on a 12-month rolling time period. Total VOC emissions for the period ending in December 2013 are 19.4 tons per year based on a rolling 12-month period, less than the 90 ton limit. HAPs emissions are 2.4 tons per rolling 12-month time period. HAPs are from the fountain solution that contains 6% ethylene glycol.

Special Condition No. 2.3.
NOTE: There is no Special Condition No. 2.2. Facility determines HAP content from MSD sheets.

Special Condition No. 2.5.
Facility completes all required monthly VOC and HAP emissions. However, calculations are not done monthly.

Special Condition 2.6.
Facility keeps the following information on a monthly basis: amount of each HAP containing material and HAP content of each HAP containing material used. Individual and aggregate HAPs emissions calculations on a monthly and annual (based

on a rolling 12-month time period) basis were not completed since the previous fountain solution that was used did not contain any HAPs.

Special Condition No. 2.7.
Facility keeps the following information on a monthly basis: amount of each VOC containing material used; VOC content (pounds per gallon) of each VOC containing material used; monthly VOC emissions; and annual VOC emissions rate based on a rolling 12-month period. See attached monthly emissions report.

Miscellaneous Air Emissions Sources

Facility operates a paint spray booth used for maintenance and minor touch-ups. Usage is about 2 gallons for 2013.

Facility also operates two small cold solvent cleaners located in the machine shop and garage. Solvent used is a ZEP DYNA, a water based cleaner. The cold cleaners are serviced in-house.

NESHAP

Facility is not subject to the Printing and Publishing Industry National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63 Subpart KK, since the facility is not a HAP major source that uses: publication rotogravure, product and packaging rotogravure, or wide-web flexographic printing presses.

Facility is not subject to the Paper and other Web Coatings NESHAP, 40 CFR 63 Subpart JJJJ, since this facility does not operate web coating lines that are major for HAPs.

Other Issues

Staff requested emissions calculations records for the 12-month period ending December 2013. Mr. Heaney's submittal did not match the MAERS report. Upon closer examination of the submitted report, staff noticed that emissions from the manual wash solvent, Bottcher 60 NVM was not included in the requested emissions report.

NAME  DATE 07-30-14 SUPERVISOR CJE