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January 24, 2020

AJM-005-20

Attn: Compliance Tracker (AE-18J)  
Air Enforcement and Compliance Assurance Branch  
Enforcement and Compliance Assurance Division  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard  
Chicago, Illinois 60604

RE: Consent Agreement and Final Order (CAFO)  
Docket No. CAA-05-2019-0028  
Equistar Chemicals, LP – Tuscola Plant



Equistar Chemicals, LP submits this Supplemental Environmental Project progress report as required by paragraph 42 of the above mentioned CAFO.

During the reporting period, the facility contracted with LyondellBasell Global Engineering to complete the initial design phase of the upgraded reflux drum system to be utilized in the diethyl ether production process. Design work for the project was substantially complete as of December 31, 2019. The objective of this project is to stabilize the pressure control in the Ether Purification Tower to facilitate the return of diethyl ether back to the process rather than to the flare. This will reduce the amount of diethyl ether emissions from the process flare.

The Ether Purification Tower (TO1203) is a trayed distillation column designed to remove light hydrocarbons from diethyl ether. Overhead vapors from TO1203 are condensed in the light hydrocarbon removal condenser, EX1265. The condensed liquid is refluxed back to TO1203, and a small portion is purged back to the synthesis unit. TO1203 pressure is controlled by a nitrogen feed and flare bleed system using nitrogen. If pressure is low the nitrogen valve opens up to increase pressure and if pressure is high the valve to flare opens to reduce pressure. This pressure control is inherently unstable and consistently relieves ether to the flare.

The new design will include a new reflux drum, reflux pumps, and rerouting of the nitrogen and flare piping. Instead of EX1265 refluxing back to the tower it will reflux to the new drum with level controls. The liquid will then be pumped back to the tower as reflux with a small portion purged back to the synthesis unit. The nitrogen and flare piping will be rerouted to the new reflux drum which will be much more stable because of the level control in the reflux drum keeping a constant liquid seal to the flare. Engineering has been completed including redlined process flow diagrams, design simulations, and basis of design documentation. Packages are being prepared to be sent out for bid with a scheduled install and commissioning

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a LyondellBasell company

by end of 2020. During the reporting period no problems were encountered or anticipated with meeting the SEP deadlines.

If you have any questions or concerns, please contact Kristin Reynolds at 217.253.1291.

I certify that I am familiar with the information in this document and that, based on my inquiry of those individuals responsible for obtaining the information, it is true and complete to the best of my knowledge. I know that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Equistar Chemicals, LP

A handwritten signature in black ink, appearing to read 'A. McKee', with a long horizontal flourish extending to the right.

By: Aaron J. McKee  
Site Manager

CC: Susan Prout (C-14J)  
Office of Regional Counsel  
U.S. Environmental Protection Agency, Region 5  
77 W. Jackson Boulevard  
Chicago, Illinois 60604

Regional Hearing Clerk (E-19J)  
U.S. Environmental Protection Agency, Region 5  
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